

ReliaFRee

API Documentation

April 13, 2012

Contents

Contents	1
1 Package reliafree	2
1.1 Modules	2
1.2 Variables	3
2 Module reliafree.assembly	4
2.1 Classes	4
2.2 Variables	4
3 Module reliafree.calculations	5
3.1 Functions	5
3.2 Variables	8
4 Package reliafree.capacitors	9
4.1 Modules	9
4.2 Variables	9
5 Module reliafree.capacitors.capacitor	10
5.1 Classes	10
5.2 Variables	10
6 Module reliafree.capacitors.electrolytic	11
6.1 Classes	11
6.2 Variables	11
7 Module reliafree.capacitors.fixed	12
7.1 Classes	12
7.2 Variables	12
8 Module reliafree.capacitors.variable	13
8.1 Classes	13
8.2 Variables	13
9 Module reliafree.component	14
9.1 Classes	14
9.2 Variables	14

10 Module reliefree.configuration	15
10.1 Classes	15
10.2 Variables	15
11 Package reliefree.connections	18
11.1 Modules	18
11.2 Variables	18
12 Module reliefree.connections.connection	19
12.1 Classes	19
12.2 Variables	19
13 Module reliefree.connections.multipin	20
13.1 Classes	20
13.2 Variables	20
14 Module reliefree.connections.pcb	21
14.1 Classes	21
14.2 Variables	21
15 Module reliefree.connections.socket	22
15.1 Classes	22
15.2 Variables	22
16 Module reliefree.connections.solder	23
16.1 Classes	23
16.2 Variables	23
17 Module reliefree.function	24
17.1 Classes	24
17.2 Variables	24
18 Module reliefree.hardware	25
18.1 Classes	25
18.2 Variables	25
19 Package reliefree.inductors	26
19.1 Modules	26
19.2 Variables	26
20 Module reliefree.inductors.coil	27
20.1 Classes	27
20.2 Variables	27
21 Module reliefree.inductors.inductor	28
21.1 Classes	28
21.2 Variables	28
22 Module reliefree.inductors.transformer	29
22.1 Classes	29
22.2 Variables	29
23 Package reliefree.integrated_circuits	30
23.1 Modules	30

23.2 Variables	30
24 Module reliefree.integrated_circuits.gaas	31
24.1 Classes	31
24.2 Variables	31
25 Module reliefree.integrated_circuits.ic	32
25.1 Classes	32
25.2 Variables	32
26 Module reliefree.integrated_circuits.linear	33
26.1 Classes	33
26.2 Variables	33
27 Module reliefree.integrated_circuits.logic	34
27.1 Classes	34
27.2 Variables	34
28 Module reliefree.integrated_circuits.memory	35
28.1 Classes	35
28.2 Variables	35
29 Module reliefree.integrated_circuits.microprocessor	36
29.1 Classes	36
29.2 Variables	36
30 Module reliefree.integrated_circuits.palpla	37
30.1 Classes	37
30.2 Variables	37
31 Module reliefree.integrated_circuits.vlsi	38
31.1 Classes	38
31.2 Variables	38
32 Module reliefree.login	39
32.1 Classes	39
32.2 Variables	39
33 Module reliefree.main	40
33.1 Classes	40
33.2 Functions	40
33.3 Variables	40
34 Package reliefree.meters	41
34.1 Modules	41
34.2 Variables	41
35 Module reliefree.meters.meter	42
35.1 Classes	42
35.2 Variables	42
36 Package reliefree.miscellaneous	43
36.1 Modules	43
36.2 Variables	43

37 Module reliefree.miscellaneous.crystal	44
37.1 Classes	44
37.2 Variables	44
38 Module reliefree.miscellaneous.filter	45
38.1 Classes	45
38.2 Variables	45
39 Module reliefree.miscellaneous.fuse	46
39.1 Classes	46
39.2 Variables	46
40 Module reliefree.miscellaneous.lamp	47
40.1 Classes	47
40.2 Variables	47
41 Module reliefree.mysql	48
41.1 Classes	48
41.2 Variables	48
42 Module reliefree.notebook	49
42.1 Classes	49
42.2 Variables	49
43 Module reliefree.partlist	50
43.1 Classes	50
43.2 Variables	50
44 Package reliefree.relays	51
44.1 Modules	51
44.2 Variables	51
45 Module reliefree.relays.relay	52
45.1 Classes	52
45.2 Variables	52
46 Module reliefree.requirement	53
46.1 Classes	53
46.2 Variables	53
47 Package reliefree.resistors	54
47.1 Modules	54
47.2 Variables	54
48 Module reliefree.resistors.fixed	55
48.1 Classes	55
48.2 Variables	55
49 Module reliefree.resistors.resistor	56
49.1 Classes	56
49.2 Variables	56
50 Module reliefree.resistors.thermistor	57
50.1 Classes	57

50.2 Variables	57
51 Module reliefree.resistors.variable	58
51.1 Classes	58
51.2 Variables	58
52 Module reliefree.revision	59
52.1 Classes	59
52.2 Variables	59
53 Package reliefree.semiconductors	60
53.1 Modules	60
53.2 Variables	60
54 Module reliefree.semiconductors.diode	61
54.1 Classes	61
54.2 Variables	61
55 Module reliefree.semiconductors.optoelectronics	62
55.1 Classes	62
55.2 Variables	62
56 Module reliefree.semiconductors.semiconductor	63
56.1 Classes	63
56.2 Variables	63
57 Module reliefree.semiconductors.thyristor	64
57.1 Classes	64
57.2 Variables	64
58 Module reliefree.semiconductors.transistor	65
58.1 Classes	65
58.2 Variables	65
59 Package reliefree.switches	66
59.1 Modules	66
59.2 Variables	66
60 Module reliefree.switches.breaker	67
60.1 Classes	67
60.2 Variables	67
61 Module reliefree.switches.rotary	68
61.1 Classes	68
61.2 Variables	68
62 Module reliefree.switches.sensitive	69
62.1 Classes	69
62.2 Variables	69
63 Module reliefree.switches.switch	70
63.1 Classes	70
63.2 Variables	70

64 Module reliefree.switches.thumbwheel	71
64.1 Classes	71
64.2 Variables	71
65 Module reliefree.switches.toggle	72
65.1 Classes	72
65.2 Variables	72
66 Module reliefree.tree	73
66.1 Classes	73
66.2 Variables	73
67 Module reliefree.utilities	74
67.1 Classes	74
67.2 Functions	74
67.3 Variables	76
68 Module reliefree.validation	78
68.1 Classes	78
68.2 Variables	78
69 Module reliefree.widgets	79
69.1 Classes	79
69.2 Functions	79
69.3 Variables	82
70 Class reliefree.assembly.Assembly	83
70.1 Methods	83
70.2 Class Variables	84
71 Class reliefree.capacitors.capacitor.Capacitor	85
71.1 Methods	85
72 Class reliefree.capacitors.electrolytic.Aluminum	87
72.1 Methods	87
73 Class reliefree.capacitors.electrolytic.AluminumDry	88
73.1 Methods	88
74 Class reliefree.capacitors.electrolytic.TantalumNonSolid	89
74.1 Methods	89
75 Class reliefree.capacitors.electrolytic.TantalumSolid	91
75.1 Methods	91
76 Class reliefree.capacitors.fixed.CeramicChip	93
76.1 Methods	93
77 Class reliefree.capacitors.fixed.CeramicGeneral	94
77.1 Methods	94
78 Class reliefree.capacitors.fixed.Glass	95
78.1 Methods	95

79 Class reliefree.capacitors.fixed.MetallizedPaper	96
79.1 Methods	96
80 Class reliefree.capacitors.fixed.Mica	97
80.1 Methods	97
81 Class reliefree.capacitors.fixed.MicaButton	98
81.1 Methods	98
82 Class reliefree.capacitors.fixed.PaperBypass	99
82.1 Methods	99
83 Class reliefree.capacitors.fixed.PaperFeedthrough	100
83.1 Methods	100
84 Class reliefree.capacitors.fixed.Plastic	101
84.1 Methods	101
85 Class reliefree.capacitors.fixed.PlasticFilm	102
85.1 Methods	102
86 Class reliefree.capacitors.fixed.SuperMetallizedPlastic	103
86.1 Methods	103
87 Class reliefree.capacitors.variable.AirTrimmer	104
87.1 Methods	104
88 Class reliefree.capacitors.variable.Ceramic	105
88.1 Methods	105
89 Class reliefree.capacitors.variable.Gas	106
89.1 Methods	106
90 Class reliefree.capacitors.variable.Piston	108
90.1 Methods	108
91 Class reliefree.component.Component	109
91.1 Methods	109
91.2 Class Variables	110
92 Class reliefree.configuration.ReliefFreeConf	111
92.1 Methods	111
93 Class reliefree.connections.connection.Connection	112
93.1 Methods	112
94 Class reliefree.connections.multipin.Multipin	114
94.1 Methods	114
95 Class reliefree.connections.pcb.PCBEdge	116
95.1 Methods	116
96 Class reliefree.connections.socket.ICSocket	118
96.1 Methods	118

97 Class relief.free.connections.solder.PTH	120
97.1 Methods	120
98 Class relief.free.connections.solder.Solder	122
98.1 Methods	122
99 Class relief.free.function.Function	124
99.1 Methods	124
100 Class relief.free.hardware.Hardware	126
100.1 Methods	126
100.2 Class Variables	126
101 Class relief.free.inductors.coil.Coil	127
101.1 Methods	127
102 Class relief.free.inductors.inductor.Inductor	129
102.1 Methods	129
103 Class relief.free.inductors.transformer.Audio	131
103.1 Methods	131
104 Class relief.free.inductors.transformer.LowPowerPulse	132
104.1 Methods	132
105 Class relief.free.inductors.transformer.Power	133
105.1 Methods	133
106 Class relief.free.inductors.transformer.RF	134
106.1 Methods	134
107 Class relief.free.integrated_circuits.gaas.GaAsDigital	135
107.1 Methods	135
108 Class relief.free.integrated_circuits.gaas.GaAsMMIC	137
108.1 Methods	137
109 Class relief.free.integrated_circuits.ic.IntegratedCircuit	139
109.1 Methods	139
110 Class relief.free.integrated_circuits.linear.Linear	141
110.1 Methods	141
111 Class relief.free.integrated_circuits.logic.Logic	143
111.1 Methods	143
112 Class relief.free.integrated_circuits.memory.MemoryDRAM	145
112.1 Methods	145
113 Class relief.free.integrated_circuits.memory.MemoryEEPROM	147
113.1 Methods	147
114 Class relief.free.integrated_circuits.memory.MemoryROM	149
114.1 Methods	149

115	Class reliefree.integrated_circuits.memory.MemorySRAM	151
115.1	Methods	151
116	Class reliefree.integrated_circuits.microprocessor.Microprocessor	153
116.1	Methods	153
117	Class reliefree.integrated_circuits.palpla.PALPLA	155
117.1	Methods	155
118	Class reliefree.integrated_circuits.vlsi.VLSI	157
118.1	Methods	157
119	Class reliefree.login.Login	160
119.1	Methods	160
119.2	Properties	163
119.3	Class Variables	164
120	Class reliefree.main.ReliaFree	165
120.1	Methods	165
121	Class reliefree.meters.meter.ElapsedTime	166
121.1	Methods	166
122	Class reliefree.meters.meter.Panel	168
122.1	Methods	168
123	Class reliefree.miscellaneous.crystal.Crystal	170
123.1	Methods	170
124	Class reliefree.miscellaneous.filter.Filter	172
124.1	Methods	172
125	Class reliefree.miscellaneous.fuse.Fuse	174
125.1	Methods	174
126	Class reliefree.miscellaneous.lamp.Lamp	176
126.1	Methods	176
127	Class reliefree.mysql.MySQLInterface	178
127.1	Methods	178
128	Class reliefree.notebook.WorkBookWindow	179
128.1	Methods	179
128.2	Properties	183
128.3	Class Variables	183
129	Class reliefree.partlist.PartsListWindow	184
129.1	Methods	184
129.2	Properties	189
129.3	Class Variables	189
130	Class reliefree.relays.relay.Mechanical	191
130.1	Methods	191

131	Class reliefree.relays.relay.SolidState	193
131.1	Methods	193
132	Class reliefree.requirement.Requirement	195
132.1	Methods	195
132.2	Class Variables	196
133	Class reliefree.resistors.fixed.Composition	197
133.1	Methods	197
134	Class reliefree.resistors.fixed.Film	198
134.1	Methods	198
135	Class reliefree.resistors.fixed.FilmNetwork	200
135.1	Methods	200
136	Class reliefree.resistors.fixed.FilmPower	202
136.1	Methods	202
137	Class reliefree.resistors.fixed.Wirewound	203
137.1	Methods	203
138	Class reliefree.resistors.fixed.WirewoundPower	204
138.1	Methods	204
139	Class reliefree.resistors.fixed.WirewoundPowerChassis	206
139.1	Methods	206
140	Class reliefree.resistors.resistor.Resistor	208
140.1	Methods	208
141	Class reliefree.resistors.thermistor.Thermistor	210
141.1	Methods	210
142	Class reliefree.resistors.variable.Composition	212
142.1	Methods	212
143	Class reliefree.resistors.variable.NonWirewound	214
143.1	Methods	214
144	Class reliefree.resistors.variable.VarFilm	216
144.1	Methods	216
145	Class reliefree.resistors.variable.VarWirewound	218
145.1	Methods	218
146	Class reliefree.resistors.variable.VarWirewoundPower	220
146.1	Methods	220
147	Class reliefree.resistors.variable.WirewoundPrecision	222
147.1	Methods	222
148	Class reliefree.resistors.variable.WirewoundSemiPrecision	224
148.1	Methods	224

149	Class reliafree.revision.Revision	226
149.1	Methods	226
150	Class reliafree.semiconductors.diode.HighFrequency	228
150.1	Methods	228
151	Class reliafree.semiconductors.diode.LowFrequency	231
151.1	Methods	231
152	Class reliafree.semiconductors.optoelectronics.Detector	234
152.1	Methods	234
153	Class reliafree.semiconductors.optoelectronics.Display	236
153.1	Methods	236
154	Class reliafree.semiconductors.optoelectronics.LaserDiode	238
154.1	Methods	238
155	Class reliafree.semiconductors.semiconductor.Semiconductor	241
155.1	Methods	241
156	Class reliafree.semiconductors.thyristor.Thyristor	243
156.1	Methods	243
157	Class reliafree.semiconductors.transistor.HFGaAsFET	245
157.1	Methods	245
158	Class reliafree.semiconductors.transistor.HFHPBipolar	248
158.1	Methods	248
159	Class reliafree.semiconductors.transistor.HFLNBipolar	251
159.1	Methods	251
160	Class reliafree.semiconductors.transistor.HFSiFET	253
160.1	Methods	253
161	Class reliafree.semiconductors.transistor.LFBipolar	255
161.1	Methods	255
162	Class reliafree.semiconductors.transistor.LFSiFET	258
162.1	Methods	258
163	Class reliafree.semiconductors.transistor.Unijunction	261
163.1	Methods	261
164	Class reliafree.switches.breaker.Breaker	263
164.1	Methods	263
165	Class reliafree.switches.rotary.Rotary	265
165.1	Methods	265
166	Class reliafree.switches.sensitive.Sensitive	267
166.1	Methods	267

167	Class <code>reliafree.switches.switch.Switch</code>	269
167.1	Methods	269
168	Class <code>reliafree.switches.thumbwheel.Thumbwheel</code>	271
168.1	Methods	271
169	Class <code>reliafree.switches.toggle.Toggle</code>	273
169.1	Methods	273
170	Class <code>reliafree.tree.TreeWindow</code>	275
170.1	Methods	275
170.2	Properties	279
170.3	Class Variables	280
171	Class <code>reliafree.utilities.Options</code>	281
171.1	Methods	281
172	Class <code>reliafree.validation.Validation</code>	282
172.1	Methods	282
172.2	Class Variables	283
173	Class <code>reliafree.widgets.Assistant</code>	284
173.1	Methods	284

1 Package reliafree

1.1 Modules

- **assembly**: This is the Class that is used to represent and hold information related to the hardware assemblies of the Program.
(Section 2, p. 4)
- **calculations**: This file contains various calculations used by the ReliaFree Project.
(Section 3, p. 5)
- **capacitors** (Section 4, p. 9)
 - **capacitor**: Capacitor is the meta class for all capacitor types.
(Section 5, p. 10)
 - **electrolytic** (Section 6, p. 11)
 - **fixed** (Section 7, p. 12)
 - **variable** (Section 8, p. 13)
- **component**: This is the Class that is used to represent and hold information related to the hardware components of the Program.
(Section 9, p. 14)
- **configuration**: This file contains configuration information and functions for ReliaFree.
(Section 10, p. 15)
- **connections** (Section 11, p. 18)
 - **connection** (Section 12, p. 19)
 - **multipin** (Section 13, p. 20)
 - **pcb** (Section 14, p. 21)
 - **socket** (Section 15, p. 22)
 - **solder** (Section 16, p. 23)
- **function**: This is the Class that is used to represent and hold information related to the functions of the Program.
(Section 17, p. 24)
- **hardware**: This is the Class that is used to represent and hold information related to the assemblies of the Program.
(Section 18, p. 25)
- **inductors** (Section 19, p. 26)
 - **coil** (Section 20, p. 27)
 - **inductor** (Section 21, p. 28)
 - **transformer** (Section 22, p. 29)
- **integrated_circuits** (Section 23, p. 30)
 - **gaas** (Section 24, p. 31)
 - **ic** (Section 25, p. 32)
 - **linear** (Section 26, p. 33)
 - **logic** (Section 27, p. 34)
 - **memory** (Section 28, p. 35)
 - **microprocessor** (Section 29, p. 36)
 - **palpla** (Section 30, p. 37)
 - **vlsi** (Section 31, p. 38)
- **login** (Section 32, p. 39)
- **main**: This is the main program for The ReliaFree application.
(Section 33, p. 40)
- **meters** (Section 34, p. 41)
 - **meter** (Section 35, p. 42)
- **miscellaneous** (Section 36, p. 43)

- **crystal** (Section 37, p. 44)
- **filter** (Section 38, p. 45)
- **fuse** (Section 39, p. 46)
- **lamp** (Section 40, p. 47)
- **mysql** (Section 41, p. 48)
- **notebook**: This is the Workbook window for ReliaFree.
(Section 42, p. 49)
- **partlist**: This is the Parts List window for ReliaFree.
(Section 43, p. 50)
- **relays** (Section 44, p. 51)
 - **relay** (Section 45, p. 52)
- **requirement**: This is the Class that is used to represent and hold information related to the requirements of the Program.
(Section 46, p. 53)
- **resistors** (Section 47, p. 54)
 - **fixed** (Section 48, p. 55)
 - **resistor** (Section 49, p. 56)
 - **thermistor** (Section 50, p. 57)
 - **variable** (Section 51, p. 58)
- **revision**: This is the Class that is used to represent and hold information related to the revision of the Program.
(Section 52, p. 59)
- **semiconductors** (Section 53, p. 60)
 - **diode** (Section 54, p. 61)
 - **optoelectronics** (Section 55, p. 62)
 - **semiconductor** (Section 56, p. 63)
 - **thyristor** (Section 57, p. 64)
 - **transistor** (Section 58, p. 65)
- **switches** (Section 59, p. 66)
 - **breaker** (Section 60, p. 67)
 - **rotary** (Section 61, p. 68)
 - **sensitive** (Section 62, p. 69)
 - **switch** (Section 63, p. 70)
 - **thumbwheel** (Section 64, p. 71)
 - **toggle** (Section 65, p. 72)
- **tree**: This is the System Tree window for ReliaFree.
(Section 66, p. 73)
- **utilities**: utilities contains utility functions for interacting with the ReliaFree application.
(Section 67, p. 74)
- **validation**: This is the Class that is used to represent and hold information related to verification and validation tasks of the Program.
(Section 68, p. 78)
- **widgets**: widgets contains functions for creating, populating, destroying, and interacting with pyGTK widgets.
(Section 69, p. 79)

1.2 Variables

Name	Description
<code>__package__</code>	Value: 'reliafree'

2 Module *reliafree.assembly*

This is the Class that is used to represent and hold information related to the hardware assemblies of the Program.

2.1 Classes

- **Assembly:** The Assembly class is used to represent a piece of hardware in a system being analyzed. (*Section 70, p. 83*)

2.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree'</code>

3 Module *reliafree.calculations*

This file contains various calculations used by the ReliaFree Project.

3.1 Functions

calculate_project(*button, application, index*)

Calculates the hazard rate for the project.

Keyword Arguments:

button -- the gtk.Toolbutton that called this function.
application -- the ReliaFree application object.
index -- an index indicating what to calculate:
0 - everything below.
1 - just the selected Revision.
2 - roll up all the Functions.
3 - roll up all the System hardware.

calculate(*treemodel, row, application*)

Iteratively calculates active hazard rate, dormant hazard rate, software hazard rate, predicted hazard rate, mission MTBF, limiting MTBF, mission reliability, limiting reliability, total cost, cost per failure, cost per operating hour, and total power dissipation.

Keyword Arguments: *treemodel* – the gtk.Treemodel containing the information to edit.
row – the row in the gtk.Treemodel to read/write values. *application* – the ReliaFree application object.

calculate_part(*dictionary*)

Calculates the hazard rate for a component.

Keyword Arguments:

dictionary -- a dictionary containing the components h(t) prediction
model and the input variables.

overstressed(*component*)

Determines whether the component is overstressed based on derating rules.

Keyword arguments:

component -- a Component Object to analyze for overstress.

Currently only default derating rules from Reliability Toolkit: Commercial Practices Edition, Section 6.3.3 are used.

Component Type	Derating Parameter	Environment Severe	Benign	
Capacitor	DC Voltage	60%	90%	
	Temp from Max Limit	10C	N/A	
Circuit Bkr	Current	80%	80%	
Connectors	Voltage	70%	90%	
	Current	70%	90%	
	Insert Temp from Max Limit	25C	N/A	
Diodes	Power Dissipation	70%	90%	
	Max Junction Temperature	125C	N/A	
Fiber Optics	Bend Radius	200%	200%	
	Cable Tension	50%	50%	
Fuses	Current (Maximum Capability)	50%	70%	
Inductors	Operating Current	60%	90%	
	Dielectric Voltage	50%	90%	
	Temp from Hot Spot	15C		
Lamps	Voltage	94%	94%	
Memories	Supply Voltage	+/-5%	+/-5%	
	Output Current	80%	90%	
	Max Junction Temp	125C	N/A	
Micro-circuits	Supply Voltage	+/-5%	+/-5%	
	Fan Out	80%	80%	
	Max Junction Temp	125C	N/A	
GaAs Micro-circuits	Max Junction Temp	135C	N/A	
Micro-processors	Supply Voltage	+/-5%	+/-5%	
	Fan Out	80%	80%	
	Max Junction Temp	125C	N/A	
Photo-diode	Reverse Voltage	17 70%	70%	
	Max Junction Temp	125C	N/A	
Photo-transistor	Max Junction Temp	125C	N/A	

similar_hazard_rate(*component, new_qual, new_environ, new_temp*)

Calculates the estimated hazard rate of a similar item based on differences in quality level, environment, and operating temperature.

All conversion factors come from Reliability Toolkit: Commercial Practices Edition, Section 6.3.3.

Keyword Arguments:

component -- the Component Object to perform calculations on.
new_qual -- the quality level of the new item.
new_environ -- the environment of the new item.
new_temp -- the operating temperature of the new item.

Returns:

hr_similar -- the estimated hazard rate for the new item.

To convert from quality A to quality B use conversion factors from Table 6.3.3-1 (reproduced below).

	Space	Full Military	Ruggedized	Commercial
Space	1.0	0.8	0.5	0.2
Full Military	1.3	1.0	0.6	0.3
Ruggedized	2.0	1.7	1.0	0.4
Commercial	5.0	3.3	2.5	1.0

To convert from environment A to environment B use the conversion factors from Table 6.3.3-2 (reproduced below).

	GB	GM	NS	AIC	ARW	SF
GB	1.0	0.2	0.3	0.3	0.1	1.1
GM	5.0	1.0	1.4	1.4	0.5	5.0
NS	3.3	0.7	1.0	1.0	0.3	3.3
AIC	3.3	0.7	1.0	1.0	0.3	3.3
ARW	10.0	2.0	3.3	3.3	1.0	10.0
SF	0.9	0.2	0.3	0.3	0.1	1.0

To convert from temperature A to temperature B (both in Celcius) use conversion factors from Table 6.3.3-3 (reproduced below).

	10	20	30	40	50	60	70
10	1.0	0.9	0.8	0.8	0.7	0.5	0.4
20	1.1	1.0	0.9	0.8	0.7	0.6	0.5

dormant_hazard_rate(*category, subcategory, active_env, dormant_env, lambdaa*)

Calculates the dormant hazard rate based on active environment, dormant environment, and component category.

Keyword Arguments:

category -- the component category index.
subcategory -- the component subcategory index.
active_env -- the active environment index.
dormant_env -- the dormant environment index.
lambdaa -- the active hazard rate of the component.

All conversion factors come from Reliability Toolkit: Commercial Practices Edition, Section 6.3.4, Table 6.3.4-1 (reproduced below).

	Ground Active to Ground Passive	Airborne Active to Airborne Passive	Airborne Active to Ground Passive	Naval Active to Naval Passive	Naval Active to Ground Passive	Space Active to Space Passive	Space Active to Ground Passive
Integrated Circuits	0.08	0.06	0.04	0.06	0.05	0.10	0.30
Diodes	0.04	0.05	0.01	0.04	0.03	0.20	0.80
Transistors	0.05	0.06	0.02	0.05	0.03	0.20	1.00
Capacitors	0.10	0.10	0.03	0.10	0.04	0.20	0.40
Resistors	0.20	0.06	0.03	0.10	0.06	0.50	1.00
Switches	0.40	0.20	0.10	0.40	0.20	0.80	1.00
Relays	0.20	0.20	0.04	0.30	0.08	0.40	0.90
Connectors	0.005	0.005	0.003	0.008	0.003	0.02	0.03
Circuit Boards	0.04	0.02	0.01	0.03	0.01	0.08	0.20
Transformers	0.20	0.20	0.20	0.30	0.30	0.50	1.00

3.2 Variables

Name	Description
<code>--package--</code>	Value: None

4 Package `reliafree.capacitors`

4.1 Modules

- **capacitor**: Capacitor is the meta class for all capacitor types.
(Section 5, p. 10)
- **electrolytic** (Section 6, p. 11)
- **fixed** (Section 7, p. 12)
- **variable** (Section 8, p. 13)

4.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree.capacitors'</code>

5 Module `reliafree.capacitors.capacitor`

Capacitor is the meta class for all capacitor types.

5.1 Classes

- **Capacitor:** Capacitor meta class.
(*Section 71, p. 85*)

5.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree.capacitors'</code>

6 Module *reliafree.capacitors.electrolytic*

6.1 Classes

- **TantalumSolid**: Fixed Solid Tantalum Electrolytic Capacitor Component Class.
(Section 75, p. 91)
- **TantalumNonSolid**: Fixed Non-Solid Tantalum Electrolytic Capacitor Component Class.
(Section 74, p. 89)
- **Aluminum**: Fixed Wet Aluminum Electrolytic Capacitor Component Class.
(Section 72, p. 87)
- **AluminumDry**: Fixed Dry Aluminum Electrolytic Capacitor Component Class.
(Section 73, p. 88)

6.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.capacitors'</code>

7 Module *reliafree.capacitors.fixed*

7.1 Classes

- **PaperBypass**: Fixed Paper Bypass Capacitor Component Class.
(Section 82, p. 99)
- **PaperFeedthrough**: Fixed Paper Feedthrough Capacitor Component Class.
(Section 83, p. 100)
- **PlasticFilm**: Fixed Paper and Plastic Film Capacitor Component Class.
(Section 85, p. 102)
- **MetallizedPaper**: Fixed Metallized Paper, Paper-Plastic, and Plastic Capacitor Component Class.
(Section 79, p. 96)
- **Plastic**: Fixed Plastic and Metallized Plastic Capacitor Component Class.
(Section 84, p. 101)
- **SuperMetallizedPlastic**: Fixed Super-Metallized Plastic Capacitor Component Class.
(Section 86, p. 103)
- **Mica**: Fixed Mica Capacitor Component Class.
(Section 80, p. 97)
- **MicaButton**: Fixed Mica Button Capacitor Component Class.
(Section 81, p. 98)
- **Glass**: Fixed Glass Capacitor Component Class.
(Section 78, p. 95)
- **CeramicGeneral**: Fixed General Purpose Ceramic Capacitor Component Class.
(Section 77, p. 94)
- **CeramicChip**: Fixed Temperature Compensating and Chip Ceramic Capacitor Component Class.
(Section 76, p. 93)

7.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.capacitors'</code>

8 Module *reliafree.capacitors.variable*

8.1 Classes

- **Ceramic:** Variable Ceramic Capacitor Component Class.
(Section 88, p. 105)
- **Piston:** Variable Piston Type Capacitor Component Class.
(Section 90, p. 108)
- **AirTrimmer:** Variable Air Trimmer Capacitor Component Class.
(Section 87, p. 104)
- **Gas:** Variable and Fixed Gas or Vacuum Capacitor Component Class.
(Section 89, p. 106)

8.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.capacitors'</code>

9 Module **reliafree.component**

This is the Class that is used to represent and hold information related to the hardware components of the Program.

9.1 Classes

- **Component:** The Components class is used to represent a component in a system being analyzed. (*Section 91, p. 109*)

9.2 Variables

Name	Description
<code>--package--</code>	Value: 'reliafree'

10 Module *reliafree.configuration*

This file contains configuration information and functions for ReliaFree.

10.1 Classes

- **ReliaFreeConf**: The ReliaFree configuration class.
(Section 92, p. 111)

10.2 Variables

Name	Description
ICON_DIR	Path to the directory containing icon files used by ReliaFree. Defaults to /usr/share/pixmaps/reliafree/. Value: ''
DATA_DIR	Path to the directory containing data files used by ReliaFree. Defaults to /usr/share/reliafree/. Value: ''
CONF_DIR	Path to the directory containing configuration files used by ReliaFree. Defaults to \$HOME/.config/reliafree/ on POSIX systems. Value: ''
RELIAFREE_FORMAT_FILE	Global list containing the path to the format files to use for various widgets. Position 00: Revision Tree formatting. Position 01: Function Tree formatting. Position 02: Requirements Tree formatting. Position 03: Hardware Tree formatting. Position 04: Validation Tree formatting. Position 05: Reliability Growth Tree formatting. Position 06: Field Incidents Tree formatting. Position 07: Parts List formatting. Position 08: Similar Item Analysis formatting. Position 09: FMECA worksheet formatting. Position 10: Failure Modes List formatting. Position 11: Failure Effects List formatting. Position 12: Failure Mechanisms List formatting. Value: []

continued on next page

Name	Description
RELIAFREE.COLORS	<p>Global list containing the colors to use for various widgets.</p> <p>Position 00: Revision row background color Position 01: Revision row foreground color Position 02: Function row background color Position 03: Function row foreground color Position 04: Requirement row background color Position 05: Requirement row foreground color Position 06: Assembly row background color Position 07: Assembly row foreground color Position 08: Validation row background color Position 09: Validation row foreground color Position 10: Reliability Growth row background color Position 11: Reliability Growth row foreground color Position 12: Field Incident row background color Position 13: Field Incident row foreground color Position 14: Part List row background color Position 15: Part List row foreground color Position 16: Overstressed Part row background color Position 17: Overstressed Part row foreground color Position 18: Tagged Part row background color Position 19: Tagged Part row foreground color Position 20: Part with no failure rate model row foreground color</p> <p>Value: []</p>
RELIAFREE.PREFIX	<p>Global variableLIST to house information about the prefix and next index to use when adding new revisions, functions, assemblies, parts, FMECA items, FMECA modes, FMECA effects, and FMECA causes.</p> <p>Position 0: Revision prefix Position 1: Next revision index Position 2: Function prefix Position 3: Next function index Position 4: Assembly prefix Position 5: Next assembly index Position 6: Part prefix Position 7: Next part index Position 8: FMECA item prefix Position 9: Next FMECA item index Position 10: FMECA mode prefix Position 11: Next FMECA mode index Position 12: FMECA effect prefix Position 13: NExt FMECA effect index Position 14: FMECA cause prefix Position 15: Next FMECA cause index</p> <p>Value: []</p>
RELIAFREE.MODULES	<p>Global list to house information about the active modules. 1 = active, 0 = inactive.</p> <p>Position 00: Revision module status Position 01: Function module status Position 02: Requirements module status Position 03: Validation module status Position 04: Reliability Growth module status Position 05: Field Incidents module status Position 06: ? module status Position 07: ? module status</p> <p>Value: [1, 1, 1, 1, 0, 0, 0, 0]</p>

continued on next page

Name	Description
RELIAFREE.COM_INFO	Global list for MySQL or SQLite3 connection information to the common database. Position 00: Host name Position 01: Host port Position 02: Database name Position 03: User name Position 04: User password Value: []
RELIAFREE.PROG_INFO	Global list for MySQL or SQLite3 connection information to the Program database. Position 00: Host name Position 01: Host port Position 02: Database name Position 03: User name Position 04: User password Value: []
BACKEND	Value: ''
LOCALE	Value: 'en_US'
FRMULT	Value: 1.0
PLACES	Value: 6
--package--	Value: 'reliafree'

11 Package `reliafree.connections`

11.1 Modules

- **connection** (*Section 12, p. 19*)
- **multipin** (*Section 13, p. 20*)
- **pcb** (*Section 14, p. 21*)
- **socket** (*Section 15, p. 22*)
- **solder** (*Section 16, p. 23*)

11.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree.connections'</code>

12 Module `reliafree.connections.connection`

12.1 Classes

- **Connection:** Connections meta class.
(Section 93, p. 112)

12.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.connections'</code>

13 Module *reliafree.connections.multipin*

13.1 Classes

- **Multipin:** Multipin Connection Component Class.
(Section 94, p. 114)

13.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.connections'</code>

14 Module *reliafree.connections.pcb*

14.1 Classes

- **PCBEdge**: PCB Edge Connection Component Class.
(Section 95, p. 116)

14.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.connections'</code>

15 Module *reliafree.connections.socket*

15.1 Classes

- **ICSocket**: IC Socket Connection Component Class.
(Section 96, p. 118)

15.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.connections'</code>

16 Module `reliafree.connections.solder`

16.1 Classes

- **PTH**: Plated Through Hole Connection Component Class.
(Section 97, p. 120)
- **Solder**: Non-Plated Through Hole Connection Component Class.
(Section 98, p. 122)

16.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree.connections'</code>

17 Module *reliafree.function*

This is the Class that is used to represent and hold information related to the functions of the Program.

17.1 Classes

- **Function:** The Function class is used to represent a function in a system being analyzed.
(Section 99, p. 124)

17.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree'</code>

18 Module *reliafree.hardware*

This is the Class that is used to represent and hold information related to the assemblies of the Program.

18.1 Classes

- **Hardware:** The Hardware class is simply the treeview that holds and displays the system tree in the ReliaFree Treebook.
(Section 100, p. 126)

18.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree'</code>

19 Package *reliafree.inductors*

19.1 Modules

- **coil** (*Section 20, p. 27*)
- **inductor** (*Section 21, p. 28*)
- **transformer** (*Section 22, p. 29*)

19.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.inductors'</code>

20 Module *reliafree.inductors.coil*

20.1 Classes

- **Coil:** Coil Component Class.
(Section 101, p. 127)

20.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.inductors'</code>

21 Module `reliafree.inductors.inductor`

21.1 Classes

- **Inductor:** Inductive Devices meta class.
(Section 102, p. 129)

21.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.inductors'</code>

22 Module `reliafree.inductors.transformer`

22.1 Classes

- **Audio**: Audio Transformer Component Class.
(Section 103, p. 131)
- **Power**: High Power Pulse and Power Transformer Component Class.
(Section 105, p. 133)
- **LowPowerPulse**: Low Power Pulse Transformer Component Class.
(Section 104, p. 132)
- **RF**: Radio Frequency Transformer Component Class.
(Section 106, p. 134)

22.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.inductors'</code>

23 Package `reliafree.integrated_circuits`

23.1 Modules

- **gaas** (*Section 24, p. 31*)
- **ic** (*Section 25, p. 32*)
- **linear** (*Section 26, p. 33*)
- **logic** (*Section 27, p. 34*)
- **memory** (*Section 28, p. 35*)
- **microprocessor** (*Section 29, p. 36*)
- **palpla** (*Section 30, p. 37*)
- **vlsi** (*Section 31, p. 38*)

23.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.integrated_circuits'</code>

24 Module `reliafree.integrated_circuits.gaas`

24.1 Classes

- **GaAsDigital**: Digital GaAs Integrated Circuit Component Class.
(Section 107, p. 135)
- **GaAsMMIC**: Microwave Monolithic GaAs Integrated Circuit Component Class.
(Section 108, p. 137)

24.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree.integrated_circuits'</code>

25 Module `reliafree.integrated_circuits.ic`

25.1 Classes

- **IntegratedCircuit:** Integrated Circuit meta class.
(Section 109, p. 139)

25.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.integrated_circuits'</code>

26 Module *reliafree.integrated_circuits.linear*

26.1 Classes

- **Linear:** Linear integrated circuit class.
(Section 110, p. 141)

26.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.integrated_circuits'</code>

27 Module `reliafree.integrated_circuits.logic`

27.1 Classes

- **Logic:** Logic (digital) integrated circuit class.
(Section 111, p. 143)

27.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.integrated_circuits'</code>

28 Module `reliafree.integrated_circuits.memory`

28.1 Classes

- **MemoryDRAM**: DRAM memory class.
(Section 112, p. 145)
- **MemoryEEPROM**: EEPROM memory class.
(Section 113, p. 147)
- **MemoryROM**: ROM Memory class.
(Section 114, p. 149)
- **MemorySRAM**: SRAM memory class.
(Section 115, p. 151)

28.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.integrated_circuits'</code>

29 Module `reliafree.integrated_circuits.microprocessor`

29.1 Classes

- **Microprocessor**: Microprocessor class.
(Section 116, p. 153)

29.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.integrated_circuits'</code>

30 Module *reliafree.integrated_circuits.palpla*

30.1 Classes

- **PALPLA**: PAL/PLA device class.
(Section 117, p. 155)

30.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.integrated_circuits'</code>

31 Module *reliafree.integrated_circuits.vlsi*

31.1 Classes

- **VLSI**: VHSIC/VHSIC-like and VLSI CMOS integrated circuit class.
(Section 118, p. 157)

31.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.integrated_circuits'</code>

32 Module *reliafree.login*

32.1 Classes

- **Login:** The Login class is used to create a window that allows the user to enter login information for the MySQL server to use.
(Section 119, p. 160)

32.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree'</code>

33 Module *reliafree.main*

This is the main program for The ReliaFree application.

33.1 Classes

- **ReliaFree**: This is the ReliaFree class.
(Section 120, p. 165)

33.2 Functions

main()
This is the main function for the ReliaFree application.

33.3 Variables

Name	Description
<code>--package--</code>	Value: 'reliafree'

34 Package *reliafree.meters*

34.1 Modules

- **meter** (*Section 35, p. 42*)

34.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.meters'</code>

35 Module *reliafree.meters.meter*

35.1 Classes

- **ElapsedTime:** Elapsed Time Meter Component Class.
(Section 121, p. 166)
- **Panel:** Panel Meter Component Class.
(Section 122, p. 168)

35.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree.meters'</code>

36 Package *reliafree.miscellaneous*

36.1 Modules

- **crystal** (*Section 37, p. 44*)
- **filter** (*Section 38, p. 45*)
- **fuse** (*Section 39, p. 46*)
- **lamp** (*Section 40, p. 47*)

36.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree.miscellaneous'</code>

37 Module *reliafree.miscellaneous.crystal*

37.1 Classes

- **Crystal**: Crystal meta class.
(Section 123, p. 170)

37.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.miscellaneous'</code>

38 Module *reliafree.miscellaneous.filter*

38.1 Classes

- **Filter:** Filter Component Class.
(Section 124, p. 172)

38.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.miscellaneous'</code>

39 Module *reliafree.miscellaneous.fuse*

39.1 Classes

- **Fuse:** Fuse Component Class.
(Section 125, p. 174)

39.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.miscellaneous'</code>

40 Module *reliafree.miscellaneous.lamp*

40.1 Classes

- **Lamp**: Lamp Component Class.
(Section 126, p. 176)

40.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.miscellaneous'</code>

41 Module `reliafree.mysql`

41.1 Classes

- `MySQLInterface` (*Section 127, p. 178*)

41.2 Variables

Name	Description
<code>has_mysqldb</code>	Value: <code>True</code>
<code>__package__</code>	Value: <code>'reliafree'</code>

42 Module *reliafree.notebook*

This is the Workbook window for ReliaFree.

42.1 Classes

- **WorkBookWindow:** The WorkBookWindow class is the NoteBook window used to display information about selected Revisions, Requirements, Functions, Hardware, Verification and Validation (V&V) Tasks, Reliability Growth Testing incidents, and field incidents.
(Section 128, p. 179)

42.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree'</code>

43 Module *reliafree.partlist*

This is the Parts List window for ReliaFree.

43.1 Classes

- **PartsListWindow:** This class is the windows containing the parts associated with the selected Revision, Function, or Assembly in the upper window.
(Section 129, p. 184)

43.2 Variables

Name	Description
<code>--package--</code>	Value: 'reliafree'

44 Package `reliafree.relays`

44.1 Modules

- `relay` (Section 45, p. 52)

44.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.relays'</code>

45 Module *reliafree.relays.relay*

45.1 Classes

- **Mechanical**: Mechanical Relay Component Class.
(Section 130, p. 191)
- **SolidState**: Solid State Relay Component Class.
(Section 131, p. 193)

45.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree.relays'</code>

46 Module *reliafree.requirement*

This is the Class that is used to represent and hold information related to the requirements of the Program.

46.1 Classes

- **Requirement:** The Requirement class is used to represent the requirements in a system being analyzed.
(Section 132, p. 195)

46.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree'</code>

47 Package *reliafree.resistors*

47.1 Modules

- **fixed** (*Section 48, p. 55*)
- **resistor** (*Section 49, p. 56*)
- **thermistor** (*Section 50, p. 57*)
- **variable** (*Section 51, p. 58*)

47.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.resistors'</code>

48 Module `reliafree.resistors.fixed`

48.1 Classes

- **Composition:** Fixed Value Carbon Composition Resistor Component Class.
(Section 133, p. 197)
- **Film:** Fixed Value Film Resistor Component Class.
(Section 134, p. 198)
- **FilmNetwork:** Fixed Value Film Network Resistor Component Class.
(Section 135, p. 200)
- **FilmPower:** Fixed Value Film Power Resistor Component Class.
(Section 136, p. 202)
- **Wirewound:** Fixed Value Wirewound Resistor Component Class.
(Section 137, p. 203)
- **WirewoundPower:** Fixed Value Wirewound Power Resistor Component Class.
(Section 138, p. 204)
- **WirewoundPowerChassis:** Fixed Value Wirewound Chassis-Mounted Power Resistor Component Class.
(Section 139, p. 206)

48.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree.resistors'</code>

49 Module `reliafree.resistors.resistor`

49.1 Classes

- **Resistor**: Resistor meta class.
(Section 140, p. 208)

49.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.resistors'</code>

50 Module `reliafree.resistors.thermistor`

50.1 Classes

- **Thermistor:** Thermistor Component Class.
(Section 141, p. 210)

50.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.resistors'</code>

51 Module `reliafree.resistors.variable`

51.1 Classes

- **VarWirewound**: Variable Value Wirewound Resistor Component Class.
(Section 145, p. 218)
- **VarWirewoundPower**: Variable Value Wirewound Power Resistor Component Class.
(Section 146, p. 220)
- **WirewoundPrecision**: Variable Value Precision Wirewound Resistor Component Class.
(Section 147, p. 222)
- **WirewoundSemiPrecision**: Variable Value Semiprecision Wirewound Resistor Component Class.
(Section 148, p. 224)
- **NonWirewound**: Variable Value Nonwirewound Resistor Component Class.
(Section 143, p. 214)
- **Composition**: Variable Value Carbon Composition Resistor Component Class.
(Section 142, p. 212)
- **VarFilm**: Variable Value Film Resistor Component Class.
(Section 144, p. 216)

51.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree.resistors'</code>

52 Module *reliafree.revision*

This is the Class that is used to represent and hold information related to the revision of the Program.

52.1 Classes

- **Revision:** This is the REVISION Class for The ReliaFree Project.
(Section 149, p. 226)

52.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree'</code>

53 Package `reliafree.semiconductors`

53.1 Modules

- **diode** (*Section 54, p. 61*)
- **optoelectronics** (*Section 55, p. 62*)
- **semiconductor** (*Section 56, p. 63*)
- **thyristor** (*Section 57, p. 64*)
- **transistor** (*Section 58, p. 65*)

53.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree.semiconductors'</code>

54 Module *reliafree.semiconductors.diode*

54.1 Classes

- **LowFrequency**: Low Frequency Diode Component Class.
(Section 151, p. 231)
- **HighFrequency**: Low Frequency Diode Component Class.
(Section 150, p. 228)

54.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree.semiconductors'</code>

55 Module `reliafree.semiconductors.optoelectronics`

55.1 Classes

- **Detector**: Photodetector Component Class.
(Section 152, p. 234)
- **Display**: Alphanumeric Display Component Class.
(Section 153, p. 236)
- **LaserDiode**: Laser Diode Component Class.
(Section 154, p. 238)

55.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree.semiconductors'</code>

56 Module *reliafree.semiconductors.semiconductor*

56.1 Classes

- **Semiconductor**: Discrete Semiconductor meta class.
(Section 155, p. 241)

56.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.semiconductors'</code>

57 Module `reliafree.semiconductors.thyristor`

57.1 Classes

- **Thyristor:** Thyristor Component Class.
(Section 156, p. 243)

57.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.semiconductors'</code>

58 Module `reliafree.semiconductors.transistor`

58.1 Classes

- **LFBipolar**: Low Frequency Bipolar Transistor Component Class.
(Section 161, p. 255)
- **LFSiFET**: Low Frequency Silicon Field Effect Transistor (FET) Component Class.
(Section 162, p. 258)
- **Unijunction**: Unijunction Transistor Component Class.
(Section 163, p. 261)
- **HFLNBipolar**: High Frequency, Low Noise Bipolar Transistor Component Class.
(Section 159, p. 251)
- **HFHPBipolar**: High Frequency, High Power Bipolar Transistor Component Class.
(Section 158, p. 248)
- **HFGaAsFET**: High Frequency Gallium Arsenide (GaAs) Field Effect Transistor (FET) Component Class.
(Section 157, p. 245)
- **HFSiFET**: High Frequency Silicon Field Effect Transistor (FET) Component Class.
(Section 160, p. 253)

58.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree.semiconductors'</code>

59 Package `reliafree.switches`

59.1 Modules

- **breaker** (*Section 60, p. 67*)
- **rotary** (*Section 61, p. 68*)
- **sensitive** (*Section 62, p. 69*)
- **switch** (*Section 63, p. 70*)
- **thumbwheel** (*Section 64, p. 71*)
- **toggle** (*Section 65, p. 72*)

59.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree.switches'</code>

60 Module *reliafree.switches.breaker*

60.1 Classes

- **Breaker:** Circuit Breaker Switch Component Class.
(Section 164, p. 263)

60.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.switches'</code>

61 Module *reliafree.switches.rotary*

61.1 Classes

- **Rotary**: Rotary Switch Component Class.
(Section 165, p. 265)

61.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.switches'</code>

62 Module *reliafree.switches.sensitive*

62.1 Classes

- **Sensitive:** Basic Sensitive Switch Component Class.
(Section 166, p. 267)

62.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.switches'</code>

63 Module *reliafree.switches.switch*

63.1 Classes

- **Switch:** Switches meta class.
(Section 167, p. 269)

63.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.switches'</code>

64 Module *reliafree.switches.thumbwheel*

64.1 Classes

- **Thumbwheel**: Thumbwheel Switch Component Class.
(Section 168, p. 271)

64.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.switches'</code>

65 Module `reliafree.switches.toggle`

65.1 Classes

- **Toggle:** Toggle or Pushbutton Switch Component Class.
(Section 169, p. 273)

65.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree.switches'</code>

66 Module *reliafree.tree*

This is the System Tree window for ReliaFree.

66.1 Classes

- **TreeWindow**: This class is the window containing the various gtk.Treeviews.
(Section 170, p. 275)

66.2 Variables

Name	Description
<code>__package__</code>	Value: <code>'reliafree'</code>

67 Module *reliafree.utilities*

utilities contains utility functions for interacting with the ReliaFree application. Import this module as `_util` in other modules that need to interact with the ReliaFree application.

67.1 Classes

- **Options** (*Section 171, p. 281*)

67.2 Functions

create_logger(*log_name*, *log_level*, *log_file*, *to_tty*=False)

This function creates a logger instance.

Keyword Arguments:

log_name -- the name of the log used in the application.
log_level -- the level of messages to log.
log_file -- the full path of the log file for this logger instance to write to.
to_tty -- boolean indicating whether this logger will also dump messages to the terminal.

parse_config(*configfile*)

This function parses the XML configuration file passed as a parameter.

Keyword Arguments: *configfile* – the configuration file that needs to be parsed.

split_string(*string*)

Splits a colon-delimited string into its constituent parts.

Keyword Arguments:

string -- the colon delimited string that needs to be split into a list.

dir_exists(*dir*)

Checks for the existence of a directory.

Keyword Arguments: *dir* – a string representing the directory path to check for.

file_exists(*file*)

Checks if a file exists.

Keyword Arguments: *file* – a string representing the filepath to check for.

create_project(*widget*, *app*)

Creates a new ReliaFree Project.

Keyword Arguments: *widget* – the widget that called this function. *app* – the ReliaFree application.

open_project(*widget*, *app*)

Shows the ReliaFree databases available on the selected server and allows the user to select the one he/she wishes to use.

Keyword Arguments:
widget -- the widget that called this function.
app -- the ReliaFree application.

save_project(*widget*, *_app*)

Saves the ReliaFree information to the project's MySQL database.

Keyword Arguments: *widget* – the widget that is calling this function. *_app* – the ReliaFree application.

delete_project(*widget*, *_app*)

Deletes an existing ReliaFree Project.

Keyword Arguments: *widget* – the widget that called this function. *_app* – the ReliaFree application.

import_project(*widget*, *app*)

Iteratively creates composite reference designators.

Keyword Arguments: *widget* – the GTK widget that called the function. *app* – the ReliaFree application object.

add_items(*_class_*)

Adds one or more items to a treeview hierarchy.

Keyword Arguments:
class – the type of item to add (i.e., function, assembly, component).

cut_copy_paste(*widget*, *action*)

Cuts, copies, and pastes.

Keyword Arguments: *widget* – the widget that called this function. *action* – whether to cut (0), copy (1), or paste (2).

paste(*clipboard, contents, user_data*)

select_all(*widget*)

Selects all the rows in a treeview.

Keyword Arguments: *widget* – the widget that called this function.

find(*widget, action*)

Finds records in the open project.

Keyword Arguments:

widget -- the widget that called this function.

action -- whether to find (0), find next (1), find previous (2),
or replace(3).

find_all_in_list(*L, value, start=0*)

undo()

redo()

create_comp_ref_des(*widget, app*)

Iterively creates composite reference designators.

Keyword Arguments: *widget* – the GTK widget that called the function. *app* – the ReliaFree application object.

build_comp_ref_des(*treemodel, row*)

Creates the composite reference designator for the currently selected row in the System gtk.Treemodel.

Keyword Arguments: *treemodel* – the HARDWARE gtk.Treemodel. *row* – the currently selected row in the HARDWARE gtk.Treemodel.

set_part_model(*category, subcategory*)

This functions sets the COMPONENT part model based on the category and subcategory.

calculate_max_text_width(*text, font*)

options(*widget, _app*)

67.3 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree'</code>

68 Module *reliafree.validation*

This is the Class that is used to represent and hold information related to verification and validation tasks of the Program.

68.1 Classes

- **Validation:** The Validation class is used to represent the validation tasks in a system being analyzed. (*Section 172, p. 282*)

68.2 Variables

Name	Description
<code>--package--</code>	Value: <code>'reliafree'</code>

69 Module *reliafree.widgets*

widgets contains functions for creating, populating, destroying, and interacting with pyGTK widgets. Import this module as *_widg* in other modules that create, populate, destroy, or interact with pyGTK widgets in the ReliaFree application.

69.1 Classes

- **Assistant** (*Section 173, p. 284*)

69.2 Functions

```
make.button(_height_=40, _width_=150, _label_=None, _image_='default')
```

Utility function to create Button widgets.

Keyword Arguments:

width -- the width of the Button widget.

label -- the text to display with the Button widget.
Default is None.

image -- the file image to display on the Button.

```
make.check.button(_label_=None)
```

Utility function to create CheckButton widgets.

Keyword Arguments:

label -- the text to display with the CheckButton widget.
Default is None.

```
make.combo(_width_=200, _height_=30, simple=True)
```

Utility function to create ComboBox widgets.

Keyword Arguments:

width -- width of the ComboBox widget. Default is 200.

height -- height of the ComboBox widget. Default is 30.

simple -- boolean indicating whether to create a simple text ComboBox.
Defaults to True.

```
load_combo(combo, list, simple=True, index=0)
```

Utility function to load gtk.ComboBox widgets.

Keyword Arguments:

combo -- the gtk.ComboBox to load.
list -- the information to load into the gtk.ComboBox.
simple -- indicates whether the load is simple (single column) or complex (multiple columns).
index -- the index in the list to display. Only used when doing a simple load.

```
make_dialog(_title_, _parent_=None, _flags_=<flags GTK_DIALOG_MODAL |  

GTK_DIALOG_DESTROY_WITH_PARENT ..., _buttons_=('gtk-ok', <enum  

GTK_RESPONSE_ACCEPT of type GtkResponseType...)
```

Utility function to create Dialog widgets.

Keyword Arguments:

title -- the title text for the Dialog.
parent -- the parent window to associate the Dialog with. Defaults to None.
flags -- the flags that control the operation of the Dialog. Defaults to gtk.DIALOG_MODAL and gtk.DIALOG_DESTROY_WITH_PARENT.
buttons -- the buttons to display and their response values. Defaults to gtk.STOCK_OK <==> gtk.RESPONSE_ACCEPT and gtk.STOCK_CANCEL <==> gtk.RESPONSE_REJECT.

```
make_entry(_width_=200, _height_=25, editable=True, bold=False)
```

Utility function to create Entry widgets.

Keyword Arguments:

width -- width of the Entry widget. Default is 200.
height -- height of the Entry widget. Default is 25.
editable -- boolean indicating whether Entry should be editable. Defaults to True.
bold -- boolean indicating whether text should be bold. Defaults to False.

make_label(*text*, *width*=190, *height*=25, *bold*=True)

Utility function to create Label widgets.

Keyword Arguments:

text -- the text to display in the Label widget.
width -- width of the Label widget. Default is 190.
height -- height of the Label widget. Default is 25.
bold -- boolean indicating whether text should be bold. Defaults to True.

make_text_view(*buffer*=None, *width*=200, *height*=100)

Utility function to create TextView widgets.

Keyword Arguments:

buffer -- the TextBuffer to associate with the TextView. Default is None.
width -- width of the TextView widget. Default is 200.
height -- height of the TextView widget. Default is 100.

make_treeview(*name*, *fmt_idx*, *_app*, *_list*, *bg_col*='white', *fg_col*='black')

Utility function to create TreeView widgets.

Keyword Arguments:

name -- the name of the TreeView to read formatting information for.
fmt_idx -- the index of the format file to use when creating the TreeView.
_app -- the ReliaFree application.
_list -- the list of items to load into the gtk.CellRendererCombo.
bg_col -- the background color to use for each row. Defaults to white.
fg_col -- the foreground (text) color to use for each row. Defaults to black.

format_cell(*column*, *cell*, *model*, *iter*, *data_*)

Function to set the formatting of the gtk.Treeview gtk.CellRenderers.

Keyword Arguments:

column -- the gtk.TreeViewColumn containing the gtk.CellRenderer to format.
cell -- the gtk.CellRenderer to format.
model -- the gtk.TreeModel containing the gtk.TreeViewColumn.
iter -- the gtk.TreeIter pointing to the row containing the gtk.CellRenderer to format.
data_ -- a tuple containing the position and the data type.

edit_tree(*cell*, *path*, *new_text*, *position*, *model*)

Called whenever a TreeView CellRenderer is edited.

Keyword Arguments: *cell* – the CellRenderer that was edited. *path* – the TreeView path of the CellRenderer that was edited. *new_text* – the new text in the edited CellRenderer. *position* – the column position of the edited CellRenderer. *model* – the TreeModel the CellRenderer belongs to.

resize_wrap(*column*, *param*, *cell*)

This function dynamically sets the wrap-width property for the gtk.CellRenderers in the gtk.TreeView when the column width is resized.

Keyword Arguments: *column* – the column being resized. *param* – the triggering parameter (this is a GParamInt object). *cell* – the cell that needs to be resized.

69.3 Variables

Name	Description
<code>__package__</code>	Value: 'reliafree'

70 Class *reliafree.assembly.Assembly*

Known Subclasses: *reliafree.component.Component*

The Assembly class is used to represent a piece of hardware in a system being analyzed. It is a meta-class for the Component class.

70.1 Methods

__init__(*self*, *application*)

Initializes the Assembly Object.

Keyword Arguments: *application* – the ReliaFree application.

load_attributes(*self*)

Loads the Assembly Object attribute values from the Hardware Object TreeView.

add_assembly(*self*, *widget*, *type_*)

Adds a new Assembly to the Program's database.

Keyword Arguments: *widget* – the widget that called this function. *type_* – the type of Assembly to add; 0 = sibling, 1 = child.

delete_assembly(*self*, *menuitem*)

Deletes the currently selected Assembly from the Program's database.

Keyword Arguments: *menuitem* – the *gtk.MenuItem* that called this function.

load_general_data(*self*)

Loads the widgets with general information about the Assembly Object.

load_allocation_data(*self*)

Loads the widgets with allocation information about the Assembly Object.

load_similar_item_data(*self*)

Loads the similar items analysis worksheet with information for the selected assembly's children.

load_calculation_inputs(*self*)

Loads the widgets with calculation input data for the Assembly Object.

load_calculation_results(*self*)

Loads the widgets with calculation results for the ASSEMBLY Object.

load_fmeca_worksheet_tab(*self*)

Creates the widgets to display the FMECA worksheet for the ASSEMBLY Object.

Keyword Arguments:

x_size -- the x-size of the layout that contains the needed widgets.

y_size -- the y-size of the layout that contains the needed widgets.

load_vandv_tab(*self*, *notebook*, *quadrant*, *x_size*, *y_size*)

Loads the widgets with verification and validation information for the ASSEMBLY Object.

Keyword Arguments:

x_size -- the x-size of the layout that contains the needed widgets.

y_size -- the y-size of the layout that contains the needed widgets.

load_frac incident_tab(*self*, *notebook*, *quadrant*, *x_size*, *y_size*)

Creates the widgets to display and enter FRACA information for the ASSEMBLY Object.

Keyword Arguments:

x_size -- the x-size of the layout that contains the needed widgets.

y_size -- the y-size of the layout that contains the needed widgets.

70.2 Class Variables

Name	Description
n_attributes	Value: 88

71 Class *reliafree.capacitors.capacitor.Capacitor*

Known Subclasses: *reliafree.capacitors.electrolytic.Aluminum*, *reliafree.capacitors.electrolytic.AluminumDry*, *reliafree.capacitors.electrolytic.TantalumNonSolid*, *reliafree.capacitors.electrolytic.TantalumSolid*, *reliafree.capacitors.variable.Ceramic*, *reliafree.capacitors.variable.Gas*, *reliafree.capacitors.variable.Piston*, *reliafree.capacitors.fixed.CeramicChip*, *reliafree.capacitors.fixed.CeramicGeneral*, *reliafree.capacitors.fixed.Glass*, *reliafree.capacitors.fixed.MetallizedPaper*, *reliafree.capacitors.fixed.Mica*, *reliafree.capacitors.fixed.MicaButton*, *reliafree.capacitors.fixed.PaperBypass*, *reliafree.capacitors.fixed.PaperFeedthrough*, *reliafree.capacitors.fixed.Plastic*, *reliafree.capacitors.fixed.PlasticFilm*, *reliafree.capacitors.fixed.SuperMetallizedPlastic*

Capacitor meta class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.

71.1 Methods

`__init__(self)`

Initializes the Capacitor Component Class.

`combo_callback(self, combo, part, _index_)`

Callback function for handling Capacitor Class ComboBox changes.

Keyword Arguments:

`combo` -- the combobox widget calling this function.

`part` -- the ReliaFree COMPONENT object.

`_index_` -- the user-defined index for the calling combobox.

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Capacitor Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Capacitor Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

72 Class **reliafree.capacitors.electrolytic.Aluminum**



Fixed Wet Aluminum Electrolytic Capacitor Component Class. Covers specification MIL-C-39016.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.14

72.1 Methods

`__init__(self)`

Initializes the Fixed Wet Aluminum Electrolytic Capacitor Component Class.

Overrides: `reliafree.capacitors.capacitor.Capacitor.__init__`

`calculate_mil_217_count(self, part)`

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Wet Aluminum Electrolytic Capacitor Component Class.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

`calculate_mil_217_stress(self, part)`

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Wet Aluminum Electrolytic Capacitor Component Class.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

Inherited from `reliafree.capacitors.capacitor.Capacitor`(Section 71)

`combo_callback()`, `create_reliability_inputs()`, `create_reliability_outputs()`, `load_reliability_inputs()`, `load_reliability_outputs()`

73 Class **reliafree.capacitors.electrolytic.AluminumDry**

reliafree.capacitors.capacitor.Capacitor —
reliafree.capacitors.electrolytic.AluminumDry

Fixed Dry Aluminum Electrolytic Capacitor Component Class. Covers specification MIL-C-62.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.15

73.1 Methods

__init__(self)

Initializes the Fixed Dry Aluminum Electrolytic Capacitor Component Class.
 Overrides: reliafree.capacitors.capacitor.Capacitor.__init__

calculate_mil_217_count(self, part)

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Dry Aluminum Electrolytic Capacitor Component Class.

Keyword Arguments: part – the ReliaFree COMPONENT object.

calculate_mil_217_stress(self, part)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Dry Aluminum Electrolytic Capacitor Component Class.

Keyword Arguments: part – the ReliaFree COMPONENT object.

Inherited from *reliafree.capacitors.capacitor.Capacitor*(Section 71)

combo_callback(), create_reliability_inputs(), create_reliability_outputs(), load_reliability_inputs(),
 load_reliability_outputs()

74 Class **reliafree.capacitors.electrolytic.TantalumNonSolid**

reliafree.capacitors.capacitor.Capacitor —
reliafree.capacitors.electrolytic.TantalumNonSolid

Fixed Non-Solid Tantalum Electrolytic Capacitor Component Class. Covers specifications MIL-C-3965 and MIL-C-39006.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.13

74.1 Methods

`__init__(self)`

Initializes the Fixed Non-Solid Tantalum Electrolytic Capacitor Component Class.

Overrides: `reliafree.capacitors.capacitor.Capacitor.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Fixed Non-Solid Tantalum Electrolytic Capacitor Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.capacitors.capacitor.Capacitor.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Fixed Non-Solid Tantalum Electrolytic Capacitor Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.capacitors.capacitor.Capacitor.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.capacitors.capacitor.Capacitor.load_reliability_inputs*

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.capacitors.capacitor.Capacitor.load_reliability_outputs*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Non-Solid Tantalum Electrolytic Capacitor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Non-Solid Tantalum Electrolytic Capacitor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from *reliafree.capacitors.capacitor.Capacitor*(Section 71)

combo_callback()

75 Class **reliafree.capacitors.electrolytic.TantalumSolid**

reliafree.capacitors.capacitor.Capacitor —
reliafree.capacitors.electrolytic.TantalumSolid

Fixed Solid Tantalum Electrolytic Capacitor Component Class. Covers specification MIL-C-39003.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.12

75.1 Methods

`__init__(self)`

Initializes the Fixed Solid Tantalum Electrolytic Capacitor Component Class.
 Overrides: `reliafree.capacitors.capacitor.Capacitor.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Fixed Solid Tantalum Electrolytic Capacitor Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.capacitors.capacitor.Capacitor.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Fixed Solid Tantalum Electrolytic Capacitor Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.capacitors.capacitor.Capacitor.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.capacitors.capacitor.Capacitor.load_reliability_inputs*

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.capacitors.capacitor.Capacitor.load_reliability_outputs*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Solid Tantalum Electrolytic Capacitor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Solid Tantalum Electrolytic Capacitor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.capacitors.capacitor.Capacitor(Section 71)

combo_callback()

76 Class **reliafree.capacitors.fixed.CeramicChip**

reliafree.capacitors.capacitor.Capacitor —
reliafree.capacitors.fixed.CeramicChip

Fixed Temperature Compensating and Chip Ceramic Capacitor Component Class.

Covers specifications MIL-C-20 and MIL-C-55681.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.11

76.1 Methods

__init__(*self*)

Initializes the Fixed Temperature Compensating and Chip Ceramic Capacitor Component Class.

Overrides: reliafree.capacitors.capacitor.Capacitor.__init__

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Temperature Compensating and Chip Ceramic Capacitor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Temperature Compensating and Chip Ceramic Capacitor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.capacitors.capacitor.Capacitor(Section 71)

combo_callback(), create_reliability_inputs(), create_reliability_outputs(), load_reliability_inputs(), load_reliability_outputs()

77 Class **reliafree.capacitors.fixed.CeramicGeneral**

reliafree.capacitors.capacitor.Capacitor —
reliafree.capacitors.fixed.CeramicGeneral

Fixed General Purpose Ceramic Capacitor Component Class. Covers specifications MIL-C-11015 and MIL-C-39014.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.10

77.1 Methods

__init__(self)

Initializes the Fixed General Purpose Ceramic Capacitor Component Class.
 Overrides: reliafree.capacitors.capacitor.Capacitor.__init__

calculate_mil_217_count(self, part)

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed General Purpose Ceramic Capacitor Component Class.
 Keyword Arguments: part – the ReliaFree COMPONENT object.

calculate_mil_217_stress(self, part)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed General Purpose Ceramic Capacitor Component Class.
 Keyword Arguments: part – the ReliaFree COMPONENT object.

Inherited from reliafree.capacitors.capacitor.Capacitor(Section 71)

combo_callback(), create_reliability_inputs(), create_reliability_outputs(), load_reliability_inputs(),
 load_reliability_outputs()

78 Class **reliafree.capacitors.fixed.Glass**



Fixed Glass Capacitor Component Class. Covers specifications MIL-C-11272 and MIL-C-23269.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.9

78.1 Methods

__init__(self)

Initializes the Fixed Glass Capacitor Component Class.

Overrides: `reliafree.capacitors.capacitor.Capacitor.__init__`

calculate_mil_217_count(self, part)

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Glass Capacitor Component Class.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

calculate_mil_217_stress(self, part)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Glass Capacitor Component Class.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

*Inherited from **reliafree.capacitors.capacitor.Capacitor**(Section 71)*

`combo_callback()`, `create_reliability_inputs()`, `create_reliability_outputs()`, `load_reliability_inputs()`, `load_reliability_outputs()`

79 Class **reliafree.capacitors.fixed.MetallizedPaper**



Fixed Metallized Paper, Paper-Plastic, and Plastic Capacitor Component Class.

Covers specifications MIL-C-18312 and MIL-C-39022.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.4

79.1 Methods

`__init__(self)`

Initializes the Fixed Metallized Paper, Paper-Plastic, and Plastic Capacitor Component Class.

Overrides: `reliafree.capacitors.capacitor.Capacitor.__init__`

`calculate_mil_217_count(self, part)`

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Metallized Paper, Paper-Plastic, and Plastic Capacitor Component Class.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

`calculate_mil_217_stress(self, part)`

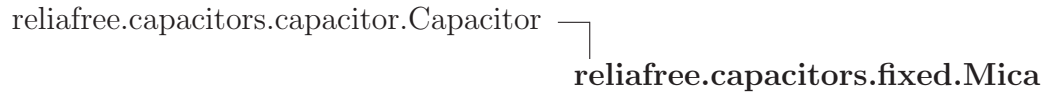
Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Metallized Paper, Paper-Plastic, and Plastic Capacitor Component Class.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

Inherited from `reliafree.capacitors.capacitor.Capacitor`(Section 71)

`combo_callback()`, `create_reliability_inputs()`, `create_reliability_outputs()`, `load_reliability_inputs()`, `load_reliability_outputs()`

80 Class **reliafree.capacitors.fixed.Mica**



Fixed Mica Capacitor Component Class. Covers specifications MIL-C-5 and MIL-C-39001.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.7

80.1 Methods

`__init__(self)`

Initializes the Fixed Mica Capacitor Component Class.

Overrides: `reliafree.capacitors.capacitor.Capacitor.__init__`

`calculate_mil_217_count(self, part)`

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Mica Capacitor Component Class.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

`calculate_mil_217_stress(self, part)`

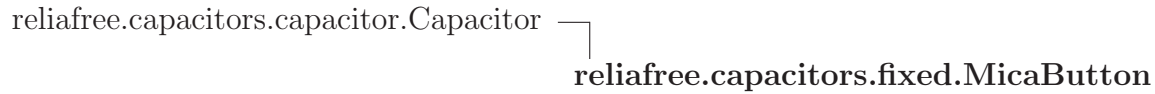
Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Mica Capacitor Component Class.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

Inherited from `reliafree.capacitors.capacitor.Capacitor`(Section 71)

`combo_callback()`, `create_reliability_inputs()`, `create_reliability_outputs()`, `load_reliability_inputs()`, `load_reliability_outputs()`

81 Class **reliafree.capacitors.fixed.MicaButton**



Fixed Mica Button Capacitor Component Class. Covers specification MIL-C-10950.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.8

81.1 Methods

`__init__(self)`

Initializes the Fixed Mica Button Capacitor Component Class.

Overrides: `reliafree.capacitors.capacitor.Capacitor.__init__`

`calculate_mil_217_count(self, part)`

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Mica Button Capacitor Component Class.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

`calculate_mil_217_stress(self, part)`

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Mica Button Capacitor Component Class.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

Inherited from `reliafree.capacitors.capacitor.Capacitor`(Section 71)

`combo_callback()`, `create_reliability_inputs()`, `create_reliability_outputs()`, `load_reliability_inputs()`, `load_reliability_outputs()`

82 Class **reliafree.capacitors.fixed.PaperBypass**

reliafree.capacitors.capacitor.Capacitor —
reliafree.capacitors.fixed.PaperBypass

Fixed Paper Bypass Capacitor Component Class. Covers specifications MIL-C-25 and MIL-C-12889.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.1

82.1 Methods

__init__(self)

Initializes the Fixed Paper Bypass Capacitor Component Class.

Overrides: reliafree.capacitors.capacitor.Capacitor.__init__

calculate_mil_217_count(self, part)

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Paper Bypass Capacitor Component Class.

Keyword Arguments: part – the ReliaFree COMPONENT object.

calculate_mil_217_stress(self, part)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Paper Bypass Capacitor Component Class.

Keyword Arguments: part – the ReliaFree COMPONENT object.

Inherited from reliafree.capacitors.capacitor.Capacitor(Section 71)

combo_callback(), create_reliability_inputs(), create_reliability_outputs(), load_reliability_inputs(), load_reliability_outputs()

83 Class **reliafree.capacitors.fixed.PaperFeedthrough**

reliafree.capacitors.capacitor.Capacitor — **reliafree.capacitors.fixed.PaperFeedthrough**

Fixed Paper Feedthrough Capacitor Component Class. Covers specification MIL-C-11693.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.2

83.1 Methods

__init__(self)

Initializes the Fixed Paper Feedthrough Bypass Capacitor Component Class.

Overrides: reliafree.capacitors.capacitor.Capacitor.__init__

calculate_mil_217_count(self, part)

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Paper Feedthrough Capacitor Component Class.

Keyword Arguments: part – the ReliaFree COMPONENT object.

calculate_mil_217_stress(self, part)

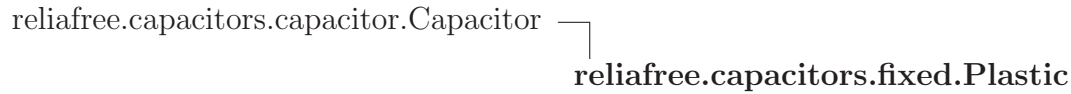
Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Paper Feedthrough Capacitor Component Class.

Keyword Arguments: part – the ReliaFree COMPONENT object.

Inherited from *reliafree.capacitors.capacitor.Capacitor*(Section 71)

combo_callback(), create_reliability_inputs(), create_reliability_outputs(), load_reliability_inputs(), load_reliability_outputs()

84 Class **reliafree.capacitors.fixed.Plastic**



Fixed Plastic and Metallized Plastic Capacitor Component Class. Covers specifications MIL-C-55514.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.5

84.1 Methods

__init__(self)

Initializes the Fixed Plastic and Metallized Plastic Capacitor Component Class.

Overrides: *reliafree.capacitors.capacitor.Capacitor.__init__*

calculate_mil_217_count(self, part)

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Plastic and Metallized Plastic Capacitor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(self, part)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Plastic and Metallized Plastic Capacitor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.capacitors.capacitor.Capacitor(Section 71)

combo_callback(), *create_reliability_inputs()*, *create_reliability_outputs()*, *load_reliability_inputs()*, *load_reliability_outputs()*

85 Class **reliafree.capacitors.fixed.PlasticFilm**

reliafree.capacitors.capacitor.Capacitor —
reliafree.capacitors.fixed.PlasticFilm

Fixed Paper and Plastic Film Capacitor Component Class. Covers specifications MIL-C-14157 and MIL-C-19978.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.3

85.1 Methods

__init__(self)

Initializes the Fixed Paper and Plastic Film Capacitor Component Class.
 Overrides: reliafree.capacitors.capacitor.Capacitor.__init__

calculate_mil_217_count(self, part)

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Paper and Plastic Film Capacitor Component Class.
 Keyword Arguments: part – the ReliaFree COMPONENT object.

calculate_mil_217_stress(self, part)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Paper and Plastic Film Capacitor Component Class.
 Keyword Arguments: part – the ReliaFree COMPONENT object.

Inherited from reliafree.capacitors.capacitor.Capacitor(Section 71)

combo_callback(), create_reliability_inputs(), create_reliability_outputs(), load_reliability_inputs(),
 load_reliability_outputs()

86 Class **reliafree.capacitors.fixed.SuperMetallizedPlastic**



Fixed Super-Metallized Plastic Capacitor Component Class. Covers specifications MIL-C-83421.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.6

86.1 Methods

`__init__(self)`

Initializes the Fixed Super-Metallized Plastic Capacitor Component Class.
Overrides: *reliafree.capacitors.capacitor.Capacitor.__init__*

`calculate_mil_217_count(self, part)`

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Super-Metallized Plastic Capacitor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

`calculate_mil_217_stress(self, part)`

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Super-Metallized Plastic Capacitor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from *reliafree.capacitors.capacitor.Capacitor*(Section 71)

combo_callback(), *create_reliability_inputs()*, *create_reliability_outputs()*, *load_reliability_inputs()*, *load_reliability_outputs()*

87 Class **reliafree.capacitors.variable.AirTrimmer**

reliafree.capacitors.capacitor.Capacitor —
reliafree.capacitors.variable.AirTrimmer

Variable Air Trimmer Capacitor Component Class. Covers specification MIL-C-92.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.18

87.1 Methods

__init__(self)

Initializes the Variable Air Trimmer Capacitor Component Class.

Overrides: reliafree.capacitors.capacitor.Capacitor.__init__

create_reliability_outputs(self, part, layout)

Populates the ReliaFree Workbook calculation results tab with the widgets to display Variable Air Trimmer Capacitor Component Class calculation results.

Keyword Arguments: part – the ReliaFree COMPONENT object. layout – the layout widget to contain the display widgets.

Overrides: reliafree.capacitors.capacitor.Capacitor.create_reliability_outputs

calculate_mil_217_count(self, part)

Performs MIL-HDBK-217F part count hazard rate calculations for the Variable Air Trimmer Capacitor Component Class.

Keyword Arguments: part – the ReliaFree COMPONENT object.

calculate_mil_217_stress(self, part)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Variable Air Trimmer Capacitor Component Class.

Keyword Arguments: part – the ReliaFree COMPONENT object.

Inherited from reliafree.capacitors.capacitor.Capacitor(Section 71)

combo_callback(), create_reliability_inputs(), load_reliability_inputs(), load_reliability_outputs()

88 Class **reliafree.capacitors.variable.Ceramic**

reliafree.capacitors.capacitor.Capacitor —
reliafree.capacitors.variable.Ceramic

Variable Ceramic Capacitor Component Class. Covers specification MIL-C-81.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.16

88.1 Methods

__init__(self)

Initializes the Variable Ceramic Capacitor Component Class.

Overrides: reliafree.capacitors.capacitor.Capacitor.__init__

create_reliability_outputs(self, part, layout)

Populates the ReliaFree Workbook calculation results tab with the widgets to display Variable Ceramic Capacitor Component Class calculation results.

Keyword Arguments: part – the ReliaFree COMPONENT object. layout – the layout widget to contain the display widgets.

Overrides: reliafree.capacitors.capacitor.Capacitor.create_reliability_outputs

calculate_mil_217_count(self, part)

Performs MIL-HDBK-217F part count hazard rate calculations for the Variable Ceramic Capacitor Component Class.

Keyword Arguments: part – the ReliaFree COMPONENT object.

calculate_mil_217_stress(self, part)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Variable Ceramic Capacitor Component Class.

Keyword Arguments: part – the ReliaFree COMPONENT object.

Inherited from reliafree.capacitors.capacitor.Capacitor(Section 71)

combo_callback(), create_reliability_inputs(), load_reliability_inputs(), load_reliability_outputs()

89 Class **reliafree.capacitors.variable.Gas**

reliafree.capacitors.capacitor.Capacitor —
reliafree.capacitors.variable.Gas

Variable and Fixed Gas or Vacuum Capacitor Component Class. Covers specification MIL-C-23183.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.19

89.1 Methods

`__init__(self)`

Initializes the Variable and Fixed Gas or Vacuum Capacitor Component Class.
 Overrides: `reliafree.capacitors.capacitor.Capacitor.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Variable and Fixed Gas or Vacuum Capacitor Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.capacitors.capacitor.Capacitor.create_reliability_inputs`

`load_reliability_inputs(self, part)`

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

Overrides: `reliafree.capacitors.capacitor.Capacitor.load_reliability_inputs`

`calculate_mil_217_count(self, part)`

Performs MIL-HDBK-217F part count hazard rate calculations for the Variable and Fixed Gas or Vacuum Capacitor Component Class.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

calculate_mil_217_stress (<i>self</i> , <i>part</i>)
Performs MIL-HDBK-217F part stress hazard rate calculations for the Variable and Fixed Gas or Vacuum Capacitor Component Class.
Keyword Arguments: <i>part</i> – the ReliaFree COMPONENT object.

Inherited from reliafree.capacitors.capacitor.Capacitor(Section 71)

combo_callback(), *create_reliability_outputs()*, *load_reliability_outputs()*

90 Class **reliafree.capacitors.variable.Piston**

reliafree.capacitors.capacitor.Capacitor —
reliafree.capacitors.variable.Piston

Variable Piston Type Capacitor Component Class. Covers specification MIL-C-14409.

Hazard Rate Models:

1. MIL-HDBK-217F, section 10.17

90.1 Methods

__init__(self)

Initializes the Variable Piston Type Capacitor Component Class.

Overrides: reliafree.capacitors.capacitor.Capacitor.__init__

create_reliability_outputs(self, part, layout)

Populates the ReliaFree Workbook calculation results tab with the widgets to display Variable Piston Type Capacitor Component Class calculation results.

Keyword Arguments: part – the ReliaFree COMPONENT object. layout – the layout widget to contain the display widgets.

Overrides: reliafree.capacitors.capacitor.Capacitor.create_reliability_outputs

calculate_mil_217_count(self, part)

Performs MIL-HDBK-217F part count hazard rate calculations for the Variable Piston Type Capacitor Component Class.

Keyword Arguments: part – the ReliaFree COMPONENT object.

calculate_mil_217_stress(self, part)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Variable Piston Type Capacitor Component Class.

Keyword Arguments: part – the ReliaFree COMPONENT object.

Inherited from reliafree.capacitors.capacitor.Capacitor(Section 71)

combo_callback(), create_reliability_inputs(), load_reliability_inputs(), load_reliability_outputs()

91 Class **reliafree.component.Component**



The Components class is used to represent a component in a system being analyzed.

91.1 Methods

`__init__(self, application)`

Initializes the Component Object.

Keyword Arguments: *application* – the ReliaFree application.

Overrides: *reliafree.assembly.Assembly.__init__*

`load_attributes(self)`

Loads the Component Object *_attribute* values from the Hardware treeview and *_calc_data* list values from the Parts List.

Overrides: *reliafree.assembly.Assembly.load_attributes*

`add_component(self, widget)`

Public method to add a new Component to the Program's MySQL database.

Keyword Arguments: *widget* – the widget that called this function.

`delete_component(self, menuitem)`

Public method to delete the currently selected Component from the Program's MySQL database.

Keyword Arguments: *menuitem* – the *gtk.MenuItem* that called this function.

`load_general_data(self)`

Loads the widgets with general information about the Component Object.

Overrides: *reliafree.assembly.Assembly.load_general_data*

load_calculation_inputs(*self*)

Loads the widgets with calculation input information for the Component Object.

Overrides: *reliafree.assembly.Assembly.load_calculation_inputs*

load_calculation_results(*self*)

Loads the widgets with calculation results for the COMPONENT Object.

Overrides: *reliafree.assembly.Assembly.load_calculation_results*

load_part_subcategory_combo(*self*, *combo*)

Callback function to load the Component Object subcategory combobox when the Component Object category combobox is changed.

Keyword Arguments: *combo* – the Component Object category combobox.

calculate(*self*)

Calculates the hazard rate, hazard rate percentage, power ratio, and whether the component is overstressed for the Component Object.

Inherited from reliafree.assembly.Assembly(Section 70)

add_assembly(), *delete_assembly()*, *load_allocation_data()*, *load_fmeca_worksheet_tab()*, *load_fraci_incident_tab()*, *load_similar_item_data()*, *load_vandv_tab()*

91.2 Class Variables

Name	Description
<i>Inherited from reliafree.assembly.Assembly (Section 70)</i>	
<i>n_attributes</i>	

92 Class `reliafree.configuration.ReliaFreeConf`

The ReliaFree configuration class.

92.1 Methods

<code>__init__(self, level='site')</code>

Initializes the ReliaFree configuration parser.

Keyword Arguments:

level -- indicates which configuration file is to be read. One of 'site', 'user', 'site_developer', or 'user_developer'.
--

<code>create_default_configuration(self)</code>

Creates a default configuration file in the user's configuration directory.

<code>write_configuration(self)</code>
--

Writes changes to the user's configuration file.
--

<code>read_configuration(self)</code>

Reads the user's configuration file.

93 Class **reliafree.connections.connection.Connection**

Known Subclasses: *reliafree.connections.multipin.Multipin*, *reliafree.connections.socket.ICSocket*, *reliafree.connections.pcb.PCBEdge*, *reliafree.connections.solder.PTH*, *reliafree.connections.solder.Solder*

Connections meta class.

Hazard Rate Models:

1. MIL-HDBK-217F, sections 15, 16, and 17.

93.1 Methods

`__init__(self)`

Initializes the Connections Component Class.

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Connections Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Connections Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

`load_reliability_inputs(self, part)`

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

`load_reliability_outputs(self, part)`

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

combo_callback(*self, combo, part, _index_*)

Callback function for handling Connections Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

entry_callback(*self, entry, event, part, convert, _index_*)

Callback function for handling Connections Component Class Entry changes.

Keyword Arguments:

entry -- the entry widget calling this function.

event -- the event that triggered calling this function.

part -- the ReliaFree COMPONENT object.

convert -- the data type to convert the entry contents to.

index -- the position in the Component property array
 associated with the data from the entry that called
 this function.

94 Class **reliafree.connections.multipin.Multipin**

reliafree.connections.connection.Connection —
reliafree.connections.multipin.Multipin

Multipin Connection Component Class. Covers specifications MIL-C-24308, MIL-C-28748, MIL-C-28804, MIL-C-83513, MIL-C-83733, MIL-C-5015, MIL-C-26482, MIL-C-28840, MIL-C-38999, MIL-C-81511, MIL-C-83723, MIL-C-3607, MIL-C-3643, MIL-C-3650, MIL-C-3655, MIL-C-25516, MIL-C-39012, MIL-C-55235, MIL-C-55339, MIL-C-3767, MIL-C-22992, MIL-C-49142.

Hazard Rate Models:

1. MIL-HDBK-217F, section 15.1

94.1 Methods

__init__(self)

Initializes the Multipin Connection Component Class.

Overrides: `reliafree.connections.connection.Connection.__init__`

create_reliability_inputs(self, part, layout)

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Multipin Connection Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.connections.connection.Connection.create_reliability_inputs`

create_reliability_outputs(self, part, layout)

Populates the ReliaFree Workbook calculation results tab with the widgets to display Multipin Connection Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.connections.connection.Connection.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.connections.connection.Connection.load_reliability_inputs*

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.connections.connection.Connection.load_reliability_outputs*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Multipin Connection Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

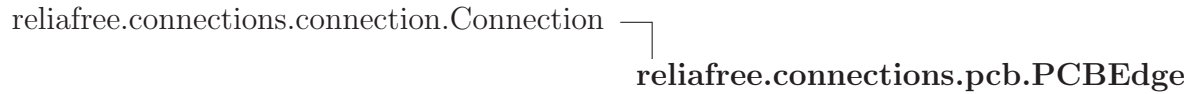
Performs MIL-HDBK-217F part stress hazard rate calculations for the Multipin Connection Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.connections.connection.Connection(Section 93)

combo_callback(), *entry_callback()*

95 Class **reliafree.connections.pcb.PCBEdge**



PCB Edge Connection Component Class. Covers specifications MIL-C-21097 and MIL-C-55302.

Hazard Rate Models:

1. MIL-HDBK-217F, section 15.2.

95.1 Methods

`__init__(self)`

Initializes the Rotary Switch Component Class.

Overrides: `reliafree.connections.connection.Connection.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for PCB Edge Connection Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.connections.connection.Connection.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display PCB Edge Connection Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.connections.connection.Connection.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.connections.connection.Connection.load_reliability_inputs*

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.connections.connection.Connection.load_reliability_outputs*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the PCB Edge Connection Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

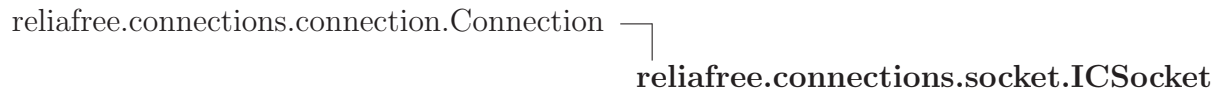
Performs MIL-HDBK-217F part stress hazard rate calculations for the PCB Edge Connection Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.connections.connection.Connection(Section 93)

combo_callback(), *entry_callback()*

96 Class `reliafree.connections.socket.ICSocket`



IC Socket Connection Component Class.
Covers specifications MIL-S-83734.

Hazard Rate Models:

1. MIL-HDBK-217F, section 15.3.

96.1 Methods

`__init__(self)`

Initializes the IC Socket Connection Component Class.

Overrides: `reliafree.connections.connection.Connection.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for IC Socket Connection Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.connections.connection.Connection.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display IC Socket Connection Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.connections.connection.Connection.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.connections.connection.Connection.load_reliability_inputs*

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.connections.connection.Connection.load_reliability_outputs*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the IC Socket Connection Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the IC Socket Connection Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.connections.connection.Connection(Section 93)

combo_callback(), *entry_callback()*

97 Class `reliafree.connections.solder.PTH`

`reliafree.connections.connection.Connection` — `reliafree.connections.solder.PTH`

Plated Through Hole Connection Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 16.1.

97.1 Methods

`__init__(self)`

Initializes the Plated Through Hole Connection Component Class.

Overrides: `reliafree.connections.connection.Connection.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Plated Through Hole Connection Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.connections.connection.Connection.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Plated Through Hole Connection Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.connections.connection.Connection.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.connections.connection.Connection.load_reliability_inputs*

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.connections.connection.Connection.load_reliability_outputs*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Plated Through Hole Connection Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Plated Through Hole Connection Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.connections.connection.Connection(Section 93)

combo_callback(), *entry_callback()*

98 Class `reliafree.connections.solder.Solder`



Non-Plated Through Hole Connection Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 16.1.

98.1 Methods

`__init__(self, type)`

Initializes the Solder Connection Component Class.

Overrides: `reliafree.connections.connection.Connection.__init__`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Non-Plated Through Hole Connection Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.connections.connection.Connection.create_reliability_outputs`

`load_reliability_outputs(self, part)`

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

Overrides: `reliafree.connections.connection.Connection.load_reliability_outputs`

`calculate_mil_217_count(self, part)`

Performs MIL-HDBK-217F part count hazard rate calculations for the Non-Plated Through Hole Connection Component Class.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

calculate_mil_217_stress (<i>self</i> , <i>part</i>)
Performs MIL-HDBK-217F part stress hazard rate calculations for the Non-Plated Through Hole Connection Component Class.
Keyword Arguments: <i>part</i> – the ReliaFree COMPONENT object.

Inherited from reliafree.connections.connection.Connection(Section 93)

combo_callback(), *create_reliability_inputs()*, *entry_callback()*, *load_reliability_inputs()*

99 Class **reliafree.function.Function**

The Function class is used to represent a function in a system being analyzed.

99.1 Methods

__init__(*self*, *application*)

Initializes the Function Object.

Keyword Arguments: *application* – the ReliaFree application.

load_attributes(*self*)

Loads the Function Object attribute values from the Function Object TreeView.

create_tree(*self*)

Creates the Function TreeView and connects it to callback functions to handle editing. Background and foreground colors can be set using the user-defined values in the ReliaFree configuration file.

load_tree(*self*)

Loads the Function treeview model with system information. This information can be stored either in a MySQL database.

add_function(*self*, *widget*, *type_*)

Adds a new Function to the Program's MySQL database.

Keyword Arguments: *widget* – the widget that called this function. *type_* – the type of Function to add; 0 = sibling, 1 = child.

delete_function(*self*, *menuitem*)

Deletes the currently selected Function from the Program's MySQL database.

Keyword Arguments: *menuitem* – the gtk.MenuItem that called this function.

load_general_data(*self*)

Loads the widgets with general information about the Function Object.

load_functional_matrix_tab(*self*)

Creates the TreeView widget to display the Hardware/Function relationship matrix.

load_calculation_results(*self*)

Loads the widgets with calculation results for the Function Object.

rollup(*self*)

Calculates the sum of various parameters for the Function Object. This is the sum of corresponding component values.

100 Class *reliafree.hardware.Hardware*

The Hardware class is simply the treeview that holds and displays the system tree in the ReliaFree Treebook. The Hardware class also includes functions for interacting with the treeview.

100.1 Methods

<code>__init__</code> (<i>self</i> , <i>application</i>)

Initializes the Hardware Object.

Keyword Arguments: <i>application</i> – the ReliaFree application.
--

<code>create_tree</code> (<i>self</i>)

Creates the HARDWARE treeview and connects it to callback functions to handle editing. Background and foreground colors can be set using the user-defined values in the ReliaFree configuration file.

<code>load_tree</code> (<i>self</i>)

Loads the Hardware treeview model with system information. This information can be stored either in a MySQL database.

<code>save_hardware</code> (<i>self</i>)

Saves the Hardware Object treeview information to the Program's database.

100.2 Class Variables

Name	Description
TARGETS	Value: [('extTreeView', <flags GTK_TARGET_SAME_WIDGET of type Gt...

101 Class **reliafree.inductors.coil.Coil**

reliafree.inductors.inductor.Inductor —
reliafree.inductors.coil.Coil

Coil Component Class. Covers specifications MIL-C-15305 and MIL-C-39010.

Hazard Rate Models:

1. MIL-HDBK-217F, section 11.2

101.1 Methods

__init__(*self*)

Initializes the Coil Component Class.

Overrides: reliafree.inductors.inductor.Inductor.__init__

create_reliability_inputs(*self, part, layout*)

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Coil Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides: reliafree.inductors.inductor.Inductor.create_reliability_inputs

create_reliability_outputs(*self, part, layout*)

Populates the ReliaFree Workbook calculation results tab with the widgets to display Coil Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides: reliafree.inductors.inductor.Inductor.create_reliability_outputs

load_reliability_inputs(*self, part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: reliafree.inductors.inductor.Inductor.load_reliability_inputs

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.inductors.inductor.Inductor.load_reliability_outputs*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Coil Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Coil Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.inductors.inductor.Inductor(Section 102)

combo_callback(), *entry_callback()*

102 Class *reliafree.inductors.inductor.Inductor*

Known Subclasses: *reliafree.inductors.transformer.Audio*, *reliafree.inductors.transformer.LowPowerPuls*, *reliafree.inductors.transformer.Power*, *reliafree.inductors.transformer.RF*, *reliafree.inductors.coil.Coil*

Inductive Devices meta class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 11.

102.1 Methods

`__init__(self)`

Initializes the Inductive Devices Component Class.

`combo_callback(self, combo, part, _index_)`

Callback function for handling Inductive Devices Component Class ComboBox changes.

Keyword Arguments:

`combo` -- the combobox widget calling this function.

`part` -- the ReliaFree COMPONENT object.

`_index_` -- the user-defined index for the calling combobox.

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Inductive Devices Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Inductive Devices Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

entry_callback(*self, entry, event, part, convert, _index_*)

Callback function for handling Inductive Device Component Class Entry changes.

Keyword Arguments:

entry -- the entry widget calling this function.
event -- the event that triggered calling this function.
part -- the ReliaFree COMPONENT object.
convert -- the data type to convert the entry contents to.
index -- the position in the Component property array
associated with the data from the entry that called
this function.

load_reliability_inputs(*self, part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: part – the ReliaFree COMPONENT object.

load_reliability_outputs(*self, part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: part – the ReliaFree COMPONENT object.

103 Class `reliafree.inductors.transformer.Audio`

`reliafree.inductors.inductor.Inductor` └─ **`reliafree.inductors.transformer.Audio`**

Audio Transformer Component Class. Covers specifications MIL-T-27, MIL-T-21038, and MIL-T-55631.

Hazard Rate Models:

1. MIL-HDBK-217F, section 11.1

103.1 Methods

<code>__init__(self)</code>

Initializes the Audio Transformer Component Class.
--

Overrides: <code>reliafree.inductors.inductor.Inductor.__init__</code>
--

<code>calculate_mil_217_count(self, part)</code>

Performs MIL-HDBK-217F part count hazard rate calculations for the Audio Transformer Component Class.

Keyword Arguments: <code>part</code> – the ReliaFree COMPONENT object.
--

<code>calculate_mil_217_stress(self, part)</code>
--

Performs MIL-HDBK-217F part stress hazard rate calculations for the Audio Transformer Component Class.
--

Keyword Arguments: <code>part</code> – the ReliaFree COMPONENT object.
--

Inherited from `reliafree.inductors.inductor.Inductor` (Section 102)

`combo_callback()`, `create_reliability_inputs()`, `create_reliability_outputs()`, `entry_callback()`, `load_reliability_inputs()`, `load_reliability_outputs()`

104 Class `reliafree.inductors.transformer.LowPowerPulse`



Low Power Pulse Transformer Component Class. Covers specifications MIL-T-27, MIL-T-21038, and MIL-T-55631.

Hazard Rate Models:

1. MIL-HDBK-217F, section 11.1

104.1 Methods

`__init__(self)`

Initializes the Low Power Pulse Transformer Component Class.

Overrides: `reliafree.inductors.inductor.Inductor.__init__`

`calculate_mil_217_count(self, part)`

Performs MIL-HDBK-217F part count hazard rate calculations for the Low Power Pulse Transformer Component Class.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

`calculate_mil_217_stress(self, part)`

Performs MIL-HDBK-217F part stress hazard rate calculations for the Low Power Pulse Transformer Component Class.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

Inherited from `reliafree.inductors.inductor.Inductor` (Section 102)

`combo_callback()`, `create_reliability_inputs()`, `create_reliability_outputs()`, `entry_callback()`, `load_reliability_inputs()`, `load_reliability_outputs()`

105 Class **reliafree.inductors.transformer.Power**

reliafree.inductors.inductor.Inductor —
reliafree.inductors.transformer.Power

High Power Pulse and Power Transformer Component Class. Covers specifications MIL-T-27, MIL-T-21038, and MIL-T-55631.

Hazard Rate Models:

1. MIL-HDBK-217F, section 11.1

105.1 Methods

__init__(self)

Initializes the High Power Pulse and Power Transformer Component Class.
 Overrides: reliafree.inductors.inductor.Inductor.__init__

calculate_mil_217_count(self, part)

Performs MIL-HDBK-217F part count hazard rate calculations for the High Power Pulse and Power Transformer Component Class.

Keyword Arguments: part – the ReliaFree COMPONENT object.

calculate_mil_217_stress(self, part)

Performs MIL-HDBK-217F part stress hazard rate calculations for the High Power Pulse and Power Transformer Component Class.

Keyword Arguments: part – the ReliaFree COMPONENT object.

Inherited from reliafree.inductors.inductor.Inductor(Section 102)

combo_callback(), create_reliability_inputs(), create_reliability_outputs(), entry_callback(),
 load_reliability_inputs(), load_reliability_outputs()

106 Class **reliafree.inductors.transformer.RF**

reliafree.inductors.inductor.Inductor —
reliafree.inductors.transformer.RF

Radio Frequency Transformer Component Class. Covers specifications MIL-T-27, MIL-T-21038, and MIL-T-55631.

Hazard Rate Models:

1. MIL-HDBK-217F, section 11.1

106.1 Methods

__init__ (<i>self</i>)

Initializes the Radio Frequency Transformer Component Class.
--

Overrides: reliafree.inductors.inductor.Inductor.__init__

calculate_mil_217_count (<i>self</i> , <i>part</i>)
--

Performs MIL-HDBK-217F part count hazard rate calculations for the Radio Frequency Transformer Component Class.

Keyword Arguments: <i>part</i> – the ReliaFree COMPONENT object.
--

calculate_mil_217_stress (<i>self</i> , <i>part</i>)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Radio Frequency Transformer Component Class.
--

Keyword Arguments: <i>part</i> – the ReliaFree COMPONENT object.
--

Inherited from reliafree.inductors.inductor.Inductor(Section 102)

combo_callback(), create_reliability_inputs(), create_reliability_outputs(), entry_callback(),
load_reliability_inputs(), load_reliability_outputs()

107 Class `reliafree.integrated_circuits.gaas.GaAsDigital`

`reliafree.integrated_circuits.ic.IntegratedCircuit` —
`reliafree.integrated_circuits.gaas.GaAsDigital`

Digital GaAs Integrated Circuit Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 5.4

107.1 Methods

`__init__(self)`

Initializes the Digital GaAs Integrated Circuit Component Class.

Overrides: `reliafree.integrated_circuits.ic.IntegratedCircuit.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Digital GaAs Integrated Circuit prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Digital GaAs Integrated Circuit calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.load_reliability_inputs

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Digital GaAs Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Digital GaAs Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from *reliafree.integrated_circuits.ic.IntegratedCircuit*(Section 109)

combo_callback(), *entry_callback()*, *load_reliability_outputs()*

108 Class `reliafree.integrated_circuits.gaas.GaAsMMIC`

`reliafree.integrated_circuits.ic.IntegratedCircuit` — `reliafree.integrated_circuits.gaas.GaAsMMIC`

Microwave Monolithic GaAs Integrated Circuit Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 5.4

108.1 Methods

`__init__(self)`

Initializes the Microwave Monolithic GaAs Integrated Circuit Component Class.

Overrides: `reliafree.integrated_circuits.ic.IntegratedCircuit.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Microwave Monolithic GaAs Integrated Circuit prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Microwave Monolithic GaAs Integrated Circuit calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.load_reliability_inputs

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.load_reliability_outputs

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling ComboBox changes specific to the Microwave Monolithic GaAs Integrated Circuit Component Class.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides: *reliafree.integrated_circuits.ic.IntegratedCircuit.combo_callback*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Microwave Monolithic GaAs Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Microwave Monolithic GaAs Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.integrated_circuits.ic.IntegratedCircuit(Section 109)

entry_callback()

109 Class `reliafree.integrated_circuits.ic.IntegratedCircuit`

Known Subclasses: `reliafree.integrated_circuits.gaas.GaAsDigital`, `reliafree.integrated_circuits.gaas.GaAsAnalog`, `reliafree.integrated_circuits.memory.MemoryDRAM`, `reliafree.integrated_circuits.memory.MemoryEEPROM`, `reliafree.integrated_circuits.memory.MemoryROM`, `reliafree.integrated_circuits.memory.MemorySRAM`, `reliafree.integrated_circuits.vlsi.VLSI`, `reliafree.integrated_circuits.palpla.PALPLA`, `reliafree.integrated_circuits.microprocessor.Microprocessor`, `reliafree.integrated_circuits.logic.Logic`

Integrated Circuit meta class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 5.

109.1 Methods

`__init__(self)`

Initializes the Integrated Circuit Component Class.

`combo_callback(self, combo, part, _index_)`

Callback function for handling Integrated Circuit Class ComboBox changes.

Keyword Arguments: `combo` – the combobox widget calling this function.
`part` – the ReliaFree COMPONENT object. `_index_` – the user-defined index for the calling combobox.

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Integrated Circuit prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Integrated Circuit calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

entry_callback(*self, entry, event, part, convert, _index_*)

Callback function for handling Integrated Circuit Class Entry changes.

Keyword Arguments:

entry -- the entry widget calling this function.
event -- the event that triggered calling this function.
part -- the ReliaFree COMPONENT object.
convert -- the data type to convert the entry contents to.
index -- the position in the Component property array
associated with the data from the entry that called
this function.

load_reliability_inputs(*self, part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

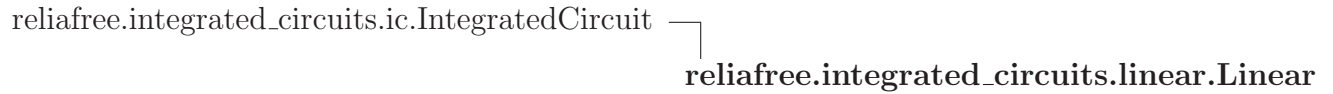
Keyword Arguments: *part* – the ReliaFree COMPONENT object.

load_reliability_outputs(*self, part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

110 Class `reliafree.integrated_circuits.linear.Linear`



Linear integrated circuit class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 5.1

110.1 Methods

`__init__(self)`

Initializes the Linear Integrated Circuit Component Class.

Overrides: `reliafree.integrated_circuits.ic.IntegratedCircuit.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Linear Integrated Circuit prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Linear Integrated Circuit calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.load_reliability_inputs

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Linear Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Linear Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.integrated_circuits.ic.IntegratedCircuit(Section 109)

combo_callback(), *entry_callback()*, *load_reliability_outputs()*

111 Class `reliafree.integrated_circuits.logic.Logic`

`reliafree.integrated_circuits.ic.IntegratedCircuit` — `reliafree.integrated_circuits.logic.Logic`

Logic (digital) integrated circuit class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 5.1

111.1 Methods

`__init__(self)`

Initializes the Logic IC Component Class.

Overrides: `reliafree.integrated_circuits.ic.IntegratedCircuit.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Logic Integrated Circuit prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Logic Integrated Circuit calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.load_reliability_inputs

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Integrated Circuit Class ComboBox changes.

Keyword Arguments: *combo* – the combobox widget calling this function. *part* – the ReliaFree COMPONENT object. *_index_* – the user-defined index for the calling combobox.

Overrides: *reliafree.integrated_circuits.ic.IntegratedCircuit.combo_callback*
exitit(inherited documentation)

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Logic Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Logic Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.integrated_circuits.ic.IntegratedCircuit(Section 109)

entry_callback(), *load_reliability_outputs()*

112 Class `reliafree.integrated_circuits.memory.MemoryDRAM`

`reliafree.integrated_circuits.ic.IntegratedCircuit` — `reliafree.integrated_circuits.memory.MemoryDRAM`

DRAM memory class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 5.2

112.1 Methods

`__init__(self)`

Initializes the Memory, DRAM Integrated Circuit Component Class.

Overrides: `reliafree.integrated_circuits.ic.IntegratedCircuit.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Memory, DRAM Integrated Circuit prediction calculations.

Keyword Arguments:

`part` -- the ReliaFree COMPONENT object.

`layout` -- the layout widget to contain the display widgets.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Memory, DRAM Integrated Circuit calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.load_reliability_inputs

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Memory, DRAM Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Memory, DRAM Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.integrated_circuits.ic.IntegratedCircuit(Section 109)

combo_callback(), *entry_callback()*, *load_reliability_outputs()*

113 Class `reliafree.integrated_circuits.memory.MemoryEEPROM`

`reliafree.integrated_circuits.ic.IntegratedCircuit` — `reliafree.integrated_circuits.memory.MemoryEEPROM`

EEPROM memory class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 5.2

113.1 Methods

`__init__(self)`

Initializes the Memory, EEPROM Integrated Circuit Component Class.

Overrides: `reliafree.integrated_circuits.ic.IntegratedCircuit.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Memory, EEPROM Integrated Circuit prediction calculations.

Keyword Arguments:

`part` -- the ReliaFree COMPONENT object.

`layout` -- the layout widget to contain the display widgets.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Memory, EEPROM Integrated Circuit calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.load_reliability_inputs

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.load_reliability_outputs

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling ComboBox changes specific to the Memory, EEPROM Integrated Circuit Component Class.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides: *reliafree.integrated_circuits.ic.IntegratedCircuit.combo_callback*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Memory, EEPROM Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Memory, EEPROM Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.integrated_circuits.ic.IntegratedCircuit(Section 109)

entry_callback()

114 Class `reliafree.integrated_circuits.memory.MemoryROM`

`reliafree.integrated_circuits.ic.IntegratedCircuit` — `reliafree.integrated_circuits.memory.MemoryROM`

ROM Memory class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 5.2

114.1 Methods

`__init__(self)`

Initializes the Memory, ROM Integrated Circuit Component Class.

Overrides: `reliafree.integrated_circuits.ic.IntegratedCircuit.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Memory, ROM Integrated Circuit prediction calculations.

Keyword Arguments:

`part` -- the ReliaFree COMPONENT object.

`layout` -- the layout widget to contain the display widgets.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Memory, ROM Integrated Circuit calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.load_reliability_inputs

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Memory, ROM Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Memory, ROM Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.integrated_circuits.ic.IntegratedCircuit(Section 109)

combo_callback(), *entry_callback()*, *load_reliability_outputs()*

115 Class *reliafree.integrated_circuits.memory.MemorySRAM*

reliafree.integrated_circuits.ic.IntegratedCircuit — *reliafree.integrated_circuits.memory.MemorySRAM*

SRAM memory class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 5.2

115.1 Methods

__init__(*self*)

Initializes the Memory, SRAM Integrated Circuit Component Class.

Overrides: *reliafree.integrated_circuits.ic.IntegratedCircuit.__init__*

create_reliability_inputs(*self, part, layout*)

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Memory, SRAM Integrated Circuit prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_inputs

create_reliability_outputs(*self, part, layout*)

Populates the ReliaFree Workbook calculation results tab with the widgets to display Memory, SRAM Integrated Circuit calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_outputs

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.load_reliability_inputs

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Memory, SRAM Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Memory, SRAM Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.integrated_circuits.ic.IntegratedCircuit(Section 109)

combo_callback(), *entry_callback()*, *load_reliability_outputs()*

116 Class *reliafree.integrated_circuits.microprocessor.Microprocessor*

reliafree.integrated_circuits.ic.IntegratedCircuit — *reliafree.integrated_circuits.microprocessor.Microprocessor*

Microprocessor class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 5.1

116.1 Methods

`__init__(self)`

Initializes the Microprocessor Integrated Circuit Component Class.

Overrides: *reliafree.integrated_circuits.ic.IntegratedCircuit.__init__*

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Microprocessor Integrated Circuit prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_inputs

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Microprocessor Integrated Circuit calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_outputs

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.load_reliability_inputs

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Microprocessor Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Microprocessor Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.integrated_circuits.ic.IntegratedCircuit(Section 109)

combo_callback(), *entry_callback()*, *load_reliability_outputs()*

117 Class *reliafree.integrated_circuits.palpla.PALPLA*

reliafree.integrated_circuits.ic.IntegratedCircuit — *reliafree.integrated_circuits.palpla.PALPLA*

PAL/PLA device class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 5.1

117.1 Methods

__init__(self)

Initializes the PAL/PLA IC Component Class.

Overrides: *reliafree.integrated_circuits.ic.IntegratedCircuit.__init__*

create_reliability_inputs(self, part, layout)

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for PAL/PLA Integrated Circuit prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_inputs

load_reliability_inputs(self, part)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.integrated_circuits.ic.IntegratedCircuit.load_reliability_inputs

calculate_mil_217_count(self, part)

Performs MIL-HDBK-217F part count hazard rate calculations for the PAL/PLA Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress (<i>self</i> , <i>part</i>)
Performs MIL-HDBK-217F part stress hazard rate calculations for the PAL/PLA Integrated Circuit Class.
Keyword Arguments: <i>part</i> – the ReliaFree COMPONENT object.

Inherited from reliafree.integrated_circuits.ic.IntegratedCircuit(Section 109)

combo_callback(), *create_reliability_outputs()*, *entry_callback()*, *load_reliability_outputs()*

118 Class `reliafree.integrated_circuits.vlsi.VLSI`

`reliafree.integrated_circuits.ic.IntegratedCircuit` —
`reliafree.integrated_circuits.vlsi.VLSI`

VHSIC/VHSIC-like and VLSI CMOS integrated circuit class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 5.3

118.1 Methods

`__init__(self)`

Initializes the Integrated Circuit Component Class.

Overrides: `reliafree.integrated_circuits.ic.IntegratedCircuit.__init__`
`exitit`(inherited documentation)

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for VLSI Integrated Circuit prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display VLSI Integrated Circuit calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.load_reliability_inputs`

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

`reliafree.integrated_circuits.ic.IntegratedCircuit.load_reliability_outputs`

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Integrated Circuit Class ComboBox changes.

Keyword Arguments: *combo* – the combobox widget calling this function. *part* – the ReliaFree COMPONENT object. *_index_* – the user-defined index for the calling combobox.

Overrides: `reliafree.integrated_circuits.ic.IntegratedCircuit.combo_callback`

entry_callback(*self*, *entry*, *event*, *part*, *convert*, *_index_*)

Callback function for handling Integrated Circuit Class Entry changes.

Keyword Arguments:

entry -- the entry widget calling this function.

event -- the event that triggered calling this function.

part -- the ReliaFree COMPONENT object.

convert -- the data type to convert the entry contents to.

index -- the position in the Component property array associated with the data from the entry that called this function.

Overrides: `reliafree.integrated_circuits.ic.IntegratedCircuit.entry_callback`

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the VLSI Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the VLSI Integrated Circuit Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

ok (<i>self</i> , <i>dialog</i> , <i>response</i>)

Callback function to handle OK button response.

cancel (<i>self</i> , <i>dialog</i>)

Callback function to handle CANCEL button response.

Inherited from gtk.Dialog

`_iter_()`, `add_action_widget()`, `add_button()`, `add_buttons()`, `do_close()`, `do_response()`, `get_action_area()`, `get_content_area()`, `get_has_separator()`, `get_response_for_widget()`, `get_widget_for_response()`, `response()`, `run()`, `set_alternative_button_order()`, `set_default_response()`, `set_has_separator()`, `set_response_sensitive()`

Inherited from gtk.Window

`activate_default()`, `activate_focus()`, `activate_key()`, `add_accel_group()`, `add_mnemonic()`, `begin_move_drag()`, `begin_resize_drag()`, `deiconify()`, `do_activate_default()`, `do_activate_focus()`, `do_frame_event()`, `do_keys_changed()`, `do_move_focus()`, `do_set_focus()`, `fullscreen()`, `get_accept_focus()`, `get_decorated()`, `get_default_size()`, `get_default_widget()`, `get_deletable()`, `get_destroy_with_parent()`, `get_focus()`, `get_focus_on_map()`, `get_frame_dimensions()`, `get_gravity()`, `get_group()`, `get_has_frame()`, `get_icon()`, `get_icon_list()`, `get_icon_name()`, `get_mnemonic_modifier()`, `get_mnemonics_visible()`, `get_modal()`, `get_opacity()`, `get_position()`, `get_resizable()`, `get_role()`, `get_screen()`, `get_size()`, `get_skip_pager_hint()`, `get_skip_taskbar_hint()`, `get_title()`, `get_transient_for()`, `get_type_hint()`, `get_urgency_hint()`, `get_window_type()`, `has_group()`, `has_toplevel_focus()`, `iconify()`, `is_active()`, `maximize()`, `mnemonic_activate()`, `move()`, `parse_geometry()`, `present()`, `present_with_time()`, `propagate_key_event()`, `remove_accel_group()`, `remove_mnemonic()`, `reshow_with_initial_size()`, `resize()`, `set_accept_focus()`, `set_decorated()`, `set_default()`, `set_default_size()`, `set_deletable()`, `set_destroy_with_parent()`, `set_focus()`, `set_focus_on_map()`, `set_frame_dimensions()`, `set_geometry_hints()`, `set_gravity()`, `set_has_frame()`, `set_icon()`, `set_icon_from_file()`, `set_icon_list()`, `set_icon_name()`, `set_keep_above()`, `set_keep_below()`, `set_mnemonic_modifier()`, `set_mnemonics_visible()`, `set_modal()`, `set_opacity()`, `set_policy()`, `set_position()`, `set_resizable()`, `set_role()`, `set_screen()`, `set_skip_pager_hint()`, `set_skip_taskbar_hint()`, `set_startup_id()`, `set_title()`, `set_transient_for()`, `set_type_hint()`, `set_urgency_hint()`, `set_wmclass()`, `stick()`, `tooltips_get_info_from_tip_window()`, `unfullscreen()`, `unmaximize()`, `unstick()`

Inherited from gtk.Bin

`get_child()`

Inherited from gtk.Container

`_len_()`, `_nonzero_()`, `add()`, `add_with_properties()`, `check_resize()`, `child_get()`, `child_get_property()`, `child_set()`, `child_set_property()`, `child_type()`, `children()`, `do_add()`, `do_check_resize()`, `do_child_type()`, `do_composite_name()`, `do_forall()`, `do_get_child_property()`, `do_remove()`, `do_set_child_property()`, `do_set_focus_child()`, `forall()`, `foreach()`, `get_border_width()`,

`get_children()`, `get_focus_chain()`, `get_focus_child()`, `get_focus_hadjustment()`, `get_focus_vadjustment()`,
`get_resize_mode()`, `install_child_property()`, `list_child_properties()`, `propagate_expose()`,
`remove()`, `resize_children()`, `set_border_width()`, `set_focus_chain()`, `set_focus_child()`,
`set_focus_hadjustment()`, `set_focus_vadjustment()`, `set_reallocate_redraws()`, `set_resize_mode()`,
`unset_focus_chain()`

Inherited from `gtk.Widget`

`activate()`, `add_accelerator()`, `add_events()`, `add_mnemonic_label()`, `can_activate_accel()`,
`child_focus()`, `child_notify()`, `class_path()`, `create_pango_context()`, `create_pango_layout()`,
`destroy()`, `do_button_press_event()`, `do_button_release_event()`, `do_can_activate_accel()`,
`do_client_event()`, `do_composited_changed()`, `do_configure_event()`, `do_delete_event()`,
`do_destroy_event()`, `do_direction_changed()`, `do_drag_begin()`, `do_drag_data_delete()`,
`do_drag_data_get()`, `do_drag_data_received()`, `do_drag_drop()`, `do_drag_end()`, `do_drag_leave()`,
`do_drag_motion()`, `do_enter_notify_event()`, `do_event()`, `do_expose_event()`, `do_focus()`,
`do_focus_in_event()`, `do_focus_out_event()`, `do_get_accessible()`, `do_grab_broken_event()`,
`do_grab_focus()`, `do_grab_notify()`, `do_hide()`, `do_hide_all()`, `do_hierarchy_changed()`,
`do_key_press_event()`, `do_key_release_event()`, `do_leave_notify_event()`, `do_map()`, `do_map_event()`,
`do_mnemonic_activate()`, `do_motion_notify_event()`, `do_no_expose_event()`, `do_parent_set()`,
`do_popup_menu()`, `do_property_notify_event()`, `do_proximity_in_event()`, `do_proximity_out_event()`,
`do_realize()`, `do_screen_changed()`, `do_scroll_event()`, `do_selection_clear_event()`, `do_selection_get()`,
`do_selection_notify_event()`, `do_selection_received()`, `do_selection_request_event()`, `do_show()`,
`do_show_all()`, `do_show_help()`, `do_size_allocate()`, `do_size_request()`, `do_state_changed()`,
`do_style_set()`, `do_unmap()`, `do_unmap_event()`, `do_unrealize()`, `do_visibility_notify_event()`,
`do_window_state_event()`, `drag_begin()`, `drag_check_threshold()`, `drag_dest_add_image_targets()`,
`drag_dest_add_text_targets()`, `drag_dest_add_uri_targets()`, `drag_dest_find_target()`,
`drag_dest_get_target_list()`, `drag_dest_get_track_motion()`, `drag_dest_set()`, `drag_dest_set_proxy()`,
`drag_dest_set_target_list()`, `drag_dest_set_track_motion()`, `drag_dest_unset()`, `drag_get_data()`,
`drag_highlight()`, `drag_source_add_image_targets()`, `drag_source_add_text_targets()`,
`drag_source_add_uri_targets()`, `drag_source_get_target_list()`, `drag_source_set()`, `drag_source_set_icon()`,
`drag_source_set_icon_name()`, `drag_source_set_icon_pixmap()`, `drag_source_set_icon_stock()`,
`drag_source_set_target_list()`, `drag_source_unset()`, `drag_unhighlight()`, `draw()`, `en-`
`sure_style()`, `error_bell()`, `event()`, `freeze_child_notify()`, `get_accessible()`, `get_action()`,
`get_activate_signal()`, `get_allocation()`, `get_ancestor()`, `get_app_paintable()`, `get_can_default()`,
`get_can_focus()`, `get_child_requisition()`, `get_child_visible()`, `get_clipboard()`, `get_colormap()`,
`get_composite_name()`, `get_direction()`, `get_display()`, `get_double_buffered()`, `get_events()`,
`get_extension_events()`, `get_has_tooltip()`, `get_has_window()`, `get_mapped()`, `get_modifier_style()`,
`get_name()`, `get_no_show_all()`, `get_pango_context()`, `get_parent()`, `get_parent_window()`,
`get_pointer()`, `get_realized()`, `get_receives_default()`, `get_requisition()`, `get_root_window()`,
`get_sensitive()`, `get_settings()`, `get_size_request()`, `get_snapshot()`, `get_state()`, `get_style()`,
`get_tooltip_markup()`, `get_tooltip_text()`, `get_tooltip_window()`, `get_toplevel()`, `get_visible()`,
`get_visual()`, `get_window()`, `grab_add()`, `grab_default()`, `grab_focus()`, `grab_remove()`,
`has_default()`, `has_grab()`, `has_rc_style()`, `has_screen()`, `hide()`, `hide_all()`, `hide_on_delete()`,
`input_shape_combine_mask()`, `intersect()`, `is_ancestor()`, `is_composited()`, `is_drawable()`,
`is_focus()`, `is_sensitive()`, `is_toplevel()`, `keynav_failed()`, `list_accel_closures()`, `list_mnemonic_labels()`,

map(), menu_get_for_attach_widget(), modify_base(), modify_bg(), modify_cursor(),
 modify_fg(), modify_font(), modify_style(), modify_text(), path(), queue_clear(),
 queue_clear_area(), queue_draw(), queue_draw_area(), queue_resize(), queue_resize_no_redraw(),
 rc_get_style(), realize(), region_intersect(), remove_accelerator(), remove_mnemonic_label(),
 render_icon(), reparent(), reset_rc_styles(), reset_shapes(), selection_add_target(),
 selection_add_targets(), selection_clear_targets(), selection_convert(), selection_owner_set(),
 selection_remove_all(), send_expose(), send_focus_change(), set_accel_path(), set_activate_signal(),
 set_allocation(), set_app_paintable(), set_can_default(), set_can_focus(), set_child_visible(),
 set_colormap(), set_composite_name(), set_direction(), set_double_buffered(), set_events(),
 set_extension_events(), set_has_tooltip(), set_has_window(), set_mapped(), set_name(),
 set_no_show_all(), set_parent(), set_parent_window(), set_realized(), set_receives_default(),
 set_redraw_on_allocate(), set_scroll_adjustments(), set_sensitive(), set_set_scroll_adjustments_signal(),
 set_size_request(), set_state(), set_style(), set_tooltip_markup(), set_tooltip_text(),
 set_tooltip_window(), set_uposition(), set_usize(), set_visible(), set_window(), shape_combine_mask(),
 show(), show_all(), show_now(), size_allocate(), size_request(), style_attach(), style_get_property(),
 thaw_child_notify(), translate_coordinates(), trigger_tooltip_query(), unmap(), un-
 parent(), unrealize()

Inherited from gtk.Object

do_destroy(), flags(), remove_data(), remove_no_notify(), set_flags(), unset_flags()

Inherited from ??GObject

__copy__(), __deepcopy__(), __delattr__(), __eq__(), __gdoc__(), __ge__(), __gobject_init__(),
 __gt__(), __hash__(), __le__(), __lt__(), __ne__(), __new__(), __repr__(), __setattr__(),
 chain(), connect(), connect_after(), connect_object(), connect_object_after(), dis-
 connect(), disconnect_by_func(), emit(), emit_stop_by_name(), freeze_notify(), get_data(),
 get_properties(), get_property(), handler_block(), handler_block_by_func(), handler_disconnect(),
 handler_is_connected(), handler_unblock(), handler_unblock_by_func(), notify(), props(),
 set_data(), set_properties(), set_property(), stop_emission(), thaw_notify(), weak_ref()

Inherited from atk.ImplementorIface

ref_accessible()

Inherited from gtk.Buildable

add_child(), construct_child(), do_add_child(), do_construct_child(), do_get_internal_child(),
 do_parser_finished(), do_set_name(), get_internal_child(), parser_finished()

Inherited from object

__format__(), __getattr__(), __reduce__(), __reduce_ex__(), __sizeof__(), __str__(),
 __subclasshook__()

119.2 Properties

Name	Description
<i>Inherited from gtk.Dialog</i>	action_area, vbox
<i>Inherited from gtk.Window</i>	allow_grow, allow_shrink, configure_notify_received, configure_request_count, decorated, default_widget, destroy_with_parent, focus_widget, frame, frame_bottom, frame_left, frame_right, frame_top, gravity, group, has_focus, has_frame, has_user_ref_count, iconify_initially, keys_changed_handler, maximize_initially, mnemonic_modifier, modal, need_default_position, need_default_size, position, stick_initially, title, transient_parent, type, type_hint, wm_role, wmclass_class, wmclass_name
<i>Inherited from gtk.Bin</i>	child
<i>Inherited from gtk.Container</i>	border_width, focus_child, has_focus_chain, need_resize, reallocate_redraws, resize_mode
<i>Inherited from gtk.Widget</i>	allocation, name, parent, requisition, saved_state, state, style, window
<i>Inherited from ??GObject</i>	__grefcount__
<i>Inherited from object</i>	__class__

119.3 Class Variables

Name	Description
<i>Inherited from gtk.Dialog</i>	--gtype--

120 Class `reliafree.main.ReliaFree`

This is the ReliaFree class.

120.1 Methods

<code>__init__(<i>self</i>)</code>

<code>read_configuration(<i>self</i>)</code>
--

This method reads the site and user configuration files to establish settings for The ReliaFree application.
--

<code>load_system(<i>self</i>)</code>

This method loads the ReliaFree development program database the user opens.
--

121 Class **reliafree.meters.meter.ElapsedTime**

Elapsed Time Meter Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, sections 12.3.

121.1 Methods

`--init--(self)`

Initializes the Elapsed Time Meter Component Class.

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Elapsed Time Meter Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Elapsed Time Meter Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

`load_reliability_inputs(self, part)`

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

`load_reliability_outputs(self, part)`

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

combo_callback(*self, combo, part, _index_*)

Callback function for handling Elapsed Time Meter Component Class ComboBox changes.

Keyword Arguments: *combo* – the combobox widget calling this function.
part – the ReliaFree COMPONENT object. *_index_* – the user-defined index for the calling combobox.

entry_callback(*self, entry, event, part, convert, _index_*)

Callback function for handling Elapsed Time Meter Component Class Entry changes.

Keyword Arguments:

entry -- the entry widget calling this function.
event -- the event that triggered calling this function.
part -- the ReliaFree COMPONENT object.
convert -- the data type to convert the entry contents to.
index -- the position in the Component property array
associated with the data from the entry that called
this function.

calculate_mil_217_count(*self, part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Elapsed Time Meter Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self, part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Elapsed Time Meter Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

122 Class *reliafree.meters.meter.Panel*

Panel Meter Component Class. Covers specifications MIL-M-10304.

Hazard Rate Models:

1. MIL-HDBK-217F, sections 18.1.

122.1 Methods

`--init--(self)`

Initializes the Panel Meter Component Class.

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Panel Meter Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Panel Meter Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

`load_reliability_inputs(self, part)`

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

`load_reliability_outputs(self, part)`

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

combo_callback(*self, combo, part, _index_*)

Callback function for handling Panel Meter Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.
 part -- the ReliaFree COMPONENT object.
 index -- the user-defined index for the calling combobox.

entry_callback(*self, entry, event, part, convert, _index_*)

Callback function for handling Panel Meter Component Class Entry changes.

Keyword Arguments:

entry -- the entry widget calling this function.
 event -- the event that triggered calling this function.
 part -- the ReliaFree COMPONENT object.
 convert -- the data type to convert the entry contents to.
 index -- the position in the Component property array
 associated with the data from the entry that called
 this function.

calculate_mil_217_count(*self, part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Panel Meter Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self, part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Panel Meter Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

123 Class *reliafree.miscellaneous.crystal.Crystal*

Crystal meta class. Covers specifications MIL-C-3098.

Hazard Rate Models:

1. MIL-HDBK-217F, section 19.1.

123.1 Methods

`--init--(self)`

Initializes the Crystal Component Class.

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Crystal Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Crystal Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

`load_reliability_inputs(self, part)`

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

`load_reliability_outputs(self, part)`

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

combo_callback(*self, combo, part, _index_*)

Callback function for handling Crystal Component Class ComboBox changes.

Keyword Arguments: *combo* – the combobox widget calling this function.
part – the ReliaFree COMPONENT object. *_index_* – the user-defined index for the calling combobox.

entry_callback(*self, entry, event, part, convert, _index_*)

Callback function for handling Crystal Component Class Entry changes.

Keyword Arguments:

entry -- the entry widget calling this function.
event -- the event that triggered calling this function.
part -- the ReliaFree COMPONENT object.
convert -- the data type to convert the entry contents to.
index -- the position in the Component property array
 associated with the data from the entry that called
 this function.

calculate_mil_217_count(*self, part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Crystal Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self, part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Crystal Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

124 Class `reliafree.miscellaneous.filter.Filter`

Filter Component Class. Covers specifications MIL-F-15733 and MIL-F-18327.

Hazard Rate Models:

1. MIL-HDBK-217F, section 21.1

124.1 Methods

`--init--(self)`

Initializes the Filter Component Class.

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Lamp Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Lamp Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

`load_reliability_inputs(self, part)`

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

`load_reliability_outputs(self, part)`

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

combo_callback(*self, combo, part, _index_*)

Callback function for handling Lamp Component Class ComboBox changes.

Keyword Arguments: *combo* – the combobox widget calling this function.
part – the ReliaFree COMPONENT object. *_index_* – the user-defined index for the calling combobox.

entry_callback(*self, entry, event, part, convert, _index_*)

Callback function for handling Crystal Component Class Entry changes.

Keyword Arguments:

entry -- the entry widget calling this function.
event -- the event that triggered calling this function.
part -- the ReliaFree COMPONENT object.
convert -- the data type to convert the entry contents to.
index -- the position in the Component property array
associated with the data from the entry that called
this function.

calculate_mil_217_count(*self, part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Lamp Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self, part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Lamp Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

125 Class *reliafree.miscellaneous.fuse.Fuse*

Fuse Component Class. Covers specifications MIL-F-5372, MIL-F-23419, MIL-F-15160, W-F-1726, and W-F-1814.

Hazard Rate Models:

1. MIL-HDBK-217F, section 22.1

125.1 Methods

`__init__(self)`

Initializes the Fuse Component Class.

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Fuse Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Fuse Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

`load_reliability_inputs(self, part)`

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

`load_reliability_outputs(self, part)`

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Fuse Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fuse Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

126 Class *reliafree.miscellaneous.lamp.Lamp*

Lamp Component Class. Covers specifications MIL-L-6363 and W-L-111.

Hazard Rate Models:

1. MIL-HDBK-217F, section 20.1

126.1 Methods

`--init--(self)`

Initializes the Lamp Component Class.

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Lamp Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Lamp Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

`load_reliability_inputs(self, part)`

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

`load_reliability_outputs(self, part)`

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

combo_callback(*self, combo, part, _index_*)

Callback function for handling Lamp Component Class ComboBox changes.

Keyword Arguments: *combo* – the combobox widget calling this function.
part – the ReliaFree COMPONENT object. *_index_* – the user-defined index for the calling combobox.

entry_callback(*self, entry, event, part, convert, _index_*)

Callback function for handling Crystal Component Class Entry changes.

Keyword Arguments:

entry -- the entry widget calling this function.
event -- the event that triggered calling this function.
part -- the ReliaFree COMPONENT object.
convert -- the data type to convert the entry contents to.
index -- the position in the Component property array
associated with the data from the entry that called
this function.

calculate_mil_217_count(*self, part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Lamp Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self, part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Lamp Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

127 Class *reliafree.mysql.MySQLInterface*

127.1 Methods

`__init__(self)`

`get_supported_schemes(self)`

`get_connection(self, mysql_info)`

Opens a connections to a database.

Keyword Arguments:

`mysql_info` -- list containing MySQL login information.

[0] - MySQL host

[1] - MySQL port

[2] - MySQL database

[3] - MySQL user

[4] - MySQL user password

`get_cursor(self, cnx)`

Retrieves a cursor from the open database.

Keyword Arguments: `cnx` – an open connection.

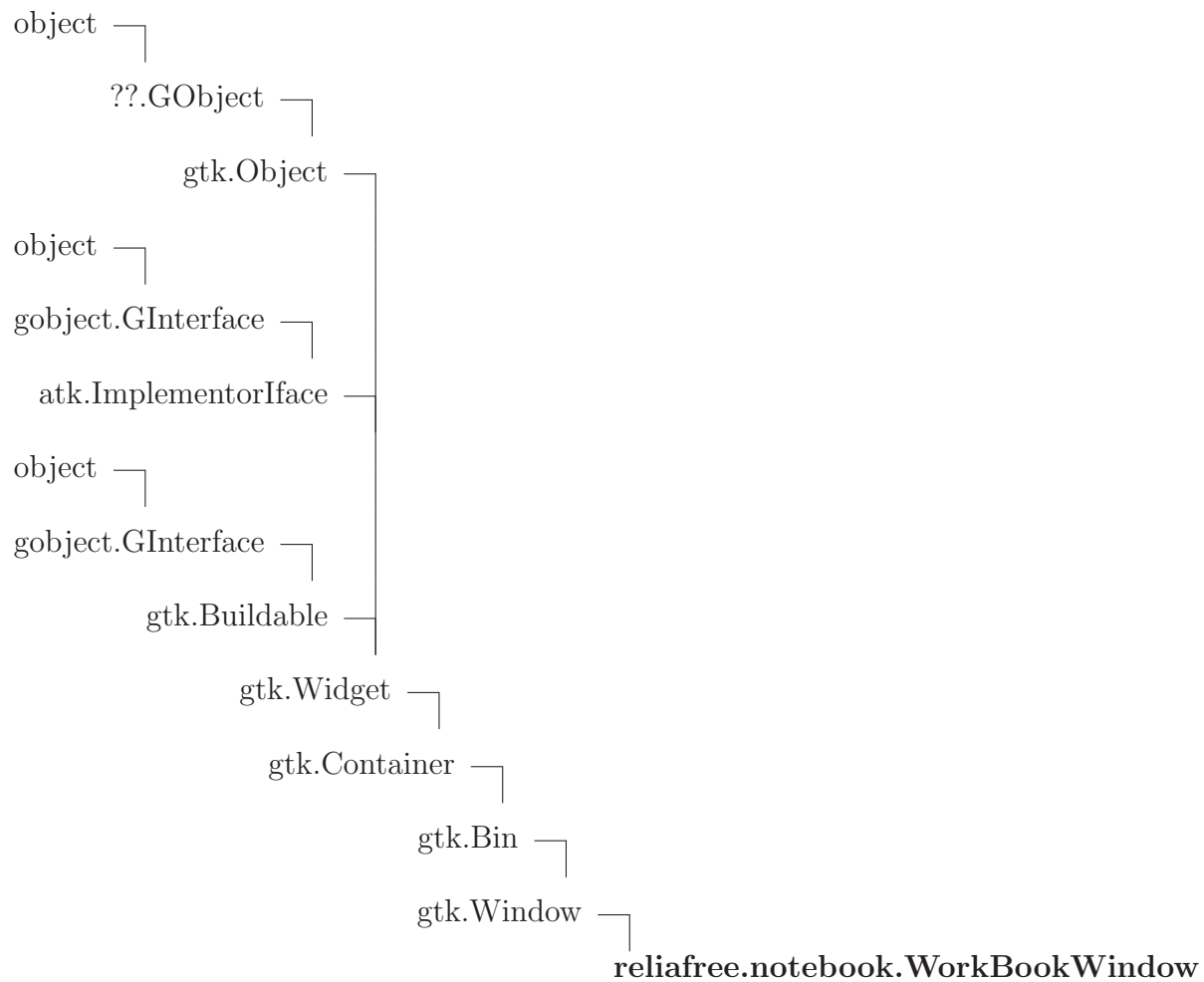
`init_db(self, path, params={})`

`execute_query(self, query, cnx, commit=False)`

Executes a query on the MySQL database and returns the results.

Keyword Arguments: `query` – the query to execute. `cnx` – the connection to use when executing the query. `commit` – whether or not to commit the results.

128 Class **reliafree.notebook.WorkBookWindow**



The **WorkBookWindow** class is the **NoteBook** window used to display information about selected Revisions, Requirements, Functions, Hardware, Verification and Validation (V&V) Tasks, Reliability Growth Testing incidents, and field incidents.

128.1 Methods

__init__(self, application)

Initializes the **WorkBook** Class.

Keyword Arguments: **application** – the **ReliaFree** application.

Overrides: **object.__init__**

load_notebook(*self*, *_index_*)

Loads all of the tabs in the Work Book with the data from the selected Revision, Function, Assembly, or Component.

Keyword Arguments:

index -- the index of the treeview in the Tree Book that was clicked to call this function.
 0 = Revision Tree
 1 = Function Tree
 2 = Requirements Tree
 3 = Hardware Tree
 4 = Validation Tree
 5 = Reliability Growth Test Tree
 6 = Field Incidents Tree
 7 = Parts List

page_switched(*self*, *notebook*, *page*, *page_num*)

Called whenever a page in the WorkBook is switched. Used to keep track of which page is active so it can remain active when the user selects a new Revision, Function, Assembly, or Component.

Keyword Arguments: *notebook* – the WorkBook Notebook widget. *page* – the newly selected Notebook page widget. *page_num* – the index of the newly selected Notebook page widget.

Inherited from gtk.Window

iter(), *activate_default*(), *activate_focus*(), *activate_key*(), *add_accel_group*(), *add_mnemonic*(), *begin_move_drag*(), *begin_resize_drag*(), *deiconify*(), *do_activate_default*(), *do_activate_focus*(), *do_frame_event*(), *do_keys_changed*(), *do_move_focus*(), *do_set_focus*(), *fullscreen*(), *get_accept_focus*(), *get_decorated*(), *get_default_size*(), *get_default_widget*(), *get_deletable*(), *get_destroy_with_parent*(), *get_focus*(), *get_focus_on_map*(), *get_frame_dimensions*(), *get_gravity*(), *get_group*(), *get_has_frame*(), *get_icon*(), *get_icon_list*(), *get_icon_name*(), *get_mnemonic_modifier*(), *get_mnemonics_visible*(), *get_modal*(), *get_opacity*(), *get_position*(), *get_resizable*(), *get_role*(), *get_screen*(), *get_size*(), *get_skip_pager_hint*(), *get_skip_taskbar_hint*(), *get_title*(), *get_transient_for*(), *get_type_hint*(), *get_urgency_hint*(), *get_window_type*(), *has_group*(), *has_toplevel_focus*(), *iconify*(), *is_active*(), *maximize*(), *mnemonic_activate*(), *move*(), *parse_geometry*(), *present*(), *present_with_time*(), *propagate_key_event*(), *remove_accel_group*(), *remove_mnemonic*(), *reshow_with_initial_size*(), *resize*(), *set_accept_focus*(), *set_decorated*(), *set_default*(), *set_default_size*(), *set_deletable*(), *set_destroy_with_parent*(), *set_focus*(), *set_focus_on_map*(), *set_frame_dimensions*(), *set_geometry_hints*(), *set_gravity*(), *set_has_frame*(), *set_icon*(), *set_icon_from_file*(), *set_icon_list*(), *set_icon_name*(), *set_keep_above*(), *set_keep_below*(), *set_mnemonic_modifier*(), *set_mnemonics_visible*(), *set_modal*(),

set_opacity(), set_policy(), set_position(), set_resizable(), set_role(), set_screen(),
 set_skip_pager_hint(), set_skip_taskbar_hint(), set_startup_id(), set_title(), set_transient_for(),
 set_type_hint(), set_urgency_hint(), set_wmclass(), stick(), tooltips_get_info_from_tip_window(),
 unfullscreen(), unmaximize(), unstick()

Inherited from gtk.Bin

get_child()

Inherited from gtk.Container

len(), _nonzero_(), add(), add_with_properties(), check_resize(), child_get(),
 child_get_property(), child_set(), child_set_property(), child_type(), children(), do_add(),
 do_check_resize(), do_child_type(), do_composite_name(), do_forall(), do_get_child_property(),
 do_remove(), do_set_child_property(), do_set_focus_child(), forall(), foreach(), get_border_width(),
 get_children(), get_focus_chain(), get_focus_child(), get_focus_hadjustment(), get_focus_vadjustment(),
 get_resize_mode(), install_child_property(), list_child_properties(), propagate_expose(),
 remove(), resize_children(), set_border_width(), set_focus_chain(), set_focus_child(),
 set_focus_hadjustment(), set_focus_vadjustment(), set_reallocate_redraws(), set_resize_mode(),
 unset_focus_chain()

Inherited from gtk.Widget

activate(), add_accelerator(), add_events(), add_mnemonic_label(), can_activate_accel(),
 child_focus(), child_notify(), class_path(), create_pango_context(), create_pango_layout(),
 destroy(), do_button_press_event(), do_button_release_event(), do_can_activate_accel(),
 do_client_event(), do_composited_changed(), do_configure_event(), do_delete_event(),
 do_destroy_event(), do_direction_changed(), do_drag_begin(), do_drag_data_delete(),
 do_drag_data_get(), do_drag_data_received(), do_drag_drop(), do_drag_end(), do_drag_leave(),
 do_drag_motion(), do_enter_notify_event(), do_event(), do_expose_event(), do_focus(),
 do_focus_in_event(), do_focus_out_event(), do_get_accessible(), do_grab_broken_event(),
 do_grab_focus(), do_grab_notify(), do_hide(), do_hide_all(), do_hierarchy_changed(),
 do_key_press_event(), do_key_release_event(), do_leave_notify_event(), do_map(), do_map_event(),
 do_mnemonic_activate(), do_motion_notify_event(), do_no_expose_event(), do_parent_set(),
 do_popup_menu(), do_property_notify_event(), do_proximity_in_event(), do_proximity_out_event(),
 do_realize(), do_screen_changed(), do_scroll_event(), do_selection_clear_event(), do_selection_get(),
 do_selection_notify_event(), do_selection_received(), do_selection_request_event(), do_show(),
 do_show_all(), do_show_help(), do_size_allocate(), do_size_request(), do_state_changed(),
 do_style_set(), do_unmap(), do_unmap_event(), do_unrealize(), do_visibility_notify_event(),
 do_window_state_event(), drag_begin(), drag_check_threshold(), drag_dest_add_image_targets(),
 drag_dest_add_text_targets(), drag_dest_add_uri_targets(), drag_dest_find_target(),
 drag_dest_get_target_list(), drag_dest_get_track_motion(), drag_dest_set(), drag_dest_set_proxy(),
 drag_dest_set_target_list(), drag_dest_set_track_motion(), drag_dest_unset(), drag_get_data(),
 drag_highlight(), drag_source_add_image_targets(), drag_source_add_text_targets(),
 drag_source_add_uri_targets(), drag_source_get_target_list(), drag_source_set(), drag_source_set_icon(),
 drag_source_set_icon_name(), drag_source_set_icon_pixbuf(), drag_source_set_icon_stock(),

`drag_source_set_target_list()`, `drag_source_unset()`, `drag_unhighlight()`, `draw()`, `ensure_style()`, `error_bell()`, `event()`, `freeze_child_notify()`, `get_accessible()`, `get_action()`, `get_activate_signal()`, `get_allocation()`, `get_ancestor()`, `get_app_paintable()`, `get_can_default()`, `get_can_focus()`, `get_child_requisition()`, `get_child_visible()`, `get_clipboard()`, `get_colormap()`, `get_composite_name()`, `get_direction()`, `get_display()`, `get_double_buffered()`, `get_events()`, `get_extension_events()`, `get_has_tooltip()`, `get_has_window()`, `get_mapped()`, `get_modifier_style()`, `get_name()`, `get_no_show_all()`, `get_pango_context()`, `get_parent()`, `get_parent_window()`, `get_pointer()`, `get_realized()`, `get_receives_default()`, `get_requisition()`, `get_root_window()`, `get_sensitive()`, `get_settings()`, `get_size_request()`, `get_snapshot()`, `get_state()`, `get_style()`, `get_tooltip_markup()`, `get_tooltip_text()`, `get_tooltip_window()`, `get_toplevel()`, `get_visible()`, `get_visual()`, `get_window()`, `grab_add()`, `grab_default()`, `grab_focus()`, `grab_remove()`, `has_default()`, `has_grab()`, `has_rc_style()`, `has_screen()`, `hide()`, `hide_all()`, `hide_on_delete()`, `input_shape_combine_mask()`, `intersect()`, `is_ancestor()`, `is_composited()`, `is_drawable()`, `is_focus()`, `is_sensitive()`, `is_toplevel()`, `keynav_failed()`, `list_accel_closures()`, `list_mnemonic_labels()`, `map()`, `menu_get_for_attach_widget()`, `modify_base()`, `modify_bg()`, `modify_cursor()`, `modify_fg()`, `modify_font()`, `modify_style()`, `modify_text()`, `path()`, `queue_clear()`, `queue_clear_area()`, `queue_draw()`, `queue_draw_area()`, `queue_resize()`, `queue_resize_no_redraw()`, `rc_get_style()`, `realize()`, `region_intersect()`, `remove_accelerator()`, `remove_mnemonic_label()`, `render_icon()`, `reparent()`, `reset_rc_styles()`, `reset_shapes()`, `selection_add_target()`, `selection_add_targets()`, `selection_clear_targets()`, `selection_convert()`, `selection_owner_set()`, `selection_remove_all()`, `send_expose()`, `send_focus_change()`, `set_accel_path()`, `set_activate_signal()`, `set_allocation()`, `set_app_paintable()`, `set_can_default()`, `set_can_focus()`, `set_child_visible()`, `set_colormap()`, `set_composite_name()`, `set_direction()`, `set_double_buffered()`, `set_events()`, `set_extension_events()`, `set_has_tooltip()`, `set_has_window()`, `set_mapped()`, `set_name()`, `set_no_show_all()`, `set_parent()`, `set_parent_window()`, `set_realized()`, `set_receives_default()`, `set_redraw_on_allocate()`, `set_scroll_adjustments()`, `set_sensitive()`, `set_set_scroll_adjustments_signal()`, `set_size_request()`, `set_state()`, `set_style()`, `set_tooltip_markup()`, `set_tooltip_text()`, `set_tooltip_window()`, `set_uposition()`, `set_usize()`, `set_visible()`, `set_window()`, `shape_combine_mask()`, `show()`, `show_all()`, `show_now()`, `size_allocate()`, `size_request()`, `style_attach()`, `style_get_property()`, `thaw_child_notify()`, `translate_coordinates()`, `trigger_tooltip_query()`, `unmap()`, `unparent()`, `unrealize()`

Inherited from `gtk.Object`

`do_destroy()`, `flags()`, `remove_data()`, `remove_no_notify()`, `set_flags()`, `unset_flags()`

Inherited from `?.GObject`

`__copy__()`, `__deepcopy__()`, `__delattr__()`, `__eq__()`, `__gdoc__()`, `__ge__()`, `__gobject_init__()`, `__gt__()`, `__hash__()`, `__le__()`, `__lt__()`, `__ne__()`, `__new__()`, `__repr__()`, `__setattr__()`, `chain()`, `connect()`, `connect_after()`, `connect_object()`, `connect_object_after()`, `disconnect()`, `disconnect_by_func()`, `emit()`, `emit_stop_by_name()`, `freeze_notify()`, `get_data()`, `get_properties()`, `get_property()`, `handler_block()`, `handler_block_by_func()`, `handler_disconnect()`, `handler_is_connected()`, `handler_unblock()`, `handler_unblock_by_func()`, `notify()`, `props()`, `set_data()`, `set_properties()`, `set_property()`, `stop_emission()`, `thaw_notify()`, `weak_ref()`

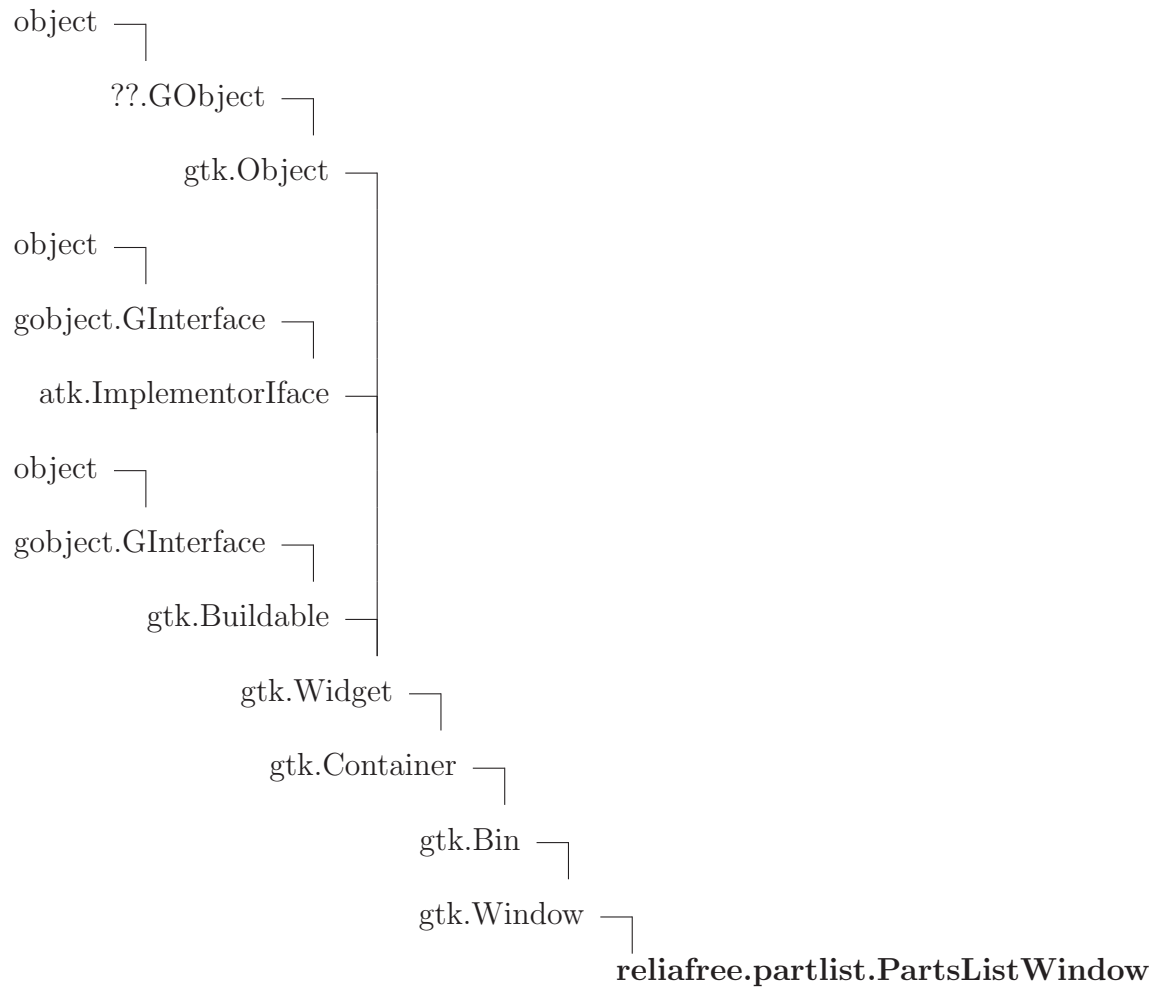
Inherited from `atk.ImplementorIface``ref_accessible()`***Inherited from `gtk.Buildable`***`add_child()`, `construct_child()`, `do_add_child()`, `do_construct_child()`, `do_get_internal_child()`, `do_parser_finished()`, `do_set_name()`, `get_internal_child()`, `parser_finished()`***Inherited from `object`***`__format__()`, `__getattr__()`, `__reduce__()`, `__reduce_ex__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`**128.2 Properties**

Name	Description
<i>Inherited from <code>gtk.Window</code></i>	<code>allow_grow</code> , <code>allow_shrink</code> , <code>configure_notify_received</code> , <code>configure_request_count</code> , <code>decorated</code> , <code>default_widget</code> , <code>destroy_with_parent</code> , <code>focus_widget</code> , <code>frame</code> , <code>frame_bottom</code> , <code>frame_left</code> , <code>frame_right</code> , <code>frame_top</code> , <code>gravity</code> , <code>group</code> , <code>has_focus</code> , <code>has_frame</code> , <code>has_user_ref_count</code> , <code>iconify_initially</code> , <code>keys_changed_handler</code> , <code>maximize_initially</code> , <code>mnemonic_modifier</code> , <code>modal</code> , <code>need_default_position</code> , <code>need_default_size</code> , <code>position</code> , <code>stick_initially</code> , <code>title</code> , <code>transient_parent</code> , <code>type</code> , <code>type_hint</code> , <code>wm_role</code> , <code>wmclass_class</code> , <code>wmclass_name</code>
<i>Inherited from <code>gtk.Bin</code></i>	<code>child</code>
<i>Inherited from <code>gtk.Container</code></i>	<code>border_width</code> , <code>focus_child</code> , <code>has_focus_chain</code> , <code>need_resize</code> , <code>reallocate_redraws</code> , <code>resize_mode</code>
<i>Inherited from <code>gtk.Widget</code></i>	<code>allocation</code> , <code>name</code> , <code>parent</code> , <code>requisition</code> , <code>saved_state</code> , <code>state</code> , <code>style</code> , <code>window</code>
<i>Inherited from <code>??GObject</code></i>	<code>__grefcount__</code>
<i>Inherited from <code>object</code></i>	<code>__class__</code>

128.3 Class Variables

Name	Description
<i>Inherited from <code>gtk.Window</code></i>	<code>__gtype__</code>

129 Class `reliafree.partlist.PartsListWindow`



This class is the windows containing the parts associated with the selected Revision, Function, or Assembly in the upper window.

129.1 Methods

`__init__(self, application)`

Initializes the PartsList Object.

Keyword Arguments: `application` – the ReliaFree application.

Overrides: `object.__init__`

`create_toolbar(self)`

Creates the toolbar for the PartsList.

`load_tree(self, query)`

Populates the part list treeview with the parts associated with the currently selected Revision, Function, or Assembly.

Keyword Arguments:

`query` -- the MySQL query to execute to retrieve the list of parts associated with the calling Revision, Function, or Assembly.

`find_hardware_tree_row(self, model, path_, row)`

Finds the corresponding row in the Hardware TreeView and sets that Hardware TreeView row active. Called whenever the Parts List is clicked or row is activated.

Keyword Arguments:

`model` -- the HARDWARE object tree model.

`path_` -- the path of the row activated in the Hardware Object TreeModel.

`row` -- the row activated in the HARDWARE object tree model.

`get_function_parts(self, model, row, parts)`

Filters the Parts List TreeView to show only the components associated with the currently selected Function Object.

Keyword Arguments: `model` – the Parts List filtered model. `row` – the row in the filtered model. `parts` – the list of part assembly ids.

`get_assembly_parts(self, model, row, parts)`

Filters the Parts List TreeView to show only the components associated with the currently selected Assembly Object.

Keyword Arguments: `model` – the Parts List filtered model. `row` – the row in the filtered model. `parts` – the list of part assembly ids.

save_component(*self*)

Saves the Hardware Tree information to the project's MySQL database.

save_line_item(*self*, *model*, *path_*, *row*)

Called for each row in the PartsList Object TreeView when the TreeView data is saved.

Keyword Arguments: *model* – the Parts List object tree model. *path_* – the treeview path of the active row. *row* – the active row.

load_workbook(*self*)

Loads the PartsList TreeView row information into the WorkBook widgets.

filter_parts_list(*self*, *_index_*)

Filters the PartsList TreeView to include only those parts associated with the currently selected Revision, Function, or Assembly

Keyword Arguments:

index – the index of the TreeView that was clicked.

- 0 = Revision Tree
- 1 = Function Tree
- 2 = Requirements Tree
- 3 = Hardware Tree
- 4 = Validation Tree
- 5 = Reliability Growth Test Tree
- 6 = Field Incidents Tree
- 7 = Parts List

Inherited from gtk.Window

iter(), *activate_default*(), *activate_focus*(), *activate_key*(), *add_accel_group*(), *add_mnemonic*(), *begin_move_drag*(), *begin_resize_drag*(), *deiconify*(), *do_activate_default*(), *do_activate_focus*(), *do_frame_event*(), *do_keys_changed*(), *do_move_focus*(), *do_set_focus*(), *fullscreen*(), *get_accept_focus*(), *get_decorated*(), *get_default_size*(), *get_default_widget*(), *get_deletable*(), *get_destroy_with_parent*(), *get_focus*(), *get_focus_on_map*(), *get_frame_dimensions*(), *get_gravity*(), *get_group*(), *get_has_frame*(), *get_icon*(), *get_icon_list*(), *get_icon_name*(), *get_mnemonic_modifier*(), *get_mnemonics_visible*(), *get_modal*(), *get_opacity*(), *get_position*(), *get_resizable*(), *get_role*(), *get_screen*(), *get_size*(), *get_skip_pager_hint*(), *get_skip_taskbar_hint*(), *get_title*(), *get_transient_for*(), *get_type_hint*(), *get_urgency_hint*(), *get_window_type*(), *has_group*(), *has_toplevel_focus*(), *iconify*(), *is_active*(), *maximize*(), *mnemonic_activate*(), *move*(), *parse_geometry*(), *present*(), *present_with_time*(), *propagate_key_event*(),

`remove_accel_group()`, `remove_mnemonic()`, `reshow_with_initial_size()`, `resize()`, `set_accept_focus()`,
`set_decorated()`, `set_default()`, `set_default_size()`, `set_deletable()`, `set_destroy_with_parent()`,
`set_focus()`, `set_focus_on_map()`, `set_frame_dimensions()`, `set_geometry_hints()`, `set_gravity()`,
`set_has_frame()`, `set_icon()`, `set_icon_from_file()`, `set_icon_list()`, `set_icon_name()`, `set_keep_above()`,
`set_keep_below()`, `set_mnemonic_modifier()`, `set_mnemonics_visible()`, `set_modal()`,
`set_opacity()`, `set_policy()`, `set_position()`, `set_resizable()`, `set_role()`, `set_screen()`,
`set_skip_pager_hint()`, `set_skip_taskbar_hint()`, `set_startup_id()`, `set_title()`, `set_transient_for()`,
`set_type_hint()`, `set_urgency_hint()`, `set_wmclass()`, `stick()`, `tooltips_get_info_from_tip_window()`,
`unfullscreen()`, `unmaximize()`, `unstick()`

Inherited from `gtk.Bin`

`get_child()`

Inherited from `gtk.Container`

`_len_()`, `_nonzero_()`, `add()`, `add_with_properties()`, `check_resize()`, `child_get()`,
`child_get_property()`, `child_set()`, `child_set_property()`, `child_type()`, `children()`, `do_add()`,
`do_check_resize()`, `do_child_type()`, `do_composite_name()`, `do_forall()`, `do_get_child_property()`,
`do_remove()`, `do_set_child_property()`, `do_set_focus_child()`, `forall()`, `foreach()`, `get_border_width()`,
`get_children()`, `get_focus_chain()`, `get_focus_child()`, `get_focus_hadjustment()`, `get_focus_vadjustment()`,
`get_resize_mode()`, `install_child_property()`, `list_child_properties()`, `propagate_expose()`,
`remove()`, `resize_children()`, `set_border_width()`, `set_focus_chain()`, `set_focus_child()`,
`set_focus_hadjustment()`, `set_focus_vadjustment()`, `set_reallocate_redraws()`, `set_resize_mode()`,
`unset_focus_chain()`

Inherited from `gtk.Widget`

`activate()`, `add_accelerator()`, `add_events()`, `add_mnemonic_label()`, `can_activate_accel()`,
`child_focus()`, `child_notify()`, `class_path()`, `create_pango_context()`, `create_pango_layout()`,
`destroy()`, `do_button_press_event()`, `do_button_release_event()`, `do_can_activate_accel()`,
`do_client_event()`, `do_composited_changed()`, `do_configure_event()`, `do_delete_event()`,
`do_destroy_event()`, `do_direction_changed()`, `do_drag_begin()`, `do_drag_data_delete()`,
`do_drag_data_get()`, `do_drag_data_received()`, `do_drag_drop()`, `do_drag_end()`, `do_drag_leave()`,
`do_drag_motion()`, `do_enter_notify_event()`, `do_event()`, `do_expose_event()`, `do_focus()`,
`do_focus_in_event()`, `do_focus_out_event()`, `do_get_accessible()`, `do_grab_broken_event()`,
`do_grab_focus()`, `do_grab_notify()`, `do_hide()`, `do_hide_all()`, `do_hierarchy_changed()`,
`do_key_press_event()`, `do_key_release_event()`, `do_leave_notify_event()`, `do_map()`, `do_map_event()`,
`do_mnemonic_activate()`, `do_motion_notify_event()`, `do_no_expose_event()`, `do_parent_set()`,
`do_popup_menu()`, `do_property_notify_event()`, `do_proximity_in_event()`, `do_proximity_out_event()`,
`do_realize()`, `do_screen_changed()`, `do_scroll_event()`, `do_selection_clear_event()`, `do_selection_get()`,
`do_selection_notify_event()`, `do_selection_received()`, `do_selection_request_event()`, `do_show()`,
`do_show_all()`, `do_show_help()`, `do_size_allocate()`, `do_size_request()`, `do_state_changed()`,
`do_style_set()`, `do_unmap()`, `do_unmap_event()`, `do_unrealize()`, `do_visibility_notify_event()`,
`do_window_state_event()`, `drag_begin()`, `drag_check_threshold()`, `drag_dest_add_image_targets()`,
`drag_dest_add_text_targets()`, `drag_dest_add_uri_targets()`, `drag_dest_find_target()`,

`drag_dest_get_target_list()`, `drag_dest_get_track_motion()`, `drag_dest_set()`, `drag_dest_set_proxy()`,
`drag_dest_set_target_list()`, `drag_dest_set_track_motion()`, `drag_dest_unset()`, `drag_get_data()`,
`drag_highlight()`, `drag_source_add_image_targets()`, `drag_source_add_text_targets()`,
`drag_source_add_uri_targets()`, `drag_source_get_target_list()`, `drag_source_set()`, `drag_source_set_icon()`,
`drag_source_set_icon_name()`, `drag_source_set_icon_pixbuf()`, `drag_source_set_icon_stock()`,
`drag_source_set_target_list()`, `drag_source_unset()`, `drag_unhighlight()`, `draw()`, `en-`
`sure_style()`, `error_bell()`, `event()`, `freeze_child_notify()`, `get_accessible()`, `get_action()`,
`get_activate_signal()`, `get_allocation()`, `get_ancestor()`, `get_app_paintable()`, `get_can_default()`,
`get_can_focus()`, `get_child_requisition()`, `get_child_visible()`, `get_clipboard()`, `get_colormap()`,
`get_composite_name()`, `get_direction()`, `get_display()`, `get_double_buffered()`, `get_events()`,
`get_extension_events()`, `get_has_tooltip()`, `get_has_window()`, `get_mapped()`, `get_modifier_style()`,
`get_name()`, `get_no_show_all()`, `get_pango_context()`, `get_parent()`, `get_parent_window()`,
`get_pointer()`, `get_realized()`, `get_receives_default()`, `get_requisition()`, `get_root_window()`,
`get_sensitive()`, `get_settings()`, `get_size_request()`, `get_snapshot()`, `get_state()`, `get_style()`,
`get_tooltip_markup()`, `get_tooltip_text()`, `get_tooltip_window()`, `get_toplevel()`, `get_visible()`,
`get_visual()`, `get_window()`, `grab_add()`, `grab_default()`, `grab_focus()`, `grab_remove()`,
`has_default()`, `has_grab()`, `has_rc_style()`, `has_screen()`, `hide()`, `hide_all()`, `hide_on_delete()`,
`input_shape_combine_mask()`, `intersect()`, `is_ancestor()`, `is_composited()`, `is_drawable()`,
`is_focus()`, `is_sensitive()`, `is_toplevel()`, `keynav_failed()`, `list_accel_closures()`, `list_mnemonic_labels()`,
`map()`, `menu_get_for_attach_widget()`, `modify_base()`, `modify_bg()`, `modify_cursor()`,
`modify_fg()`, `modify_font()`, `modify_style()`, `modify_text()`, `path()`, `queue_clear()`,
`queue_clear_area()`, `queue_draw()`, `queue_draw_area()`, `queue_resize()`, `queue_resize_no_redraw()`,
`rc_get_style()`, `realize()`, `region_intersect()`, `remove_accelerator()`, `remove_mnemonic_label()`,
`render_icon()`, `reparent()`, `reset_rc_styles()`, `reset_shapes()`, `selection_add_target()`,
`selection_add_targets()`, `selection_clear_targets()`, `selection_convert()`, `selection_owner_set()`,
`selection_remove_all()`, `send_expose()`, `send_focus_change()`, `set_accel_path()`, `set_activate_signal()`,
`set_allocation()`, `set_app_paintable()`, `set_can_default()`, `set_can_focus()`, `set_child_visible()`,
`set_colormap()`, `set_composite_name()`, `set_direction()`, `set_double_buffered()`, `set_events()`,
`set_extension_events()`, `set_has_tooltip()`, `set_has_window()`, `set_mapped()`, `set_name()`,
`set_no_show_all()`, `set_parent()`, `set_parent_window()`, `set_realized()`, `set_receives_default()`,
`set_redraw_on_allocate()`, `set_scroll_adjustments()`, `set_sensitive()`, `set_set_scroll_adjustments_signal()`,
`set_size_request()`, `set_state()`, `set_style()`, `set_tooltip_markup()`, `set_tooltip_text()`,
`set_tooltip_window()`, `set_uposition()`, `set_usize()`, `set_visible()`, `set_window()`, `shape_combine_mask()`,
`show()`, `show_all()`, `show_now()`, `size_allocate()`, `size_request()`, `style_attach()`, `style_get_property()`,
`thaw_child_notify()`, `translate_coordinates()`, `trigger_tooltip_query()`, `unmap()`, `un-`
`parent()`, `unrealize()`

Inherited from `gtk.Object`

`do_destroy()`, `flags()`, `remove_data()`, `remove_no_notify()`, `set_flags()`, `unset_flags()`

Inherited from `?.GObject`

`__copy__()`, `__deepcopy__()`, `__delattr__()`, `__eq__()`, `__gdoc__()`, `__ge__()`, `__gobject_init__()`,
`__gt__()`, `__hash__()`, `__le__()`, `__lt__()`, `__ne__()`, `__new__()`, `__repr__()`, `__setattr__()`,
`chain()`, `connect()`, `connect_after()`, `connect_object()`, `connect_object_after()`, `dis-`

connect(), disconnect_by_func(), emit(), emit_stop_by_name(), freeze_notify(), get_data(),
 get_properties(), get_property(), handler_block(), handler_block_by_func(), handler_disconnect(),
 handler_is_connected(), handler_unblock(), handler_unblock_by_func(), notify(), props(),
 set_data(), set_properties(), set_property(), stop_emission(), thaw_notify(), weak_ref()

Inherited from `atk.ImplementorIface`

ref_accessible()

Inherited from `gtk.Buildable`

add_child(), construct_child(), do_add_child(), do_construct_child(), do_get_internal_child(),
 do_parser_finished(), do_set_name(), get_internal_child(), parser_finished()

Inherited from `object`

__format__(), __getattr__(), __reduce__(), __reduce_ex__(), __sizeof__(), __str__(),
 __subclasshook__()

129.2 Properties

Name	Description
<i>Inherited from <code>gtk.Window</code></i>	
allow_grow, allow_shrink, configure_notify_received, configure_request_count, decorated, default_widget, destroy_with_parent, focus_widget, frame, frame_bottom, frame_left, frame_right, frame_top, gravity, group, has_focus, has_frame, has_user_ref_count, iconify_initially, keys_changed_handler, maximize_initially, mnemonic_modifier, modal, need_default_position, need_default_size, position, stick_initially, title, transient_parent, type, type_hint, wm_role, wmclass_class, wmclass_name	
<i>Inherited from <code>gtk.Bin</code></i>	
child	
<i>Inherited from <code>gtk.Container</code></i>	
border_width, focus_child, has_focus_chain, need_resize, reallocate_redraws, resize_mode	
<i>Inherited from <code>gtk.Widget</code></i>	
allocation, name, parent, requisition, saved_state, state, style, window	
<i>Inherited from <code>??GObject</code></i>	
__grefcount__	
<i>Inherited from <code>object</code></i>	
__class__	

129.3 Class Variables

Name	Description
<i>Inherited from <code>gtk.Window</code></i>	
<code>--gtype--</code>	

130 Class *reliafree.relays.relay.Mechanical*

Mechanical Relay Component Class. Covers specifications MIL-R-5757, MIL-R-6106, MIL-R-19523, and MIL-R-39016.

Hazard Rate Models:

1. MIL-HDBK-217F, section 13.1

130.1 Methods

`__init__(self)`

Initializes the Mechanical Relay Component Class.

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Mechanical Relay Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Mechanical Relay Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

`load_reliability_inputs(self, part)`

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

`load_reliability_outputs(self, part)`

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

combo_callback(*self, combo, part, _index_*)

Callback function for handling Mechanical Relay Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.
 part -- the ReliaFree COMPONENT object.
 index -- the user-defined index for the calling combobox.

entry_callback(*self, entry, event, part, convert, _index_*)

Callback function for handling Mechanical Relay Component Class Entry changes.

Keyword Arguments:

entry -- the entry widget calling this function.
 event -- the event that triggered calling this function.
 part -- the ReliaFree COMPONENT object.
 convert -- the data type to convert the entry contents to.
 index -- the position in the Component property array
 associated with the data from the entry that called
 this function.

calculate_mil_217_count(*self, part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Mechanical Relay Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self, part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Mechanical Relay Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

131 Class *reliafree.relays.relay.SolidState*

Solid State Relay Component Class. Covers specifications MIL-R-28750 and MIL-R-83726.

Hazard Rate Models:

1. MIL-HDBK-217F, section 13.2

131.1 Methods

`--init--(self)`

Initializes the Solid State Relay Component Class.

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Solid State Relay Component Class prediction calculations.

Keyword Arguments:

`part` -- the ReliaFree COMPONENT object.

`layout` -- the layout widget to contain the display widgets.

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Solid State Relay Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

`load_reliability_inputs(self, part)`

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

`load_reliability_outputs(self, part)`

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

combo_callback(*self, combo, part, _index_*)

Callback function for handling Solid State Relay Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.
 part -- the ReliaFree COMPONENT object.
 index -- the user-defined index for the calling combobox.

entry_callback(*self, entry, event, part, convert, _index_*)

Callback function for handling Solid State Relay Component Class Entry changes.

Keyword Arguments:

entry -- the entry widget calling this function.
 event -- the event that triggered calling this function.
 part -- the ReliaFree COMPONENT object.
 convert -- the data type to convert the entry contents to.
 index -- the position in the Component property array
 associated with the data from the entry that called
 this function.

calculate_mil_217_count(*self, part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Solid State Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self, part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Solid State Relay Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

132 Class `reliafree.requirement.Requirement`

The Requirement class is used to represent the requirements in a system being analyzed.

132.1 Methods

`__init__(self, application)`

Initializes the Requirements Object.

Keyword Arguments: `application` – the ReliaFree application.

`load_attributes(self)`

Loads the Requirement Object attribute values from the Requirement Object TreeView.

`create_tree(self)`

Creates the Requirements TreeView and connects it to callback functions to handle editing. Background and foreground colors can be set using the user-defined values in the ReliaFree configuration file.

`load_tree(self)`

Loads the Requirements treeview model with system information. This information can be stored either in a MySQL or SQLite3 database.

`edit_vandv_tree(self, cell, path, new_text, position, model)`

Called whenever a TreeView CellRenderer is edited.

Keyword Arguments: `cell` – the CellRenderer that was edited. `path` – the TreeView path of the CellRenderer that was edited. `new_text` – the new text in the edited CellRenderer. `position` – the column position of the edited CellRenderer. `model` – the TreeModel the CellRenderer belongs to.

`add_requirement(self, widget, type_)`

Adds a new Requirement to the Program's database.

Keyword Arguments: `widget` – the widget that called this function. `type_` – the type of Requirement to add; 0 = sibling, 1 = child.

delete_requirement(*self*, *menuitem*)

Deletes the currently selected Requirement from the Program's MySQL database.

Keyword Arguments: *menuitem* – the `gtk.MenuItem` that called this function.

add_vandv_task(*self*, *widget*, *type_=0*)

Adds a new Verification and Validation task to the selected Requirement to the Program's database.

Keyword Arguments: *widget* – the widget that called this function. *type_* – type of add; 0 = add new task, 1 = add existing task

save_requirement(*self*, *widget*)

Saves the Requirement Object treeview information to the Program's database.

Keyword Arguments: *widget* – the widget that called this function.

save_vandv_tasks(*self*, *widget*)

Saves the Validation Task list treeview information to the Program's database.

Keyword Arguments: *widget* – the widget that called this function.

load_general_data(*self*)

Loads the widgets with general information about the Requirement Object.

132.2 Class Variables

Name	Description
<code>n_attributes</code>	Value: 13

133 Class *reliafree.resistors.fixed.Composition*



Fixed Value Carbon Composition Resistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.1

133.1 Methods

`__init__(self)`

Initializes the Fixed Value Carbon Composition Resistor Component Class.

Overrides: *reliafree.resistors.resistor.Resistor.__init__*

`calculate_mil_217_count(self, part)`

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Value Carbon Composition Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

`calculate_mil_217_stress(self, part)`

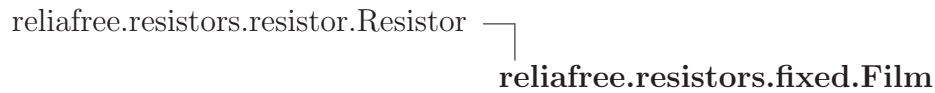
Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Value Carbon Composition Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

*Inherited from **`reliafree.resistors.resistor.Resistor`**(Section 140)*

combo_callback(), create_reliability_inputs(), create_reliability_outputs(), entry_callback(), load_reliability_inputs(), load_reliability_outputs()

134 Class **reliafree.resistors.fixed.Film**



Fixed Value Film Resistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.2

134.1 Methods

`__init__(self)`

Initializes the Fixed Value Film Resistor Component Class.

Overrides: `reliafree.resistors.resistor.Resistor.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Fixed Value Film Resistor Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.resistors.resistor.Resistor.create_reliability_inputs`

`load_reliability_inputs(self, part)`

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

Overrides: `reliafree.resistors.resistor.Resistor.load_reliability_inputs`

`calculate_mil_217_count(self, part)`

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Value Film Resistor Component Class.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

calculate_mil_217_stress (<i>self</i> , <i>part</i>)
Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Value Film Resistor Component Class.
Keyword Arguments: <i>part</i> – the ReliaFree COMPONENT object.

Inherited from reliafree.resistors.resistor.Resistor(Section 140)

`combo_callback()`, `create_reliability_outputs()`, `entry_callback()`, `load_reliability_outputs()`

135 Class **reliafree.resistors.fixed.FilmNetwork**



Fixed Value Film Network Resistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.4

135.1 Methods

`__init__(self)`

Initializes the Fixed Value Film Network Resistor Component Class.

Overrides: **reliafree.resistors.resistor.Resistor.__init__**

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Fixed Value Film Network Resistor prediction calculations.

Keyword Arguments: **part** – the ReliaFree COMPONENT object. **layout** – the layout widget to contain the display widgets.

Overrides: **reliafree.resistors.resistor.Resistor.create_reliability_inputs**

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Fixed Values Film Network Resistor Component Class calculation results.

Keyword Arguments: **part** – the ReliaFree COMPONENT object. **layout** – the layout widget to contain the display widgets.

Overrides: **reliafree.resistors.resistor.Resistor.create_reliability_outputs**

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.resistors.resistor.Resistor.load_reliability_inputs*

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.resistors.resistor.Resistor.load_reliability_outputs*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Value Film Network Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Value Film Network Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.resistors.resistor.Resistor(Section 140)

combo_callback(), *entry_callback()*

136 Class *reliafree.resistors.fixed.FilmPower*



Fixed Value Film Power Resistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.3

136.1 Methods

`__init__(self)`

Initializes the Fixed Value Film Power Resistor Component Class.

Overrides: *reliafree.resistors.resistor.Resistor.__init__*

`calculate_mil_217_count(self, part)`

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Value Film Power Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

`calculate_mil_217_stress(self, part)`

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Value Film Power Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

*Inherited from **`reliafree.resistors.resistor.Resistor`**(Section 140)*

`combo_callback()`, `create_reliability_inputs()`, `create_reliability_outputs()`, `entry_callback()`,
`load_reliability_inputs()`, `load_reliability_outputs()`

137 Class *reliafree.resistors.fixed.Wirewound*



Fixed Value Wirewound Resistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.5

137.1 Methods

`__init__(self)`

Initializes the Fixed Value Wirewound Resistor Component Class.

Overrides: *reliafree.resistors.resistor.Resistor.__init__*

`calculate_mil_217_count(self, part)`

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Value Wirewound Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

`calculate_mil_217_stress(self, part)`

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Value Wirewound Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

*Inherited from **`reliafree.resistors.resistor.Resistor`**(Section 140)*

`combo_callback()`, `create_reliability_inputs()`, `create_reliability_outputs()`, `entry_callback()`,
`load_reliability_inputs()`, `load_reliability_outputs()`

138 Class **reliafree.resistors.fixed.WirewoundPower**



Fixed Value Wirewound Power Resistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.6

138.1 Methods

`__init__(self)`

Initializes the Fixed Value Wirewound Power Resistor Component Class.

Overrides: `reliafree.resistors.resistor.Resistor.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Fixed Value Wirewound Power Resistor prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.resistors.resistor.Resistor.create_reliability_inputs`

`load_reliability_inputs(self, part)`

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

Overrides: `reliafree.resistors.resistor.Resistor.load_reliability_inputs`

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Fixed Value Wirewound Power Resistor Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides: *reliafree.resistors.resistor.Resistor.combo_callback*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Value Wirewound Power Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Value Wirewound Power Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.resistors.resistor.Resistor(Section 140)

create_reliability_outputs(), *entry_callback()*, *load_reliability_outputs()*

139 Class **reliafree.resistors.fixed.WirewoundPowerChassis**

reliafree.resistors.resistor.Resistor — **reliafree.resistors.fixed.WirewoundPowerChassis**

Fixed Value Wirewound Chassis-Mounted Power Resistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.7

139.1 Methods

__init__(*self*)

Initializes the Fixed Value Wirewound Chassis-Mounted Power Resistor Component Class.

Overrides: reliafree.resistors.resistor.Resistor.__init__

create_reliability_inputs(*self, part, layout*)

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Fixed Value Wirewound Chassis- Mounted Power Resistor prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides: reliafree.resistors.resistor.Resistor.create_reliability_inputs

load_reliability_inputs(*self, part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: reliafree.resistors.resistor.Resistor.load_reliability_inputs

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Fixed Value Wirewound Chassis-Mounted Power Resistor Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides: *reliafree.resistors.resistor.Resistor.combo_callback*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Fixed Value Wirewound Chassis-Mounted Power Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Value Wirewound Chassis-Mounted Power Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.resistors.resistor.Resistor(Section 140)

create_reliability_outputs(), *entry_callback()*, *load_reliability_outputs()*

140 Class *reliafree.resistors.resistor.Resistor*

Known Subclasses: *reliafree.resistors.variable.Composition*, *reliafree.resistors.variable.NonWirewound*, *reliafree.resistors.variable.VarFilm*, *reliafree.resistors.variable.VarWirewound*, *reliafree.resistors.variable.WirewoundPrecision*, *reliafree.resistors.variable.WirewoundSemiPrecision*, *reliafree.resistors.fixed.Composition*, *reliafree.resistors.fixed.Film*, *reliafree.resistors.fixed.FilmNetwork*, *reliafree.resistors.fixed.FilmPower*, *reliafree.resistors.fixed.Wirewound*, *reliafree.resistors.fixed.WirewoundP*, *reliafree.resistors.fixed.WirewoundPowerChassis*, *reliafree.resistors.thermistor.Thermistor*

Resistor meta class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.

140.1 Methods

`__init__(self)`

Initializes the Resistor Component Class.

`combo_callback(self, combo, part, _index_)`

Callback function for handling Resistor Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-definded index for the calling combobox.

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Resistor Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

create_reliability_outputs(*self*, *part*, *layout*)

Populates the ReliaFree Workbook calculation results tab with the widgets to display Resistor Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

entry_callback(*self*, *entry*, *event*, *part*, *convert*, *_index_*)

Callback function for handling Inductive Device Class Entry changes.

Keyword Arguments:

entry -- the entry widget calling this function.
event -- the event that triggered calling this function.
part -- the ReliaFree COMPONENT object.
convert -- the data type to convert the entry contents to.
index -- the position in the Component property array
 associated with the data from the entry that called
 this function.

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

141 Class `reliafree.resistors.thermistor.Thermistor`



Thermistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.8

141.1 Methods

`__init__(self)`

Initializes the Thermistor Component Class.

Overrides: `reliafree.resistors.resistor.Resistor.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Thermistor Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.resistors.resistor.Resistor.create_reliability_inputs`

`load_reliability_inputs(self, part)`

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

Overrides: `reliafree.resistors.resistor.Resistor.load_reliability_inputs`

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Thermistor Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides: *reliafree.resistors.resistor.Resistor.combo_callback*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Thermistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Thermistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.resistors.resistor.Resistor(Section 140)

create_reliability_outputs(), *entry_callback()*, *load_reliability_outputs()*

142 Class `reliafree.resistors.variable.Composition`

`reliafree.resistors.resistor.Resistor` — **`reliafree.resistors.variable.Composition`**

Variable Value Carbon Composition Resistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.14

142.1 Methods

`__init__(self)`

Initializes the Variable Value Carbon Composition Resistor Component Class.

Overrides: `reliafree.resistors.resistor.Resistor.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Variable Value Carbon Composition Resistor Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.resistors.resistor.Resistor.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Variable Value Carbon Composition Resistor Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.resistors.resistor.Resistor.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.resistors.resistor.Resistor.load_reliability_inputs*

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.resistors.resistor.Resistor.load_reliability_outputs*

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Variable Value Carbon Composition Resistor Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides: *reliafree.resistors.resistor.Resistor.combo_callback*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Variable Value Carbon Composition Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Variable Value Carbon Composition Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.resistors.resistor.Resistor(Section 140)

entry_callback()

143 Class `reliafree.resistors.variable.NonWirewound`



Variable Value Nonwirewound Resistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.15

143.1 Methods

<code>__init__(self)</code>
Initializes the Variable Value NonWirewound Resistor Component Class. Overrides: <code>reliafree.resistors.resistor.Resistor.__init__</code>
<code>create_reliability_inputs(self, part, layout)</code>
Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Variable Value Nonwirewound Resistor Component Class prediction calculations. Keyword Arguments: <code>part</code> – the ReliaFree COMPONENT object. <code>layout</code> – the layout widget to contain the display widgets. Overrides: <code>reliafree.resistors.resistor.Resistor.create_reliability_inputs</code>
<code>create_reliability_outputs(self, part, layout)</code>
Populates the ReliaFree Workbook calculation results tab with the widgets to display Variable Value Nonwirewound Resistor Component Class calculation results. Keyword Arguments: <code>part</code> – the ReliaFree COMPONENT object. <code>layout</code> – the layout widget to contain the display widgets. Overrides: <code>reliafree.resistors.resistor.Resistor.create_reliability_outputs</code>

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.resistors.resistor.Resistor.load_reliability_inputs*

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.resistors.resistor.Resistor.load_reliability_outputs*

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Variable Value Nonwirewound Resistor Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides: *reliafree.resistors.resistor.Resistor.combo_callback*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Variable Value Nonwirewound Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Variable Value Nonwirewound Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.resistors.resistor.Resistor(Section 140)

entry_callback()

144 Class **reliafree.resistors.variable.VarFilm**

reliafree.resistors.resistor.Resistor —
reliafree.resistors.variable.VarFilm

Variable Value Film Resistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.15

144.1 Methods

__init__(self)

Initializes the Variable Value Film Resistor Component Class.

Overrides: reliafree.resistors.resistor.Resistor.__init__

create_reliability_inputs(self, part, layout)

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Variable Value Film Resistor Component Class prediction calculations.

Keyword Arguments: part – the ReliaFree COMPONENT object. layout – the layout widget to contain the display widgets.

Overrides: reliafree.resistors.resistor.Resistor.create_reliability_inputs

create_reliability_outputs(self, part, layout)

Populates the ReliaFree Workbook calculation results tab with the widgets to display Variable Value Film Resistor Component Class calculation results.

Keyword Arguments: part – the ReliaFree COMPONENT object. layout – the layout widget to contain the display widgets.

Overrides: reliafree.resistors.resistor.Resistor.create_reliability_outputs

load_reliability_inputs(self, part)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: part – the ReliaFree COMPONENT object.

Overrides: reliafree.resistors.resistor.Resistor.load_reliability_inputs

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.resistors.resistor.Resistor.load_reliability_outputs*

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Variable Value Film Resistor Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides: *reliafree.resistors.resistor.Resistor.combo_callback*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Variable Value Film Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Variable Value Film Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.resistors.resistor.Resistor(Section 140)

entry_callback()

145 Class **reliafree.resistors.variable.VarWirewound**

reliafree.resistors.resistor.Resistor —
reliafree.resistors.variable.VarWirewound

Variable Value Wirewound Resistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.9

145.1 Methods

__init__(self)

Initializes the Variable Value Wirewound Resistor Component Class.

Overrides: *reliafree.resistors.resistor.Resistor.__init__*

create_reliability_inputs(self, part, layout)

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Variable Value Wirewound Resistor Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides: *reliafree.resistors.resistor.Resistor.create_reliability_inputs*

create_reliability_outputs(self, part, layout)

Populates the ReliaFree Workbook calculation results tab with the widgets to display Variable Value Resistor Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides: *reliafree.resistors.resistor.Resistor.create_reliability_outputs*

load_reliability_inputs(self, part)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.resistors.resistor.Resistor.load_reliability_inputs*

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.resistors.resistor.Resistor.load_reliability_outputs*

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Variable Value Resistor Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides: *reliafree.resistors.resistor.Resistor.combo_callback*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Variable Value Wirewound Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Variable Value Wirewound Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.resistors.resistor.Resistor(Section 140)

entry_callback()

146 Class **reliafree.resistors.variable.VarWirewoundPower**

reliafree.resistors.resistor.Resistor —
reliafree.resistors.variable.VarWirewoundPower

Variable Value Wirewound Power Resistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.12

146.1 Methods

__init__(self)

Initializes the Variable Value Wirewound Power Resistor Component Class.

Overrides: *reliafree.resistors.resistor.Resistor.__init__*

create_reliability_inputs(self, part, layout)

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Variable Value Wirewound Power Resistor Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides: *reliafree.resistors.resistor.Resistor.create_reliability_inputs*

create_reliability_outputs(self, part, layout)

Populates the ReliaFree Workbook calculation results tab with the widgets to display Variable Value Wirewound Power Resistor Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides: *reliafree.resistors.resistor.Resistor.create_reliability_outputs*

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.resistors.resistor.Resistor.load_reliability_inputs*

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.resistors.resistor.Resistor.load_reliability_outputs*

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Variable Value Wirewound Power Resistor Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides: *reliafree.resistors.resistor.Resistor.combo_callback*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Variable Value Wirewound Power Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Variable Value Wirewound Power Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.resistors.resistor.Resistor(Section 140)

entry_callback()

147 Class **reliafree.resistors.variable.WirewoundPrecision**

reliafree.resistors.resistor.Resistor —
reliafree.resistors.variable.WirewoundPrecision

Variable Value Precision Wirewound Resistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.10

147.1 Methods

__init__(*self*)

Initializes the Variable Value Precision Wirewound Resistor Component Class.

Overrides: reliafree.resistors.resistor.Resistor.__init__

create_reliability_inputs(*self, part, layout*)

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Variable Value Precision Wirewound Resistor Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides: reliafree.resistors.resistor.Resistor.create_reliability_inputs

create_reliability_outputs(*self, part, layout*)

Populates the ReliaFree Workbook calculation results tab with the widgets to display Variable Value Precision Wirewound Resistor Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides: reliafree.resistors.resistor.Resistor.create_reliability_outputs

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.resistors.resistor.Resistor.load_reliability_inputs*

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.resistors.resistor.Resistor.load_reliability_outputs*

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Variable Value Precision Wirewound Resistor Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides: *reliafree.resistors.resistor.Resistor.combo_callback*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Variable Value Precision Wirewound Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Variable Value Precision Wirewound Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.resistors.resistor.Resistor(Section 140)

entry_callback()

148 Class **reliafree.resistors.variable.WirewoundSemiPrecision**

reliafree.resistors.resistor.Resistor —
reliafree.resistors.variable.WirewoundSemiPrecision

Variable Value Semiprecision Wirewound Resistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.11

148.1 Methods

`__init__(self)`

Initializes the Resistor Component Class.

Overrides: `reliafree.resistors.resistor.Resistor.__init__` `exitit`(inherited documentation)

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Variable Value Semiprecision Wirewound Resistor Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.resistors.resistor.Resistor.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Variable Value Semiprecision Wirewound Resistor Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.resistors.resistor.Resistor.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.resistors.resistor.Resistor.load_reliability_inputs*

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.resistors.resistor.Resistor.load_reliability_outputs*

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Variable Value Semiprecision Wirewound Resistor Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides: *reliafree.resistors.resistor.Resistor.combo_callback*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Variable Value Semiprecision Wirewound Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Variable Value Semiprecision Wirewound Resistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.resistors.resistor.Resistor(Section 140)

entry_callback()

149 Class `reliafree.revision.Revision`

This is the REVISION Class for The ReliaFree Project.

149.1 Methods

`__init__(self, application)`

Initializes the Revision Object.

Keyword Arguments: `application` – the ReliaFree application.

`load_attributes(self)`

Loads the Revision Object attribute values from the Revision Object TreeView.

`create_tree(self)`

Creates the Revision treeview and connects it to callback functions to handle editing. Background and foreground colors can be set using the user-defined values in the ReliaFree configuration file.

`load_tree(self)`

Loads the Revision TreeView model with revision information. This information can be stored either in a MySQL database.

`add_revision(self)`

Adds a new Revision to the Program's MySQL database.

`delete_revision(self, menuitem)`

Deletes the currently selected Assembly from the Program's MySQL database.

Keyword Arguments: `menuitem` – the `gtk.MenuItem` that called this function.

`load_general_data(self)`

Loads the widgets with general information about the Revision Object.

`load_calculation_results(self)`

Loads the widgets with calculation results for the Revision Object.

rollup(*self*)

Calculates the sum of various parameters for the Revision Object. This is the sum of corresponding component values.

150 Class **reliafree.semiconductors.diode.HighFrequency**

reliafree.semiconductors.semiconductor.Semiconductor — **reliafree.semiconductors.diode.HighFrequency**

Low Frequency Diode Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 6.2

150.1 Methods

__init__(self)

Initializes the High Frequency Diode Component Class.

Overrides: reliafree.semiconductors.semiconductor.Semiconductor.__init__

create_reliability_inputs(self, part, layout)

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for High Frequency Diode prediction calculations.

Keyword Arguments: part – the ReliaFree COMPONENT object. layout – the layout widget to contain the display widgets.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.create_reliability_inputs

create_reliability_outputs(self, part, layout)

Populates the ReliaFree Workbook calculation results tab with the widgets to display High Frequency Diode calculation results.

Keyword Arguments: part – the ReliaFree COMPONENT object. layout – the layout widget to contain the display widgets.

Overrides: reli-

afree.semiconductors.semiconductor.Semiconductor.create_reliability_outputs

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_inputs

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_outputs

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling High Frequency Diode Semiconductor Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.combo_callback

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the High Frequency Diode Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the High Frequency Diode Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.semiconductors.semiconductor.Semiconductor(Section

155)`entry_callback()`

151 Class `reliafree.semiconductors.diode.LowFrequency`

`reliafree.semiconductors.semiconductor.Semiconductor` — `reliafree.semiconductors.diode.LowFrequency`

Low Frequency Diode Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 6.1

151.1 Methods

`__init__(self)`

Initializes the Low Frequency Diode Component Class.

Overrides: `reliafree.semiconductors.semiconductor.Semiconductor.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Low Frequency Diode prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.semiconductors.semiconductor.Semiconductor.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Low Frequency Diode calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.semiconductors.semiconductor.Semiconductor.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_inputs

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_outputs

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Low Frequency Diode Semiconductor Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.combo_callback

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Low Frequency Diode Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Low Frequency Diode Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.semiconductors.semiconductor.Semiconductor(Section

155)`entry_callback()`

152 Class **reliafree.semiconductors.optoelectronics.Detector**

reliafree.semiconductors.semiconductor.Semiconductor — **reliafree.semiconductors.optoelectronics.Detector**

Photodetector Component Class. Includes photodetectors, optoisolators, and photoemitters.

Hazard Rate Models:

1. MIL-HDBK-217F, section 6.11

152.1 Methods

`__init__(self)`

Initializes the Photodetector Component Class.

Overrides: `reliafree.semiconductors.semiconductor.Semiconductor.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Photodetector Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.semiconductors.semiconductor.Semiconductor.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Photodetector Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reli-`

`afree.semiconductors.semiconductor.Semiconductor.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_inputs

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Photodetector Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.combo_callback

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Photodetector Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Photodetector Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from *reliafree.semiconductors.semiconductor.Semiconductor* (Section 155)

entry_callback(), *load_reliability_outputs()*

153 Class *reliafree.semiconductors.optoelectronics.Display*

reliafree.semiconductors.semiconductor.Semiconductor — *reliafree.semiconductors.optoelectronics.Display*

Alphanumeric Display Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 6.12

153.1 Methods

`__init__(self)`

Initializes the Alphanumeric Display Component Class.

Overrides: *reliafree.semiconductors.semiconductor.Semiconductor.__init__*

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Alphanumeric Display Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.create_reliability_inputs

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Alphanumeric Display Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides: *reli-*

afree.semiconductors.semiconductor.Semiconductor.create_reliability_outputs

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_inputs

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Alphanumeric Display Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Alphanumeric Display Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from *reliafree.semiconductors.semiconductor.Semiconductor* (Section 155)

combo_callback(), *entry_callback()*, *load_reliability_outputs()*

154 Class *reliafree.semiconductors.optoelectronics.LaserDiode*

reliafree.semiconductors.semiconductor.Semiconductor — *reliafree.semiconductors.optoelectronics.LaserDiode*

Laser Diode Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 6.13

154.1 Methods

`__init__(self)`

Initializes the Laser Diode Component Class.

Overrides: *reliafree.semiconductors.semiconductor.Semiconductor.__init__*

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Laser Diode Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.create_reliability_inputs

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Laser Diode Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides: *reliafree.semiconductors.semiconductor.Semiconductor.create_reliability_outputs*

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_inputs

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_outputs

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Laser Diode Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.combo_callback

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Laser Diode Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Laser Diode Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.semiconductors.semiconductor.Semiconductor(Section

155)

entry_callback()

155 Class `reliafree.semiconductors.semiconductor.Semiconductor`

Known Subclasses: `reliafree.semiconductors.thyristor.Thyristor`, `reliafree.semiconductors.transistor.HFHPBipolar`, `reliafree.semiconductors.transistor.HFLNBipolar`, `reliafree.semiconductors.transistor.HFSiFET`, `reliafree.semiconductors.transistor.LFBipolar`, `reliafree.semiconductors.transistor.LFSiFET`, `reliafree.semiconductors.transistor.Unijunction`, `reliafree.semiconductors.diode.HighFrequency`, `reliafree.semiconductors.diode.LowFrequency`, `reliafree.semiconductors.optoelectronics.Detector`, `reliafree.semiconductors.optoelectronics.Display`, `reliafree.semiconductors.optoelectronics.LaserDiode`

Discrete Semiconductor meta class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 6.

155.1 Methods

`__init__(self)`

Initializes the Discrete Semiconductor Component Class.

`combo_callback(self, combo, part, _index_)`

Callback function for handling Discrete Semiconductor Class
ComboBox changes.

Keyword Arguments:

`combo` -- the combobox widget calling this function.

`part` -- the ReliaFree COMPONENT object.

`_index_` -- the user-defined index for the calling combobox.

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets
needed to select inputs for Discrete Semiconductor prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the
layout widget to contain the display widgets.

create_reliability_outputs(*self*, *part*, *layout*)

Populates the ReliaFree Workbook calculation results tab with the widgets to display Discrete Semiconductor calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

entry_callback(*self*, *entry*, *event*, *part*, *convert*, *_index_*)

Callback function for handling Discrete Semiconductor Device Class Entry changes.

Keyword Arguments:

entry -- the entry widget calling this function.
event -- the event that triggered calling this function.
part -- the ReliaFree COMPONENT object.
convert -- the data type to convert the entry contents to.
index -- the position in the Component property array
 associated with the data from the entry that called
 this function.

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

156 Class `reliafree.semiconductors.thyristor.Thyristor`

`reliafree.semiconductors.semiconductor.Semiconductor` — `reliafree.semiconductors.thyristor.Thyristor`

Thyristor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 6.10

156.1 Methods

`__init__(self)`

Initializes the Thyristor Component Class.

Overrides: `reliafree.semiconductors.semiconductor.Semiconductor.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Thyristor prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.semiconductors.semiconductor.Semiconductor.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Thyristor calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reli-`

`afree.semiconductors.semiconductor.Semiconductor.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_inputs

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_outputs

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Thyristor Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Thyristor Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from *reliafree.semiconductors.semiconductor.Semiconductor* (Section 155)

combo_callback(), *entry_callback()*

157 Class **reliafree.semiconductors.transistor.HFGaAsFET**

reliafree.semiconductors.semiconductor.Semiconductor —
reliafree.semiconductors.transistor.HFGaAsFET

High Frequency Gallium Arsenide (GaAs) Field Effect Transistor (FET) Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 6.8

157.1 Methods

`__init__(self)`

Initializes the High Frequency GaAs FET Component Class.

Overrides: `reliafree.semiconductors.semiconductor.Semiconductor.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for High Frequency GaAs FET Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.semiconductors.semiconductor.Semiconductor.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display High Frequency GaAs FET Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reli-`

`afree.semiconductors.semiconductor.Semiconductor.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_inputs

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_outputs

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling High Frequency GaAs FET Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.combo_callback

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the High Frequency GaAs FET Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the High Frequency GaAs FET Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.semiconductors.semiconductor.Semiconductor(Section

155)

entry_callback()

158 Class **reliafree.semiconductors.transistor.HFHPBipolar**

reliafree.semiconductors.semiconductor.Semiconductor — **reliafree.semiconductors.transistor.HFHPBipolar**

High Frequency, High Power Bipolar Transistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 6.7

158.1 Methods

`__init__(self)`

Initializes the High Frequency, High Power Bipolar Transistor Component Class.

Overrides: `reliafree.semiconductors.semiconductor.Semiconductor.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for High Frequency, High Power Bipolar Transistor Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.semiconductors.semiconductor.Semiconductor.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display High Frequency, High Power Bipolar Transistor Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.semiconductors.semiconductor.Semiconductor.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_inputs

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_outputs

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling High Frequency, High Power Bipolar Transistor Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.combo_callback

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the High Frequency, High Power Bipolar Transistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the High Frequency, High Power Bipolar Transistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.semiconductors.semiconductor.Semiconductor(Section

155)

entry_callback()

159 Class **reliafree.semiconductors.transistor.HFLNBipolar**

reliafree.semiconductors.semiconductor.Semiconductor — **reliafree.semiconductors.transistor.HFLNBipolar**

High Frequency, Low Noise Bipolar Transistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 6.6

159.1 Methods

`__init__(self)`

Initializes the High Frequency, Low Noise Bipolar Transistor Component Class.

Overrides: `reliafree.semiconductors.semiconductor.Semiconductor.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for High Frequency, Low Noise Bipolar Transistor Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.semiconductors.semiconductor.Semiconductor.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display High Frequency, Low Noise Bipolar Transistor Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reli-`

`afree.semiconductors.semiconductor.Semiconductor.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_inputs

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_outputs

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the High Frequency, Low Noise Bipolar Transistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the High Frequency, Low Noise Bipolar Transistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from *reliafree.semiconductors.semiconductor.Semiconductor* (Section 155)

combo_callback(), *entry_callback()*

160 Class `reliafree.semiconductors.transistor.HFSiFET`

`reliafree.semiconductors.semiconductor.Semiconductor` └─ `reliafree.semiconductors.transistor.HFSiFET`

High Frequency Silicon Field Effect Transistor (FET) Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 6.9

160.1 Methods

`__init__(self)`

Initializes the High Frequency Silicon FET Component Class.

Overrides: `reliafree.semiconductors.semiconductor.Semiconductor.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for High Frequency Silicon FET Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.semiconductors.semiconductor.Semiconductor.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display High Frequency Silicon FET Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reli-`

`afree.semiconductors.semiconductor.Semiconductor.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_inputs

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling High Frequency Silicon FET Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.combo_callback

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the High Frequency Silicon FET Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the High Frequency Silicon FET Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from *reliafree.semiconductors.semiconductor.Semiconductor* (Section 155)

entry_callback(), *load_reliability_outputs()*

161 Class **reliafree.semiconductors.transistor.LFBipolar**

reliafree.semiconductors.semiconductor.Semiconductor — **reliafree.semiconductors.transistor.LFBipolar**

Low Frequency Bipolar Transistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 6.3

161.1 Methods

__init__(*self*)

Initializes the Low Frequency Bipolar Transistor Component Class.

Overrides: reliafree.semiconductors.semiconductor.Semiconductor.__init__

create_reliability_inputs(*self, part, layout*)

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Low Frequency Bipolar Transistor Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.create_reliability_inputs

create_reliability_outputs(*self, part, layout*)

Populates the ReliaFree Workbook calculation results tab with the widgets to display Low Frequency Bipolar Transistor Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides: reli-

afiafree.semiconductors.semiconductor.Semiconductor.create_reliability_outputs

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_inputs

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_outputs

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Low Frequency Bipolar Transistor Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.combo_callback

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Low Frequency Bipolar Transistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Low Frequency Bipolar Transistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.semiconductors.semiconductor.Semiconductor(Section

155)

entry_callback()

162 Class **reliafree.semiconductors.transistor.LFSiFET**

reliafree.semiconductors.semiconductor.Semiconductor —
reliafree.semiconductors.transistor.LFSiFET

Low Frequency Silicon Field Effect Transistor (FET) Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 6.4

162.1 Methods

__init__(self)

Initializes the Low Frequency Silicon FET Transistor Component Class.

Overrides: reliafree.semiconductors.semiconductor.Semiconductor.__init__

create_reliability_inputs(self, part, layout)

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Low Frequency Silicon FET prediction calculations.

Keyword Arguments: part – the ReliaFree COMPONENT object. layout – the layout widget to contain the display widgets.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.create_reliability_inputs

create_reliability_outputs(self, part, layout)

Populates the ReliaFree Workbook calculation results tab with the widgets to display Low Frequency Silicon FET calculation results.

Keyword Arguments: part – the ReliaFree COMPONENT object. layout – the layout widget to contain the display widgets.

Overrides: reli-

afree.semiconductors.semiconductor.Semiconductor.create_reliability_outputs

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_inputs

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.load_reliability_outputs

combo_callback(*self*, *combo*, *part*, *_index_*)

Callback function for handling Low Frequency Silicon FET Component Class ComboBox changes.

Keyword Arguments:

combo -- the combobox widget calling this function.

part -- the ReliaFree COMPONENT object.

index -- the user-defined index for the calling combobox.

Overrides:

reliafree.semiconductors.semiconductor.Semiconductor.combo_callback

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Low Frequency Silicon FET Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Low Frequency Silicon FET Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.semiconductors.semiconductor.Semiconductor(Section

155)

entry_callback()

163 Class `reliafree.semiconductors.transistor.Unijunction`

`reliafree.semiconductors.semiconductor.Semiconductor` — `reliafree.semiconductors.transistor.Unijunction`

Unijunction Transistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 6.5

163.1 Methods

`__init__(self)`

Initializes the Unijunction Transistor Component Class.

Overrides: `reliafree.semiconductors.semiconductor.Semiconductor.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Unijunction Transistor Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides:

`reliafree.semiconductors.semiconductor.Semiconductor.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Unijunction Transistor Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reli-`

`afree.semiconductors.semiconductor.Semiconductor.create_reliability_outputs`

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Unijunction Transistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Unijunction Transistor Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from *reliafree.semiconductors.semiconductor.Semiconductor* (Section 155)

combo_callback(), *entry_callback()*, *load_reliability_inputs()*, *load_reliability_outputs()*

164 Class `reliafree.switches.breaker.Breaker`

`reliafree.switches.switch.Switch` —
`reliafree.switches.breaker.Breaker`

Circuit Breaker Switch Component Class. Covers specifications MIL-C-55629, MIL-C-83383, MIL-C-39019, and W-C-375.

Hazard Rate Models:

1. MIL-HDBK-217F, section 14.1

164.1 Methods

`__init__(self)`

Initializes the Circuit Breaker Switch Component Class.

Overrides: `reliafree.switches.switch.Switch.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Circuit Breaker Switch Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.switches.switch.Switch.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Circuit Breaker Switch Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.switches.switch.Switch.create_reliability_outputs`

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.switches.switch.Switch.load_reliability_inputs*

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.switches.switch.Switch.load_reliability_outputs*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Circuit Breaker Switch Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Circuit Breaker Switch Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.switches.switch.Switch(Section 167)

combo_callback(), *entry_callback()*

165 Class **reliafree.switches.rotary.Rotary**

reliafree.switches.switch.Switch —
reliafree.switches.rotary.Rotary

Rotary Switch Component Class. Covers specifications MIL-S-3786.

Hazard Rate Models:

1. MIL-HDBK-217F, section 14.3.

165.1 Methods

`__init__(self)`

Initializes the Rotary Switch Component Class.

Overrides: `reliafree.switches.switch.Switch.__init__`

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Rotary Switch Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.switches.switch.Switch.create_reliability_inputs`

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Toggle and Pushbutton Switch Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

Overrides: `reliafree.switches.switch.Switch.create_reliability_outputs`

`load_reliability_inputs(self, part)`

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

Overrides: `reliafree.switches.switch.Switch.load_reliability_inputs`

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.switches.switch.Switch.load_reliability_outputs*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Rotary Switch Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Toggle or Pushbutton Switch Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.switches.switch.Switch(Section 167)

combo_callback(), *entry_callback()*

166 Class **reliafree.switches.sensitive.Sensitive**

reliafree.switches.switch.Switch —
reliafree.switches.sensitive.Sensitive

Basic Sensitive Switch Component Class. Covers specifications MIL-S-8805

Hazard Rate Models:

1. MIL-HDBK-217F, section 14.2.

166.1 Methods

__init__(*self*)

Initializes the Basic Sensitive Switch Component Class.

Overrides: reliafree.switches.switch.Switch.__init__

create_reliability_inputs(*self, part, layout*)

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Basic Sensitive Switch Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides: reliafree.switches.switch.Switch.create_reliability_inputs

create_reliability_outputs(*self, part, layout*)

Populates the ReliaFree Workbook calculation results tab with the widgets to display Basic Sensitive Switch Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides: reliafree.switches.switch.Switch.create_reliability_outputs

load_reliability_inputs(*self, part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: reliafree.switches.switch.Switch.load_reliability_inputs

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.switches.switch.Switch.load_reliability_outputs*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Basic Sensitive Switch Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Basic Sensitive Switch Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.switches.switch.Switch(Section 167)

combo_callback(), *entry_callback()*

167 Class *reliafree.switches.switch.Switch*

Known Subclasses: *reliafree.switches.thumbwheel.Thumbwheel*, *reliafree.switches.sensitive.Sensitive*, *reliafree.switches.toggle.Toggle*, *reliafree.switches.breaker.Breaker*, *reliafree.switches.rotary.Rotary*

Switches meta class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 14.

167.1 Methods

`__init__(self)`

Initializes the Switches Component Class.

`combo_callback(self, combo, part, _index_)`

Callback function for handling Switches Component Class ComboBox changes.

Keyword Arguments:

`combo` -- the combobox widget calling this function.

`part` -- the ReliaFree COMPONENT object.

`_index_` -- the user-defined index for the calling combobox.

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Switches Component Class prediction calculations.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Switches Component Class calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object. `layout` – the layout widget to contain the display widgets.

entry_callback(*self, entry, event, part, convert, _index_*)

Callback function for handling Switches Component Class Entry changes.

Keyword Arguments:

- `entry` -- the entry widget calling this function.
- `event` -- the event that triggered calling this function.
- `part` -- the ReliaFree COMPONENT object.
- `convert` -- the data type to convert the entry contents to.
- `_index_` -- the position in the Component property array associated with the data from the entry that called this function.

load_reliability_inputs(*self, part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

load_reliability_outputs(*self, part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: `part` – the ReliaFree COMPONENT object.

168 Class **reliafree.switches.thumbwheel.Thumbwheel**

reliafree.switches.switch.Switch —
reliafree.switches.thumbwheel.Thumbwheel

Thumbwheel Switch Component Class. Covers specifications MIL-S-22710.

Hazard Rate Models:

1. MIL-HDBK-217F, section 14.4

168.1 Methods

__init__(self)

Initializes the Toggle or Pushbutton Switch Component Class.

Overrides: reliafree.switches.switch.Switch.__init__

create_reliability_inputs(self, part, layout)

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Toggle or Pushbutton Switch Component Class prediction calculations.

Keyword Arguments: part – the ReliaFree COMPONENT object. layout – the layout widget to contain the display widgets.

Overrides: reliafree.switches.switch.Switch.create_reliability_inputs

create_reliability_outputs(self, part, layout)

Populates the ReliaFree Workbook calculation results tab with the widgets to display Toggle and Pushbutton Switch Component Class calculation results.

Keyword Arguments: part – the ReliaFree COMPONENT object. layout – the layout widget to contain the display widgets.

Overrides: reliafree.switches.switch.Switch.create_reliability_outputs

load_reliability_inputs(self, part)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: part – the ReliaFree COMPONENT object.

Overrides: reliafree.switches.switch.Switch.load_reliability_inputs

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.switches.switch.Switch.load_reliability_outputs*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Thumbwheel Switch Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

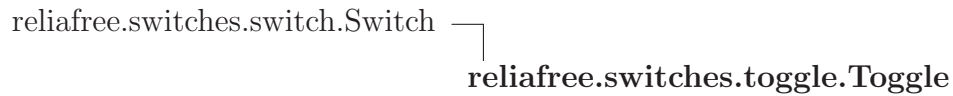
Performs MIL-HDBK-217F part stress hazard rate calculations for the Toggle or Pushbutton Switch Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from *reliafree.switches.switch.Switch*(Section 167)

combo_callback(), *entry_callback()*

169 Class *reliafree.switches.toggle.Toggle*



Toggle or Pushbutton Switch Component Class. Covers specifications MIL-S-3950, MIL-S-8805, MIL-S-8834, MIL-S-22885, and MIL-S-83731.

Hazard Rate Models:

1. MIL-HDBK-217F, section 14.1

169.1 Methods

`__init__(self)`

Initializes the Toggle or Pushbutton Switch Component Class.

Overrides: *reliafree.switches.switch.Switch.__init__*

`create_reliability_inputs(self, part, layout)`

Populates the ReliaFree Workbook calculation input tab with the widgets needed to select inputs for Toggle or Pushbutton Switch Component Class prediction calculations.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides: *reliafree.switches.switch.Switch.create_reliability_inputs*

`create_reliability_outputs(self, part, layout)`

Populates the ReliaFree Workbook calculation results tab with the widgets to display Toggle and Pushbutton Switch Component Class calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object. *layout* – the layout widget to contain the display widgets.

Overrides: *reliafree.switches.switch.Switch.create_reliability_outputs*

load_reliability_inputs(*self*, *part*)

Loads the ReliaFree Workbook calculation input widgets with calculation input information.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.switches.switch.Switch.load_reliability_inputs*

load_reliability_outputs(*self*, *part*)

Loads the ReliaFree Workbook calculation results widgets with calculation results.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Overrides: *reliafree.switches.switch.Switch.load_reliability_outputs*

calculate_mil_217_count(*self*, *part*)

Performs MIL-HDBK-217F part count hazard rate calculations for the Toggle or Pushbutton Switch Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

calculate_mil_217_stress(*self*, *part*)

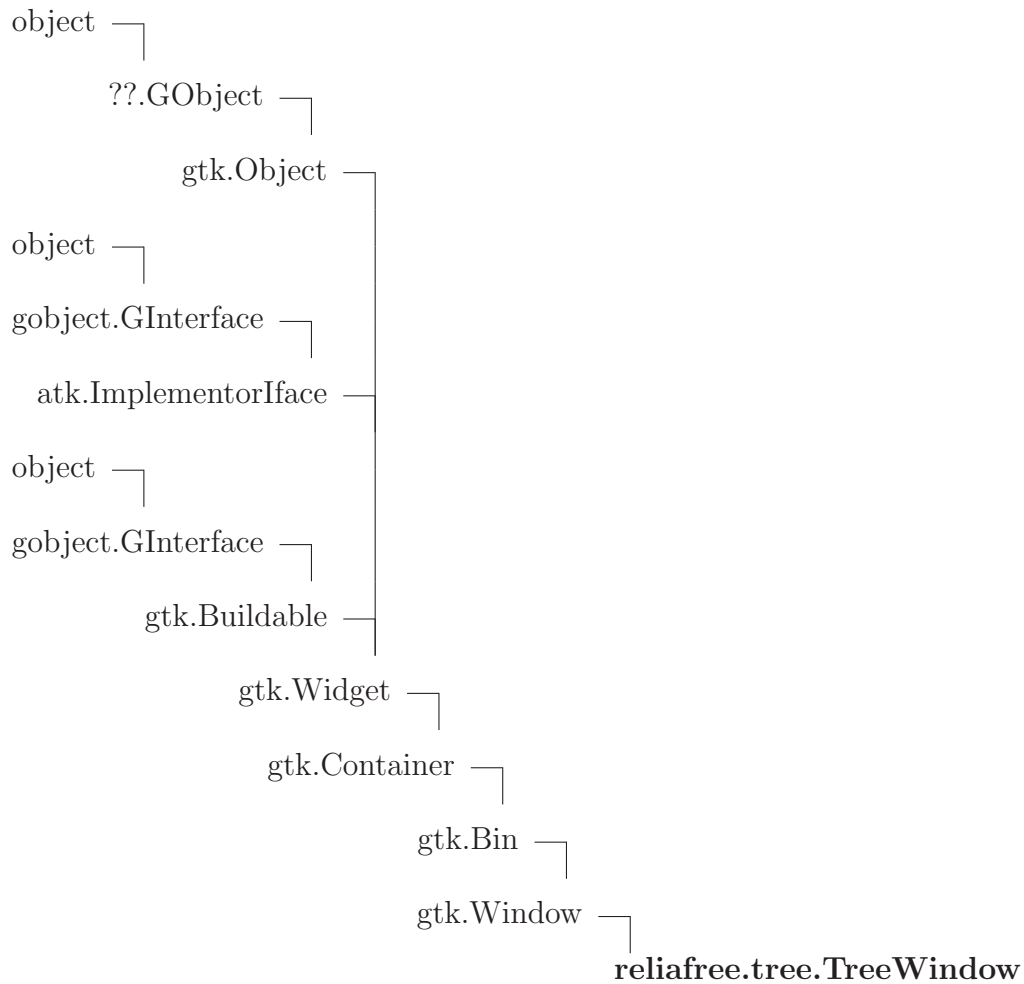
Performs MIL-HDBK-217F part stress hazard rate calculations for the Toggle or Pushbutton Switch Component Class.

Keyword Arguments: *part* – the ReliaFree COMPONENT object.

Inherited from reliafree.switches.switch.Switch(Section 167)

combo_callback(), *entry_callback()*

170 Class `reliafree.tree.TreeWindow`



This class is the window containing the various `gtk.Treeviews`.

170.1 Methods

`__init__(self, application)`

Initializes the TreeBook Object.

Keyword Arguments: `application` – the ReliaFree application.

Overrides: `object.__init__`

`create_menu(self)`

Creates the menu for the TreeBook.

create_toolbar(*self*)

Creates the toolbar for the TreeBook.

notebook_page_switched(*self, notebook, page, page_num*)

Called whenever the Tree Book notebook page is changed.

Keyword Arguments:

notebook -- the Tree Book notebook widget.

page -- the newly selected page widget.

page_num -- the newly selected page number.

0 = Revision Tree

1 = Function Tree

2 = Requirements Tree

3 = Hardware Tree

4 = Validation Tree

5 = Reliability Growth Test Tree

6 = Field Incidents Tree

7 = Parts List

delete_event(*self, widget, event, data=None*)

Used to quit the ReliaFree application when the X in the upper right corner is pressed.

Keyword Arguments: *winmain* – the ReliaFree application main window widget. *event* – the gdk event (GDK_DELETE in this case). *data* – any data to pass when exiting the application.

save_quit_reliafree(*self, button*)

Used to save, then quit the ReliaFree application.

Keyword Arguments: *button* – the toolbar button that was pressed.

quit_reliafree(*self, button*)

Used to quit the ReliaFree application without saving the open database.

Keyword Arguments: *button* – the toolbar button that was pressed.

Inherited from gtk.Window

iter(), *activate_default*(), *activate_focus*(), *activate_key*(), *add_accel_group*(), *add_mnemonic*(), *begin_move_drag*(), *begin_resize_drag*(), *deiconify*(), *do_activate_default*(), *do_activate_focus*(), *do_frame_event*(), *do_keys_changed*(), *do_move_focus*(), *do_set_focus*(), *fullscreen*(),

`get_accept_focus()`, `get_decorated()`, `get_default_size()`, `get_default_widget()`, `get_deletable()`,
`get_destroy_with_parent()`, `get_focus()`, `get_focus_on_map()`, `get_frame_dimensions()`,
`get_gravity()`, `get_group()`, `get_has_frame()`, `get_icon()`, `get_icon_list()`, `get_icon_name()`,
`get_mnemonic_modifier()`, `get_mnemonics_visible()`, `get_modal()`, `get_opacity()`, `get_position()`,
`get_resizable()`, `get_role()`, `get_screen()`, `get_size()`, `get_skip_pager_hint()`, `get_skip_taskbar_hint()`,
`get_title()`, `get_transient_for()`, `get_type_hint()`, `get_urgency_hint()`, `get_window_type()`,
`has_group()`, `has_toplevel_focus()`, `iconify()`, `is_active()`, `maximize()`, `mnemonic_activate()`,
`move()`, `parse_geometry()`, `present()`, `present_with_time()`, `propagate_key_event()`,
`remove_accel_group()`, `remove_mnemonic()`, `reshow_with_initial_size()`, `resize()`, `set_accept_focus()`,
`set_decorated()`, `set_default()`, `set_default_size()`, `set_deletable()`, `set_destroy_with_parent()`,
`set_focus()`, `set_focus_on_map()`, `set_frame_dimensions()`, `set_geometry_hints()`, `set_gravity()`,
`set_has_frame()`, `set_icon()`, `set_icon_from_file()`, `set_icon_list()`, `set_icon_name()`, `set_keep_above()`,
`set_keep_below()`, `set_mnemonic_modifier()`, `set_mnemonics_visible()`, `set_modal()`,
`set_opacity()`, `set_policy()`, `set_position()`, `set_resizable()`, `set_role()`, `set_screen()`,
`set_skip_pager_hint()`, `set_skip_taskbar_hint()`, `set_startup_id()`, `set_title()`, `set_transient_for()`,
`set_type_hint()`, `set_urgency_hint()`, `set_wmclass()`, `stick()`, `tooltips_get_info_from_tip_window()`,
`unfullscreen()`, `unmaximize()`, `unstick()`

Inherited from `gtk.Bin`

`get_child()`

Inherited from `gtk.Container`

`__len__()`, `__nonzero__()`, `add()`, `add_with_properties()`, `check_resize()`, `child_get()`,
`child_get_property()`, `child_set()`, `child_set_property()`, `child_type()`, `children()`, `do_add()`,
`do_check_resize()`, `do_child_type()`, `do_composite_name()`, `do_forall()`, `do_get_child_property()`,
`do_remove()`, `do_set_child_property()`, `do_set_focus_child()`, `forall()`, `foreach()`, `get_border_width()`,
`get_children()`, `get_focus_chain()`, `get_focus_child()`, `get_focus_hadjustment()`, `get_focus_vadjustment()`,
`get_resize_mode()`, `install_child_property()`, `list_child_properties()`, `propagate_expose()`,
`remove()`, `resize_children()`, `set_border_width()`, `set_focus_chain()`, `set_focus_child()`,
`set_focus_hadjustment()`, `set_focus_vadjustment()`, `set_reallocate_redraws()`, `set_resize_mode()`,
`unset_focus_chain()`

Inherited from `gtk.Widget`

`activate()`, `add_accelerator()`, `add_events()`, `add_mnemonic_label()`, `can_activate_accel()`,
`child_focus()`, `child_notify()`, `class_path()`, `create_pango_context()`, `create_pango_layout()`,
`destroy()`, `do_button_press_event()`, `do_button_release_event()`, `do_can_activate_accel()`,
`do_client_event()`, `do_composited_changed()`, `do_configure_event()`, `do_delete_event()`,
`do_destroy_event()`, `do_direction_changed()`, `do_drag_begin()`, `do_drag_data_delete()`,
`do_drag_data_get()`, `do_drag_data_received()`, `do_drag_drop()`, `do_drag_end()`, `do_drag_leave()`,
`do_drag_motion()`, `do_enter_notify_event()`, `do_event()`, `do_expose_event()`, `do_focus()`,
`do_focus_in_event()`, `do_focus_out_event()`, `do_get_accessible()`, `do_grab_broken_event()`,
`do_grab_focus()`, `do_grab_notify()`, `do_hide()`, `do_hide_all()`, `do_hierarchy_changed()`,
`do_key_press_event()`, `do_key_release_event()`, `do_leave_notify_event()`, `do_map()`, `do_map_event()`,

do_mnemonic_activate(), do_motion_notify_event(), do_no_expose_event(), do_parent_set(),
do_popup_menu(), do_property_notify_event(), do_proximity_in_event(), do_proximity_out_event(),
do_realize(), do_screen_changed(), do_scroll_event(), do_selection_clear_event(), do_selection_get(),
do_selection_notify_event(), do_selection_received(), do_selection_request_event(), do_show(),
do_show_all(), do_show_help(), do_size_allocate(), do_size_request(), do_state_changed(),
do_style_set(), do_unmap(), do_unmap_event(), do_unrealize(), do_visibility_notify_event(),
do_window_state_event(), drag_begin(), drag_check_threshold(), drag_dest_add_image_targets(),
drag_dest_add_text_targets(), drag_dest_add_uri_targets(), drag_dest_find_target(),
drag_dest_get_target_list(), drag_dest_get_track_motion(), drag_dest_set(), drag_dest_set_proxy(),
drag_dest_set_target_list(), drag_dest_set_track_motion(), drag_dest_unset(), drag_get_data(),
drag_highlight(), drag_source_add_image_targets(), drag_source_add_text_targets(),
drag_source_add_uri_targets(), drag_source_get_target_list(), drag_source_set(), drag_source_set_icon(),
drag_source_set_icon_name(), drag_source_set_icon_pixmap(), drag_source_set_icon_stock(),
drag_source_set_target_list(), drag_source_unset(), drag_unhighlight(), draw(), en-
sure_style(), error_bell(), event(), freeze_child_notify(), get_accessible(), get_action(),
get_activate_signal(), get_allocation(), get_ancestor(), get_app_paintable(), get_can_default(),
get_can_focus(), get_child_requisition(), get_child_visible(), get_clipboard(), get_colormap(),
get_composite_name(), get_direction(), get_display(), get_double_buffered(), get_events(),
get_extension_events(), get_has_tooltip(), get_has_window(), get_mapped(), get_modifier_style(),
get_name(), get_no_show_all(), get_pango_context(), get_parent(), get_parent_window(),
get_pointer(), get_realized(), get_receives_default(), get_requisition(), get_root_window(),
get_sensitive(), get_settings(), get_size_request(), get_snapshot(), get_state(), get_style(),
get_tooltip_markup(), get_tooltip_text(), get_tooltip_window(), get_toplevel(), get_visible(),
get_visual(), get_window(), grab_add(), grab_default(), grab_focus(), grab_remove(),
has_default(), has_grab(), has_rc_style(), has_screen(), hide(), hide_all(), hide_on_delete(),
input_shape_combine_mask(), intersect(), is_ancestor(), is_composited(), is_drawable(),
is_focus(), is_sensitive(), is_toplevel(), keynav_failed(), list_accel_closures(), list_mnemonic_labels(),
map(), menu_get_for_attach_widget(), modify_base(), modify_bg(), modify_cursor(),
modify_fg(), modify_font(), modify_style(), modify_text(), path(), queue_clear(),
queue_clear_area(), queue_draw(), queue_draw_area(), queue_resize(), queue_resize_no_redraw(),
rc_get_style(), realize(), region_intersect(), remove_accelerator(), remove_mnemonic_label(),
render_icon(), reparent(), reset_rc_styles(), reset_shapes(), selection_add_target(),
selection_add_targets(), selection_clear_targets(), selection_convert(), selection_owner_set(),
selection_remove_all(), send_expose(), send_focus_change(), set_accel_path(), set_activate_signal(),
set_allocation(), set_app_paintable(), set_can_default(), set_can_focus(), set_child_visible(),
set_colormap(), set_composite_name(), set_direction(), set_double_buffered(), set_events(),
set_extension_events(), set_has_tooltip(), set_has_window(), set_mapped(), set_name(),
set_no_show_all(), set_parent(), set_parent_window(), set_realized(), set_receives_default(),
set_redraw_on_allocate(), set_scroll_adjustments(), set_sensitive(), set_set_scroll_adjustments_signal(),
set_size_request(), set_state(), set_style(), set_tooltip_markup(), set_tooltip_text(),
set_tooltip_window(), set_uposition(), set_usize(), set_visible(), set_window(), shape_combine_mask(),
show(), show_all(), show_now(), size_allocate(), size_request(), style_attach(), style_get_property(),
thaw_child_notify(), translate_coordinates(), trigger_tooltip_query(), unmap(), un-
parent(), unrealize()

Inherited from `gtk.Object`

`do_destroy()`, `flags()`, `remove_data()`, `remove_no_notify()`, `set_flags()`, `unset_flags()`

Inherited from `??GObject`

`__copy__()`, `__deepcopy__()`, `__delattr__()`, `__eq__()`, `__gdoc__()`, `__ge__()`, `__gobject_init__()`, `__gt__()`, `__hash__()`, `__le__()`, `__lt__()`, `__ne__()`, `__new__()`, `__repr__()`, `__setattr__()`, `chain()`, `connect()`, `connect_after()`, `connect_object()`, `connect_object_after()`, `disconnect()`, `disconnect_by_func()`, `emit()`, `emit_stop_by_name()`, `freeze_notify()`, `get_data()`, `get_properties()`, `get_property()`, `handler_block()`, `handler_block_by_func()`, `handler_disconnect()`, `handler_is_connected()`, `handler_unblock()`, `handler_unblock_by_func()`, `notify()`, `props()`, `set_data()`, `set_properties()`, `set_property()`, `stop_emission()`, `thaw_notify()`, `weak_ref()`

Inherited from `atk.ImplementorIface`

`ref_accessible()`

Inherited from `gtk.Buildable`

`add_child()`, `construct_child()`, `do_add_child()`, `do_construct_child()`, `do_get_internal_child()`, `do_parser_finished()`, `do_set_name()`, `get_internal_child()`, `parser_finished()`

Inherited from `object`

`__format__()`, `__getattr__()`, `__reduce__()`, `__reduce_ex__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

170.2 Properties

Name	Description
<i>Inherited from <code>gtk.Window</code></i> <code>allow_grow</code> , <code>allow_shrink</code> , <code>configure_notify_received</code> , <code>configure_request_count</code> , <code>decorated</code> , <code>default_widget</code> , <code>destroy_with_parent</code> , <code>focus_widget</code> , <code>frame</code> , <code>frame_bottom</code> , <code>frame_left</code> , <code>frame_right</code> , <code>frame_top</code> , <code>gravity</code> , <code>group</code> , <code>has_focus</code> , <code>has_frame</code> , <code>has_user_ref_count</code> , <code>iconify_initially</code> , <code>keys_changed_handler</code> , <code>maximize_initially</code> , <code>mnemonic_modifier</code> , <code>modal</code> , <code>need_default_position</code> , <code>need_default_size</code> , <code>position</code> , <code>stick_initially</code> , <code>title</code> , <code>transient_parent</code> , <code>type</code> , <code>type_hint</code> , <code>wm_role</code> , <code>wmclass_class</code> , <code>wmclass_name</code>	
<i>Inherited from <code>gtk.Bin</code></i> <code>child</code>	
<i>Inherited from <code>gtk.Container</code></i> <code>border_width</code> , <code>focus_child</code> , <code>has_focus_chain</code> , <code>need_resize</code> , <code>reallocate_redraws</code> , <code>resize_mode</code>	
<i>Inherited from <code>gtk.Widget</code></i> <code>allocation</code> , <code>name</code> , <code>parent</code> , <code>requisition</code> , <code>saved_state</code> , <code>state</code> , <code>style</code> , <code>window</code>	
<i>Inherited from <code>??GObject</code></i>	

continued on next page

Name	Description
<code>--grefcount--</code>	
<i>Inherited from object</i>	
<code>--class--</code>	

170.3 Class Variables

Name	Description
<i>Inherited from gtk.Window</i>	
<code>--gtype--</code>	

171 Class *reliafree.utilities.Options*

171.1 Methods

<code>__init__</code> (<i>self</i> , <i>app</i>)
Allows user to set site-wide options.
Keyword Arguments: <i>app</i> – the ReliaFree application object.

<code>edit_lists</code> (<i>self</i> , <i>button</i>)
--

172 Class *reliafree.validation.Validation*

The Validation class is used to represent the validation tasks in a system being analyzed.

172.1 Methods

`__init__(self, application)`

Initializes the Validation Object.

Keyword Arguments: *application* – the ReliaFree application.

`load_attributes(self)`

Loads the Validation Object attribute values from the Validation Object TreeView.

`create_tree(self)`

Creates the Validation TreeView and connects it to callback functions to handle editing. Background and foreground colors can be set using the user-defined values in the ReliaFree configuration file.

`load_tree(self)`

Loads the Validation treeview model with system information. This information can be stored either in a MySQL or SQLite3 database.

`edit_vandv_tree(self, cell, path, new_text, position, model)`

Called whenever a TreeView CellRenderer is edited.

Keyword Arguments: *cell* – the CellRenderer that was edited. *path* – the TreeView path of the CellRenderer that was edited. *new_text* – the new text in the edited CellRenderer. *position* – the column position of the edited CellRenderer. *model* – the TreeModel the CellRenderer belongs to.

`add_task(self, widget)`

Adds a new Verification & Validation activity to the Program's database.

Keyword Arguments: *widget* – the widget that called this function.

delete_task(*self*, *menuitem*)

Deletes the currently selected V&V activity from the Program's MySQL database.

Keyword Arguments: *menuitem* – the `gtk.MenuItem` that called this function.

save_validation(*self*, *widget*)

Saves the Validation Object treeview information to the Program's database.

Keyword Arguments: *widget* – the widget that called this function.

load_general_data(*self*)

Loads the widgets with general information about the Validation Object.

172.2 Class Variables

Name	Description
<code>n_attributes</code>	Value: 13

173 Class reliefree.widgets.Assistant

173.1 Methods

<code>__init__(self)</code>

<code>button_pressed(self, assistant, button)</code>
--

Index

- reliafree (*package*), 2–3
 - reliafree.assembly (*module*), 4
 - reliafree.assembly.Assembly (*class*), 83–84
 - reliafree.calculations (*module*), 5–8
 - reliafree.calculations.calculate (*function*), 5
 - reliafree.calculations.calculate_part (*function*), 5
 - reliafree.calculations.calculate_project (*function*), 5
 - reliafree.calculations.dormant_hazard_rate (*function*), 7
 - reliafree.calculations.overstressed (*function*), 5
 - reliafree.calculations.similar_hazard_rate (*function*), 6
 - reliafree.capacitors (*package*), 9
 - reliafree.capacitors.capacitor (*module*), 10
 - reliafree.capacitors.electrolytic (*module*), 11
 - reliafree.capacitors.fixed (*module*), 12
 - reliafree.capacitors.variable (*module*), 13
 - reliafree.component (*module*), 14
 - reliafree.component.Component (*class*), 109–110
 - reliafree.configuration (*module*), 15–17
 - reliafree.configuration.ReliaFreeConf (*class*), 111
 - reliafree.connections (*package*), 18
 - reliafree.connections.connection (*module*), 19
 - reliafree.connections.multipin (*module*), 20
 - reliafree.connections.pcb (*module*), 21
 - reliafree.connections.socket (*module*), 22
 - reliafree.connections.solder (*module*), 23
 - reliafree.function (*module*), 24
 - reliafree.function.Function (*class*), 124–125
 - reliafree.hardware (*module*), 25
 - reliafree.hardware.Hardware (*class*), 126
- reliafree.inductors (*package*), 26
 - reliafree.inductors.coil (*module*), 27
 - reliafree.inductors.inductor (*module*), 28
 - reliafree.inductors.transformer (*module*), 29
- reliafree.integrated_circuits (*package*), 30
 - reliafree.integrated_circuits.gaas (*module*), 31
 - reliafree.integrated_circuits.ic (*module*), 32
 - reliafree.integrated_circuits.linear (*module*), 33
 - reliafree.integrated_circuits.logic (*module*), 34
 - reliafree.integrated_circuits.memory (*module*), 35
 - reliafree.integrated_circuits.microprocessor (*module*), 36
 - reliafree.integrated_circuits.palpla (*module*), 37
 - reliafree.integrated_circuits.vlsi (*module*), 38
- reliafree.login (*module*), 39
 - reliafree.login.Login (*class*), 160–164
- reliafree.main (*module*), 40
 - reliafree.main.main (*function*), 40
 - reliafree.main.ReliaFree (*class*), 165
- reliafree.meters (*package*), 41
 - reliafree.meters.meter (*module*), 42
- reliafree.miscellaneous (*package*), 43
 - reliafree.miscellaneous.crystal (*module*), 44
 - reliafree.miscellaneous.filter (*module*), 45
 - reliafree.miscellaneous.fuse (*module*), 46
 - reliafree.miscellaneous.lamp (*module*), 47
- reliafree.mysql (*module*), 48
 - reliafree.mysql.MySQLInterface (*class*), 178
- reliafree.notebook (*module*), 49
 - reliafree.notebook.WorkBookWindow (*class*), 179–183

- reliafree.partlist (*module*), 50
 - reliafree.partlist.PartsListWindow (*class*), 184–190
- reliafree.relays (*package*), 51
 - reliafree.relays.relay (*module*), 52
- reliafree.requirement (*module*), 53
 - reliafree.requirement.Requirement (*class*), 195–196
- reliafree.resistors (*package*), 54
 - reliafree.resistors.fixed (*module*), 55
 - reliafree.resistors.resistor (*module*), 56
 - reliafree.resistors.thermistor (*module*), 57
 - reliafree.resistors.variable (*module*), 58
- reliafree.revision (*module*), 59
 - reliafree.revision.Revision (*class*), 226–227
- reliafree.semiconductors (*package*), 60
 - reliafree.semiconductors.diode (*module*), 61
 - reliafree.semiconductors.optoelectronics (*module*), 62
 - reliafree.semiconductors.semiconductor (*module*), 63
 - reliafree.semiconductors.thyristor (*module*), 64
 - reliafree.semiconductors.transistor (*module*), 65
- reliafree.switches (*package*), 66
 - reliafree.switches.breaker (*module*), 67
 - reliafree.switches.rotary (*module*), 68
 - reliafree.switches.sensitive (*module*), 69
 - reliafree.switches.switch (*module*), 70
 - reliafree.switches.thumbwheel (*module*), 71
 - reliafree.switches.toggle (*module*), 72
- reliafree.tree (*module*), 73
 - reliafree.tree.TreeWindow (*class*), 275–280
- reliafree.utilities (*module*), 74–77
 - reliafree.utilities.add_items (*function*), 75
 - reliafree.utilities.build_comp_ref_des (*function*), 76
 - reliafree.utilities.calculate_max_text_width (*function*), 76
 - reliafree.utilities.create_comp_ref_des (*function*), 76
 - reliafree.utilities.create_logger (*function*), 74
 - reliafree.utilities.create_project (*function*), 74
 - reliafree.utilities.cut_copy_paste (*function*), 75
 - reliafree.utilities.delete_project (*function*), 75
 - reliafree.utilities.dir_exists (*function*), 74
 - reliafree.utilities.file_exists (*function*), 74
 - reliafree.utilities.find (*function*), 76
 - reliafree.utilities.find_all_in_list (*function*), 76
 - reliafree.utilities.import_project (*function*), 75
 - reliafree.utilities.open_project (*function*), 75
 - reliafree.utilities.Options (*class*), 281
 - reliafree.utilities.options (*function*), 76
 - reliafree.utilities.parse_config (*function*), 74
 - reliafree.utilities.paste (*function*), 75
 - reliafree.utilities.redo (*function*), 76
 - reliafree.utilities.save_project (*function*), 75
 - reliafree.utilities.select_all (*function*), 76
 - reliafree.utilities.set_part_model (*function*), 76
 - reliafree.utilities.split_string (*function*), 74
 - reliafree.utilities.undo (*function*), 76
- reliafree.validation (*module*), 78
 - reliafree.validation.Validation (*class*), 282–283
- reliafree.widgets (*module*), 79–82
 - reliafree.widgets.Assistant (*class*), 284
 - reliafree.widgets.edit_tree (*function*), 81
 - reliafree.widgets.format_cell (*function*), 81
 - reliafree.widgets.load_combo (*function*), 79
 - reliafree.widgets.make_button (*function*),

79
reliafree.widgets.make_check_button (*function*), 79
reliafree.widgets.make_combo (*function*),
79
reliafree.widgets.make_dialog (*function*),
80
reliafree.widgets.make_entry (*function*),
80
reliafree.widgets.make_label (*function*),
80
reliafree.widgets.make_text_view (*function*), 81
reliafree.widgets.make_treeview (*function*),
81
reliafree.widgets.resize_wrap (*function*),
82