ReliaFRee

API Documentation

April 13, 2012

Contents

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)*
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  - **gaas** *(Section 24, p. 31)*
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  - **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)*

1.2 Variables

Name	Description
__package__	**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
__package__	**Value:** `'reliafree'`

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*)

Iterively 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	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).

              |           |    Full   |           |           |
              |   Space   |  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 |Airborne|Airborne|Naval  |Naval  |Space  |Space  |
              |Active |Active  |Active  |Active |Active |Active |Active |
              |to     |to      |to      |to     |to     |to     |to     |
              |Ground |Airborne|Ground  |Naval  |Ground |Space  |Ground |
              |Passive|Passive |Passive |Passive|Passive|Passive|Passive|
--------------+-------+--------+--------+-------+-------+-------+-------+
Integrated    | 0.08  |  0.06  |  0.04  | 0.06  | 0.05  | 0.10  | 0.30  |
Circuits      |       |        |        |       |       |       |       |
--------------+-------+--------+--------+-------+-------+-------+-------+
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       | 0.04  |  0.02  |  0.01  | 0.03  | 0.01  | 0.08  | 0.20  |
Boards        |       |        |        |       |       |       |       |
--------------+-------+--------+--------+-------+-------+-------+-------+
Transformers  | 0.20  |  0.20  |  0.20  | 0.30  | 0.30  | 0.50  | 1.00  |
--------------+-------+--------+--------+-------+-------+-------+-------+
```

3.2 Variables

Name	Description
__package__	**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
__package__	**Value:** `'reliafree.capacitors'`

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
__package__	**Value:** `'reliafree.capacitors'`

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
__package__	**Value:** `'reliafree.capacitors'`

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 Componnt 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
__package__	**Value:** `'reliafree.capacitors'`

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
__package__	**Value:** `'reliafree.capacitors'`

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
__package__	**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	Global list containing the colors to use for various widgets. 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 **Value:** `[]`
RELIAFREE_PREFIX	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. 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 **Value:** `[]`
RELIAFREE_MODULES	Global list to house information about the active modules. 1 = active, 0 = inactive. 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 **Value:** `[1, 1, 1, 1, 0, 0, 0, 0]`

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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
__package__	**Value:** `'reliafree.connections'`

12 Module reliafree.connections.connection

12.1 Classes

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

12.2 Variables

Name	Description
__package__	**Value:** `'reliafree.connections'`

13 Module reliafree.connections.multipin

13.1 Classes

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

13.2 Variables

Name	Description
__package__	**Value:** `'reliafree.connections'`

14 Module reliafree.connections.pcb

14.1 Classes

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

14.2 Variables

Name	Description
__package__	**Value:** `'reliafree.connections'`

15 Module reliafree.connections.socket

15.1 Classes

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

15.2 Variables

Name	Description
__package__	**Value:** `'reliafree.connections'`

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
__package__	**Value:** `'reliafree.connections'`

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
__package__	**Value:** `'reliafree'`

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
__package__	**Value:** `'reliafree'`

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
__package__	**Value:** `'reliafree.inductors'`

20 Module reliafree.inductors.coil

20.1 Classes

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

20.2 Variables

Name	Description
__package__	**Value:** `'reliafree.inductors'`

21 Module reliafree.inductors.inductor

21.1 Classes

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

21.2 Variables

Name	Description
__package__	**Value:** `'reliafree.inductors'`

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
__package__	**Value:** `'reliafree.inductors'`

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
__package__	**Value:** `'reliafree.integrated_circuits'`

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
__package__	**Value:** `'reliafree.integrated_circuits'`

25 Module reliafree.integrated_circuits.ic

25.1 Classes

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

25.2 Variables

Name	Description
__package__	**Value:** `'reliafree.integrated_circuits'`

26 Module reliafree.integrated_circuits.linear

26.1 Classes

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

26.2 Variables

Name	Description
__package__	**Value:** `'reliafree.integrated_circuits'`

27 Module reliafree.integrated_circuits.logic

27.1 Classes

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

27.2 Variables

Name	Description
__package__	**Value:** `'reliafree.integrated_circuits'`

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
__package__	**Value:** `'reliafree.integrated_circuits'`

29 Module reliafree.integrated_circuits.microprocessor

29.1 Classes

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

29.2 Variables

Name	Description
__package__	**Value:** `'reliafree.integrated_circuits'`

30 Module reliafree.integrated_circuits.palpla

30.1 Classes

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

30.2 Variables

Name	Description
__package__	**Value:** `'reliafree.integrated_circuits'`

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
__package__	**Value:** `'reliafree.integrated_circuits'`

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
__package__	**Value:** `'reliafree'`

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
__package__	**Value:** `'reliafree'`

34 Package reliafree.meters

34.1 Modules

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

34.2 Variables

Name	Description
__package__	**Value:** `'reliafree.meters'`

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
__package__	**Value:** `'reliafree.meters'`

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
__package__	**Value:** `'reliafree.miscellaneous'`

37 Module reliafree.miscellaneous.crystal

37.1 Classes

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

37.2 Variables

Name	Description
__package__	**Value:** `'reliafree.miscellaneous'`

38 Module reliafree.miscellaneous.filter

38.1 Classes

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

38.2 Variables

Name	Description
__package__	**Value:** `'reliafree.miscellaneous'`

39 Module reliafree.miscellaneous.fuse

39.1 Classes

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

39.2 Variables

Name	Description
__package__	**Value:** `'reliafree.miscellaneous'`

40 Module reliafree.miscellaneous.lamp

40.1 Classes

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

40.2 Variables

Name	Description
__package__	**Value:** `'reliafree.miscellaneous'`

41 Module reliafree.mysql

41.1 Classes

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

41.2 Variables

Name	Description
has_mysqldb	**Value:** `True`
__package__	**Value:** `'reliafree'`

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
__package__	**Value:** `'reliafree'`

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
__package__	**Value:** `'reliafree'`

44 Package reliafree.relays

44.1 Modules

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

44.2 Variables

Name	Description
__package__	**Value:** `'reliafree.relays'`

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
__package__	**Value:** `'reliafree.relays'`

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
__package__	**Value:** `'reliafree'`

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
__package__	**Value:** `'reliafree.resistors'`

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
__package__	**Value:** `'reliafree.resistors'`

49 Module reliafree.resistors.resistor

49.1 Classes

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

49.2 Variables

Name	Description
__package__	**Value:** `'reliafree.resistors'`

50 Module reliafree.resistors.thermistor

50.1 Classes

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

50.2 Variables

Name	Description
__package__	**Value:** `'reliafree.resistors'`

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
__package__	**Value:** `'reliafree.resistors'`

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
__package__	**Value:** `'reliafree'`

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
__package__	**Value:** `'reliafree.semiconductors'`

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
__package__	**Value:** `'reliafree.semiconductors'`

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
__package__	**Value:** `'reliafree.semiconductors'`

56 Module reliafree.semiconductors.semiconductor

56.1 Classes

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

56.2 Variables

Name	Description
__package__	**Value:** `'reliafree.semiconductors'`

57 Module reliafree.semiconductors.thyristor

57.1 Classes

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

57.2 Variables

Name	Description
__package__	**Value:** `'reliafree.semiconductors'`

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
__package__	**Value:** `'reliafree.semiconductors'`

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
__package__	**Value:** `'reliafree.switches'`

60 Module reliafree.switches.breaker

60.1 Classes

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

60.2 Variables

Name	Description
__package__	**Value:** `'reliafree.switches'`

61 Module reliafree.switches.rotary

61.1 Classes

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

61.2 Variables

Name	Description
__package__	**Value:** `'reliafree.switches'`

62 Module reliafree.switches.sensitive

62.1 Classes

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

62.2 Variables

Name	Description
__package__	**Value:** `'reliafree.switches'`

63 Module reliafree.switches.switch

63.1 Classes

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

63.2 Variables

Name	Description
__package__	**Value:** `'reliafree.switches'`

64 Module reliafree.switches.thumbwheel

64.1 Classes

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

64.2 Variables

Name	Description
__package__	**Value:** `'reliafree.switches'`

65 Module reliafree.switches.toggle

65.1 Classes

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

65.2 Variables

Name	Description
__package__	**Value:** `'reliafree.switches'`

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
__package__	**Value:** `'reliafree'`

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*)

Iterively 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
__package__	**Value:** `'reliafree'`

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
__package__	**Value:** `'reliafree'`

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 GtkResponseT...)

```
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
__package__	**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_fraca_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 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-definded index for the calling combobx.
```

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

reliafree.capacitors.capacitor.Capacitor
└ **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

reliafree.capacitors.capacitor.Capacitor
└
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

reliafree.capacitors.capacitor.Capacitor
└ **reliafree.capacitors.fixed.MetallizedPaper**

Fixed Metallized Paper, Paper-Plastic, and Plastic Capacitor Componnt 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

reliafree.capacitors.capacitor.Capacitor
└ **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

reliafree.capacitors.capacitor.Capacitor
└
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

reliafree.capacitors.capacitor.Capacitor
└ **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

reliafree.capacitors.capacitor.Capacitor
└ **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(*self*, *part*)

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

Keyword Arguments: part – 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

reliafree.assembly.Assembly
└
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_fraca_incident_tab(), load_similar_item_data(), load_vandv_tab()

91.2 Class Variables

Name	Description
Inherited from reliafree.assembly.Assembly (Section 70)	
n_attributes	

92 Class reliafree.configuration.ReliaFreeConf

The ReliaFree configuration class.

92.1 Methods

__init__(*self*, *level*='site')

```
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'.
```

create_default_configuration(*self*)

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

write_configuration(*self*)

Writes changes to the user's configuration file.

read_configuration(*self*)

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-definded index for the calling combobx.
```

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 Mulitpin 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 Mulitpin 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

reliafree.connections.connection.Connection
└ **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

reliafree.connections.connection.Connection
└ **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

reliafree.connections.connection.Connection
└ **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(*self*, *part*)

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

Keyword Arguments: part – 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 editting. 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 wisget 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

__init__(*self*, *application*)

Initializes the Hardware Object.

Keyword Arguments: application – the ReliaFree application.

create_tree(*self*)

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

load_tree(*self*)

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

save_hardware(*self*)

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-definded index for the calling combobx.
```

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

__init__(*self*)

Initializes the Audio 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 Audio 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 Audio 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()

104 Class reliafree.inductors.transformer.LowPowerPulse

reliafree.inductors.inductor.Inductor
└
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__(*self*)

Initializes the Radio Frequency 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 Radio Frequency 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 Radio Frequency 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()

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-definded index for the calling combobx.
```

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.GaAs
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_circ
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-definded index for the calling combobx.

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

reliafree.integrated_circuits.ic.IntegratedCircuit
└ **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-definded index for the calling combobx.

Overrides: reliafree.integrated_circuits.ic.IntegratedCircuit.combo_callback extit(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.MemoryDR**

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.MemoryEE**

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-definded index for the calling combobx.
```

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.MemoryRO**

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.MemorySR**

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.Micr**

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(*self*, *part*)

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

Keyword Arguments: part – 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__
extit(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-definded index for the calling combobx.

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.

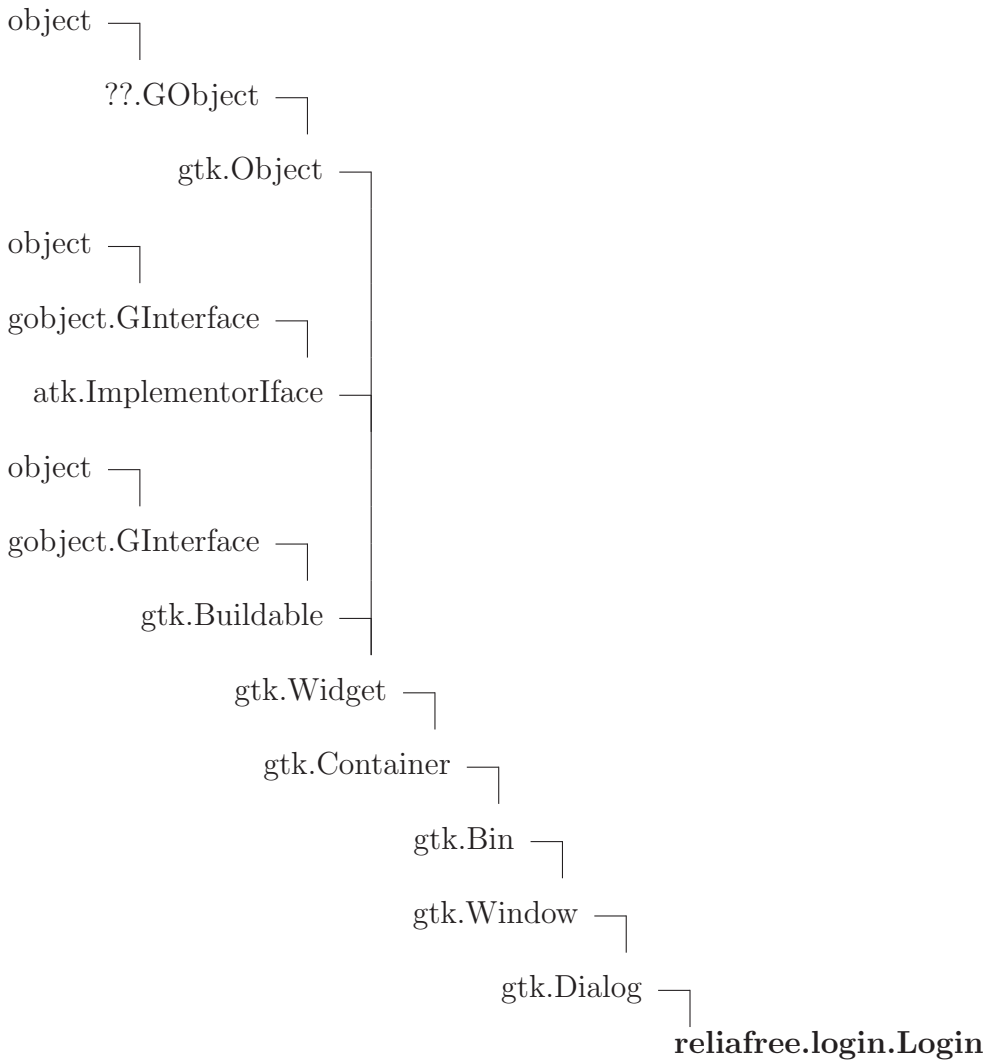
Keyword Arguments: part – the ReliaFree COMPONENT object.

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.

119 Class reliafree.login.Login



The Login class is used to create a window that allows the user to enter login information for the MySQL server to use. This includes server, port, MySQL user name, and password.

119.1 Methods

__**init**__(*self*, *title*)
Initializes the Login Object.
Overrides: object.__init__

ok(*self*, *dialog*, *response*)

Callback function to handle OK button response.

cancel(*self*, *dialog*)

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_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__(), __getattribute__(), __reduce__(), __reduce_ex__(), __sizeof__(), __str__(), __subclasshook__()

119.2 Properties

Name	Description
Inherited from gtk.Dialog action_area, vbox	
Inherited from gtk.Window 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	
Inherited from gtk.Bin child	
Inherited from gtk.Container border_width, focus_child, has_focus_chain, need_resize, reallocate_redraws, resize_mode	
Inherited from gtk.Widget allocation, name, parent, requisition, saved_state, state, style, window	
Inherited from ??.GObject __grefcount__	
Inherited from object __class__	

119.3 Class Variables

Name	Description
Inherited from gtk.Dialog __gtype__	

120 Class reliafree.main.ReliaFree

This is the ReliaFree class.

120.1 Methods

__init__(*self*)

read_configuration(*self*)

This method reads the site and user configuration files to establish settings for The ReliaFree application.

load_system(*self*)

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-definded index for the calling combobx.

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-definded index for the calling combobx.
```

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-definded index for the calling combobx.

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-definded index for the calling combobx.

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-definded index for the calling combobx.

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.

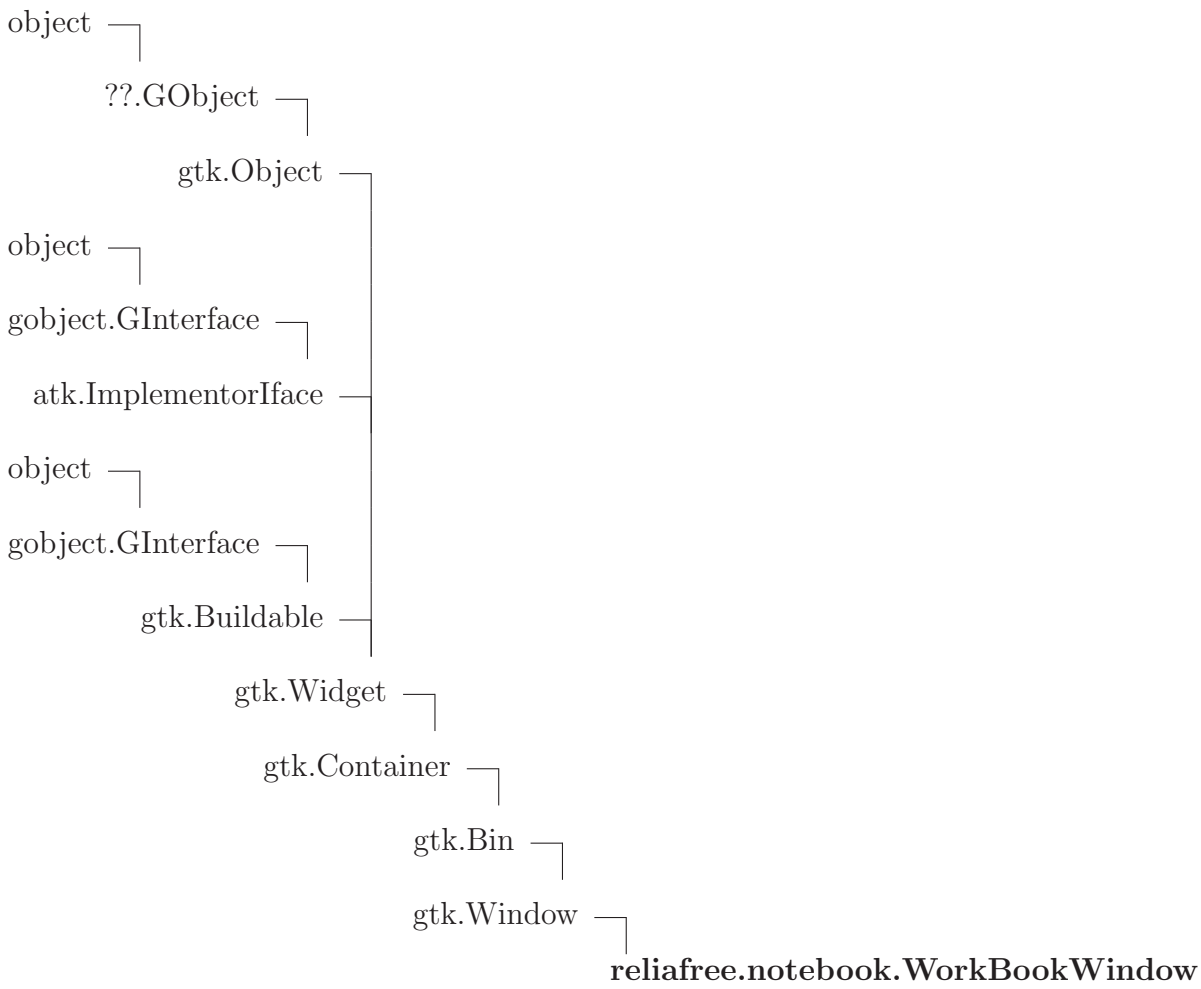
init_db(*self*, *path*, *params*={})

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 selectes 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__(), __getattribute__(), __reduce__(), __reduce_ex__(), __sizeof__(), __str__(), __subclasshook__()

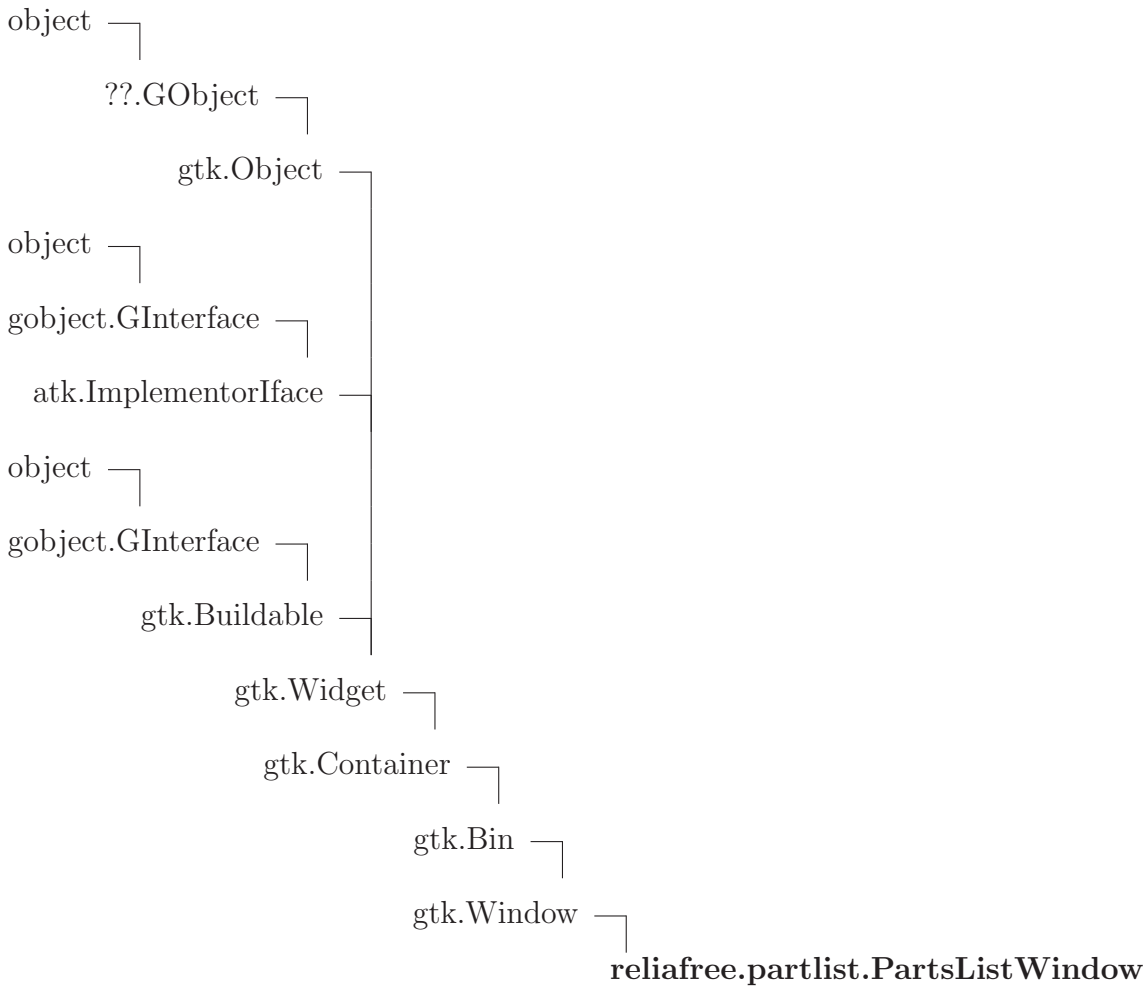
128.2 Properties

Name	Description
Inherited from gtk.Window 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	
Inherited from gtk.Bin child	
Inherited from gtk.Container border_width, focus_child, has_focus_chain, need_resize, reallocate_redraws, resize_mode	
Inherited from gtk.Widget allocation, name, parent, requisition, saved_state, state, style, window	
Inherited from ??.GObject __grefcount__	
Inherited from object __class__	

128.3 Class Variables

Name	Description
Inherited from gtk.Window __gtype__	

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(), 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(), 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__(), __getattribute__(), __reduce__(), __reduce_ex__(), __sizeof__(), __str__(), __subclasshook__()

129.2 Properties

Name	Description
Inherited from gtk.Window 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	
Inherited from gtk.Bin child	
Inherited from gtk.Container border_width, focus_child, has_focus_chain, need_resize, reallocate_redraws, resize_mode	
Inherited from gtk.Widget allocation, name, parent, requisition, saved_state, state, style, window	
Inherited from ??.GObject __grefcount__	
Inherited from object __class__	

129.3 Class Variables

Name	Description
Inherited from gtk.Window	
__gtype__	

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-definded index for the calling combobx.
```

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-definded index for the calling combobx.
```

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 editting. 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 wisget 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
n_attributes	**Value:** 13

133 Class reliafree.resistors.fixed.Composition

reliafree.resistors.resistor.Resistor
└
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

reliafree.resistors.resistor.Resistor
└ **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(*self*, *part*)

Performs MIL-HDBK-217F part stress hazard rate calculations for the Fixed Value Film Resistor Component Class.

Keyword Arguments: part – 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

reliafree.resistors.resistor.Resistor
└ **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

reliafree.resistors.resistor.Resistor
└ **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

reliafree.resistors.resistor.Resistor
└
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

reliafree.resistors.resistor.Resistor
└ **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-definded index for the calling combobx.
```

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-definded index for the calling combobx.
```

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.Va 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.WirewoundF 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 combobx.
```

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

reliafree.resistors.resistor.Resistor
└ **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-definded index for the calling combobx.
```

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-definded index for the calling combobx.
```

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

reliafree.resistors.resistor.Resistor
└
reliafree.resistors.variable.NonWirewound

Variable Value Nonwirewound Resistor Component Class.

Hazard Rate Models:

1. MIL-HDBK-217F, section 9.15

143.1 Methods

__init__(*self*)

Initializes the Variable Value NonWirewound 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 Nonwirewound 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 Nonwirewound 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 Nonwirewound 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 combobx.
```

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-definded index for the calling combobx.
```

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-definded index for the calling combobx.
```

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-definded index for the calling combobx.
```

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-definded index for the calling combobx.
```

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__ extit(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-definded index for the calling combobx.
```

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 editting. 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.HighFrequ

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: 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 Diode Semicondutor
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 combobx.
```

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.LowFreque**

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 Semicondutor
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 combobx.
```

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.D**

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: 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

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-definded index for the calling combobx.
```

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.D**

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: 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

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.L

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-definded index for the calling combobx.
```

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.HFC
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 Semicondutor 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 combobx.
```

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 Semicondutor 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.Thyrist**

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: 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

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.HFGaA

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: 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 GaAs FET 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 combobx.
```

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.HFHP

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-definded index for the calling combobx.
```

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.HFLN

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: 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

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.HFSiF

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: 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

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-definded index for the calling combobx.
```

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.LFBip

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: 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 Bipolar Transistor
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 combobx.
```

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.LFSiFE

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: 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 Silicon FET 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 combobx.
```

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.Unijun**

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: reliafree.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-definded index for the calling combobx.
```

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

reliafree.switches.switch.Switch
└
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*)

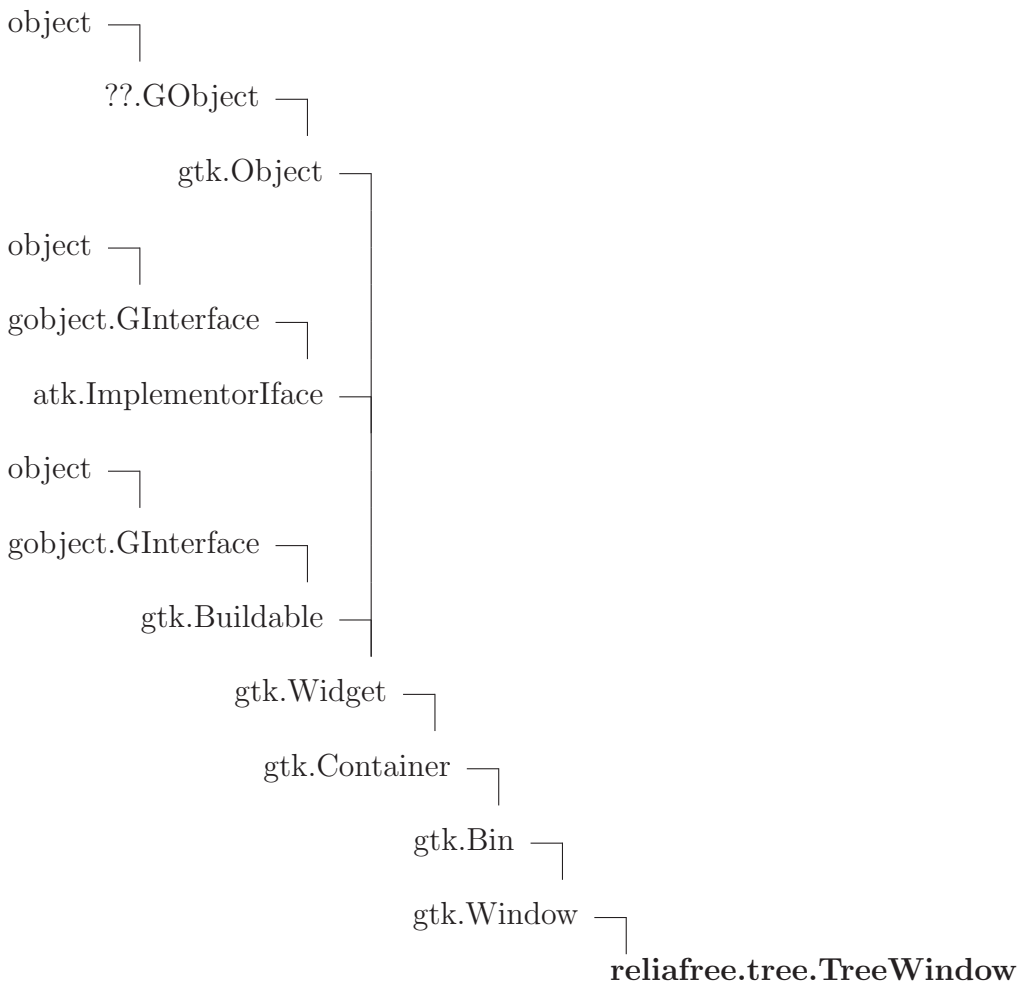
Performs MIL-HDBK-217F part stress hazard rate calculations for the Toggle or Pushbutton Switch Component Class.

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_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__(), __getattribute__(), __reduce__(), __reduce_ex__(), __sizeof__(), __str__(), __subclasshook__()

170.2 Properties

Name	Description
Inherited from gtk.Window 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	
Inherited from gtk.Bin child	
Inherited from gtk.Container border_width, focus_child, has_focus_chain, need_resize, reallocate_redraws, resize_mode	
Inherited from gtk.Widget allocation, name, parent, requisition, saved_state, state, style, window	
Inherited from ??.GObject	

continued on next page

Name	Description
__grefcount__	
Inherited from object __class__	

170.3 Class Variables

Name	Description
Inherited from gtk.Window __gtype__	

171 Class reliafree.utilities.Options

171.1 Methods

__init__(*self*, *app*)

Allows user to set site-wide options.

Keyword Arguments: app – the ReliaFree application object.

edit_lists(*self*, *button*)

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 editting. 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 Verfication & 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
n_attributes	**Value:** `13`

173 Class reliafree.widgets.Assistant

173.1 Methods

__init__(*self*)

button_pressed(*self*, *assistant*, *button*)

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