

Electrolytic Capacitors

Features:

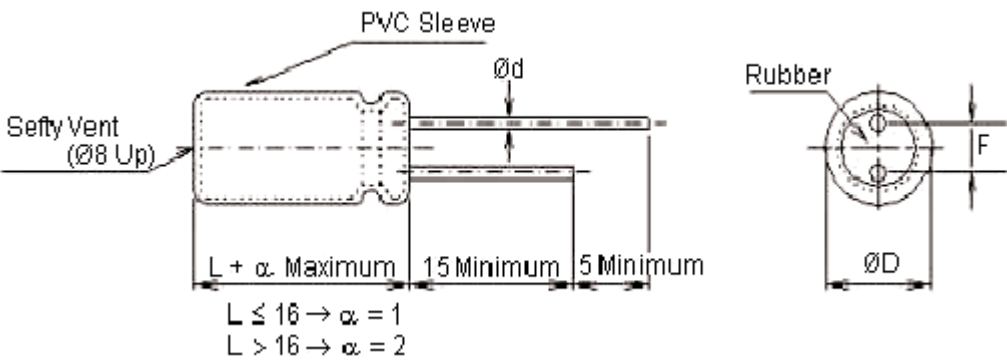
- Material : Aluminium.
- Low ESR.
- GLR series aluminium electrolytic capacitors are high reliable with low impedance, low ESR and guaranteed 2,000 hours at 105°C.
- Suitable for switching power and automobile industry.

Specification Table

No.	Item	Performance																					
1	Operating Temperature Range	-55 to +105°C																					
2	Rated Working Voltage Range	10 - 100 V dc																					
3	Nominal Capacitance Range	0.47 - 4,700 µF																					
4	Capacitance Tolerance	±20% (at +20°C, 120 Hz)																					
5	Leakage Current	I ≤ 0.01 CV or 2 (µA) after two mins. Application of rated working voltage at +20°C																					
6	Dissipation Factor (tan δ) (120 Hz / +20°C)	<table><tr><td>Working Voltage (V)</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>100</td></tr><tr><td>tan δ Max.</td><td>0.12</td><td>0.1</td><td>0.08</td><td>0.07</td><td>0.06</td><td>0.05</td></tr></table>	Working Voltage (V)	10	16	25	35	50	100	tan δ Max.	0.12	0.1	0.08	0.07	0.06	0.05							
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tan δ Max.	0.12	0.1	0.08	0.07	0.06	0.05																	
7	Characteristics at Low Temperature (Stability at 120 Hz)	<table><tr><td>Working Voltage (V)</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>100</td></tr><tr><td>-25°C / +25°C</td><td>3</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>-55°C / +25°C</td><td>4</td><td>3</td><td>3</td><td>3</td><td>3</td><td>4</td></tr></table>	Working Voltage (V)	10	16	25	35	50	100	-25°C / +25°C	3	2	2	2	2	2	-55°C / +25°C	4	3	3	3	3	4
Working Voltage (V)	10	16	25	35	50	100																	
-25°C / +25°C	3	2	2	2	2	2																	
-55°C / +25°C	4	3	3	3	3	4																	
8	High Temperature Loading	After 5,000 hours application of DC rated working voltage at +105°C, The capacitor shall meet the following limits: Post test requirements at +20°C. <table><tr><td>Leakage current</td><td>≤ the initial specified value</td></tr><tr><td>Capacitance change</td><td>≤ ±15% of initial measured value</td></tr><tr><td>Dissipation factor (tan δ)</td><td>≤ 150% of initial specified value</td></tr></table>	Leakage current	≤ the initial specified value	Capacitance change	≤ ±15% of initial measured value	Dissipation factor (tan δ)	≤ 150% of initial specified value															
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9	Shelf Life	After storage for 1,000 hours at +105°C with no voltage applied. Post test requirements at +20°C same limits as high temperature loading.																					
10	Solvent Proof	This capacitor can withstand circuit-board cleaning within 5 mins. dipped in Freon TE,TES, at 40°C (ultrasonic also permitted) or in the steam of these cleaners.																					

Electrolytic Capacitors

Diagram of Dimensions



ØD (+ 0.5 Maximum)	10	16
F (±0.5)	5	7.5
Ød (±0.02)	0.6	0.8

Dimensions : Millimetres

Case Size Table ØD × L (mm)

W V (SV) μF	10 (13)	16 (20)	25 (32)	35 (44)	50 (63)	100 (125)
0.47	-	-	-	-	5 × 11	6.3 × 11
1	-	-	-	-		
2.2	-	-	-	-		
3.3	-	-	-	-		8 × 11
4.7	-	-	-	-		
10	-	-	-	5 × 11		
22	-	-	5 × 11	6.3 × 11	6.3 × 11	10 × 16
33	-	5 × 11	6.3 × 11		8 × 11	10 × 21
47	5 × 11	6.3 × 11			8 × 16	10 × 26
68	8 × 16	8 × 16	8 × 16	8 × 16		13 × 26
100			10 × 13	10 × 21	10 × 13	13 × 32
220					10 × 26	16 × 36
330			10 × 13	10 × 21	10 × 26	13 × 26
470	10 × 13	10 × 21	10 × 26	13 × 26	13 × 32	-
680	10 × 21	10 × 26	13 × 26	13 × 32	13 × 42	-
1,000		13 × 26	13 × 32	13 × 42	16 × 42	-
2,200	13 × 26	13 × 32	13 × 42	16 × 42	-	-
3,300	13 × 25	13 × 42	16 × 42	-	-	-
4,700	16 × 32	16 × 42	-	-	-	-

Dimensions : Millimetres

Electrolytic Capacitors

Maximum Ripple Current (mA) rms Maximum (100 kHz, +105°C)

W V (SV) μF	10 (13)	16 (20)	25 (32)	35 (44)	50 (63)	100 (125)
0.47	-	-	-	-	5	7
1	-	-	-	-	10	12
2.2	-	-	-	-	25	28
3.3	-	-	-	-	43	50
4.7	-	-	-	-	48	53
10	-	-	-	70	79	90
22	-	-	100	110	118	320
33	-	105	120	135	250	380
47	105	150	160	250	360	450
68	175	250	250	370	400	600
100	250	300	390	400	500	750
220	410	450	600	700	900	1,100
330	500	600	800	950	1,200	1,600
470	650	750	1,000	1,200	1,550	-
680	830	1,000	1,200	1,600	2,100	-
1,000	1,000	1,300	1,800	2,200	2,500	-
2,200	1,650	2,500	2,200	2,800	-	-
3,300	2,000	2,700	3,100	-	-	-
4,700	2,500	-	-	-	-	-

Maximum Impedance Maximum (100 kHz, +25°C)

W V (SV) μF	10 (13)	16 (20)	25 (32)	35 (44)	50 (63)	100 (125)
0.47	-	-	-	-	5.4	5.4
1	-	-	-	-	2.3	2.3
2.2	-	-	-	-	1.9	1.8
3.3	-	-	-	-	1.5	1.4
4.7	-	-	-	-	1.4	1.3
10	-	-	-	1.5	1.2	0.7
22	-	-	1.2	0.8	0.75	0.65
33	-	1.2	0.8	0.7	0.65	0.45
47	1.2	0.8	0.7	0.65	0.49	0.398
68	0.9	0.7	0.4	0.38	0.35	0.32
100	0.7	0.35	0.33	0.321	0.298	0.254
220	0.19	0.182	0.175	0.168	0.158	0.123
330	0.175	0.156	0.145	0.138	0.127	0.102

Dimensions : Millimetres

Electrolytic Capacitors

Maximum Impedance Maximum (100 kHz, +25°C)

W V (SV) µF	10 (13)	16 (20)	25 (32)	35 (44)	50 (63)	100 (125)
470	0.135	0.12	0.115	0.102	0.096	-
680	0.1	0.09	0.085	0.08	0.074	-
1,000	0.085	0.08	0.076	0.07	0.069	-
2,200	0.056	0.05	0.045	0.04	-	-
3,300	0.048	0.045	0.036	-	-	-
4,700	0.038	0.035	-	-	-	-

Dimensions : Millimetres

Part Number Table

Description	Part Number
CAPACITOR, 100uF, 10V	MCGLR10V107M5X11
CAPACITOR, 220uF, 10V	MCGLR10V227M6.3X11
CAPACITOR, 330uF, 10V	MCGLR10V337M8X11
CAPACITOR, 470uF, 10V	MCGLR10V477M8X11
CAPACITOR, 1000uF, 10V	MCGLR10V108M10X16
CAPACITOR, 2200uF, 10V	MCGLR10V228M13X26
CAPACITOR, 3300uF, 10V	MCGLR10V338M13X25
CAPACITOR, 4700uF, 10V	MCGLR10V478M16X26
CAPACITOR, 33uF, 16V	MCGLR16V336M5X11
CAPACITOR, 47uF, 16V	MCGLR16V476M5X11
CAPACITOR, 100uF, 16V	MCGLR16V107M6.3X11
CAPACITOR, 220uF, 16V	MCGLR16V227M8X11
CAPACITOR, 330uF, 16V	MCGLR16V337M8X14
CAPACITOR, 470uF, 16V	MCGLR16V477M10X16
CAPACITOR, 1000uF, 16V	MCGLR16V108M10X16
CAPACITOR, 2200uF, 16V	MCGLR16V228M13X26
CAPACITOR, 3300uF, 16V	MCGLR16V338M16X32
CAPACITOR, 4700uF, 16V	MCGLR16V478M16X36
CAPACITOR, 33uF, 25V	MCGLR25V336M6.3X11
CAPACITOR, 47uF, 25V	MCGLR25V476M6.3X11
CAPACITOR, 100uF, 25V	MCGLR25V107M8X11
CAPACITOR, 220uF, 25V	MCGLR25V227M8X14
CAPACITOR, 330uF, 25V	MCGLR25V337M10X16
CAPACITOR, 470uF, 25V	MCGLR25V477M10X16
CAPACITOR, 1000uF, 25V	MCGLR25V108M13X21

Electrolytic Capacitors

Part Number Table

Description	Part Number
CAPACITOR, 33uF, 35V	MCGLR35V336M6.3X11
CAPACITOR, 47uF, 35V	MCGLR35V476M6.3X11
CAPACITOR, 100uF, 35V	MCGLR35V107M8X11
CAPACITOR, 220uF, 35V	MCGLR35V227M10X16
CAPACITOR, 330uF, 35V	MCGLR35V337M10X21
CAPACITOR, 470uF, 35V	MCGLR35V477M10X21
CAPACITOR, 1000uF, 35V	MCGLR35V108M16X26
CAPACITOR, 1uF, 50V	MCGLR50V105M5X11
CAPACITOR, 2.2uF, 50V	MCGLR50V225M5X11
CAPACITOR, 3.3uF, 50V	MCGLR50V335M5X11
CAPACITOR, 4.7uF, 50V	MCGLR50V475M5X11
CAPACITOR, 10uF, 50V	MCGLR50V106M5X11
CAPACITOR, 22uF, 50V	MCGLR50V226M5X11
CAPACITOR, 33uF, 50V	MCGLR50V336M6.3X11
CAPACITOR, 47uF, 50V	MCGLR50V476M8X11
CAPACITOR, 100uF, 50V	MCGLR50V107M10X13
CAPACITOR, 220uF, 50V	MCGLR50V227M10X21
CAPACITOR, 330uF, 50V	MCGLR50V337M13X21
CAPACITOR, 470uF, 50V	MCGLR50V477M13X26
CAPACITOR, 1000uF, 50V	MCGLR50V108M16X32
CAPACITOR, 1uF, 100V	MCGLR100V105M5X11
CAPACITOR, 2.2uF, 100V	MCGLR100V225M5X11
CAPACITOR, 3.3uF, 100V	MCGLR100V335M5X11
CAPACITOR, 4.7uF, 100V	MCGLR100V475M5X11
CAPACITOR, 10uF, 100V	MCGLR100V106M6.3X11
CAPACITOR, 22uF, 100V	MCGLR100V226M8X12
CAPACITOR, 33uF, 100V	MCGLR100V336M8X14
CAPACITOR, 47uF, 100V	MCGLR100V476M10X17
CAPACITOR, 100uF, 100V	MCGLR100V107M10X20

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