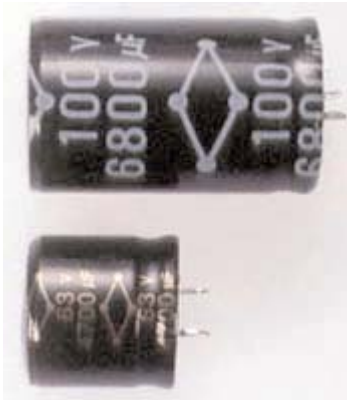


Electrolytic Capacitors



LPR Series



Features:

- Material : Aluminium.
- Large size snap-In.
- LPR series large size capacitors with the specially designed terminals have "self-standing" and can be directly soldered to printed circuit boards without holders.
- They are easily to fixing to printed circuit boards due to the specially designed terminals.

Specification Table

No.	Item	Performance																																																		
1	Operating Temperature Range	-40 to +85°C	-25 to +85°C																																																	
2	Rated Working Voltage Range	16 - 100 V dc	250 - 400 V dc																																																	
3	Nominal Capacitance Range	470 - 68,000 µF	47 - 2,700 µF																																																	
4	Capacitance Tolerance	±20% (at +20°C, 120 Hz)																																																		
5	Leakage Current	I = 0.02 CV or 3,000 (µA) Max. Whichever is greater after 3 mins. I : Leakage Current (µA) C : Rated Capacitance (µF) V : Working Voltage (v)																																																		
6	Dissipation Factor (tan δ) (120 Hz / +20°C)	<table border="1"> <thead> <tr> <th>W V µF</th> <th>16</th> <th>25 - 35</th> <th>50 - 63</th> <th>100</th> <th>250</th> <th>400</th> </tr> </thead> <tbody> <tr> <td>47 - 330</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td rowspan="2">0.15</td> <td rowspan="2">0.2</td> </tr> <tr> <td>470 - 3,300</td> <td>0.25</td> <td>0.2</td> <td>0.2</td> <td>0.2</td> </tr> <tr> <td>4,700 - 6,800</td> <td>0.35</td> <td>0.3</td> <td rowspan="2">0.3</td> <td>0.25</td> <td>-</td> <td>-</td> </tr> <tr> <td>10,000 - 22,000</td> <td>0.4</td> <td>0.35</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>27,000 - 47,000</td> <td>0.45</td> <td>0.4</td> <td>0.35</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>56,000 - 68,000</td> <td>0.5</td> <td>0.45</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>					W V µF	16	25 - 35	50 - 63	100	250	400	47 - 330	-	-	-	-	0.15	0.2	470 - 3,300	0.25	0.2	0.2	0.2	4,700 - 6,800	0.35	0.3	0.3	0.25	-	-	10,000 - 22,000	0.4	0.35	-	-	-	27,000 - 47,000	0.45	0.4	0.35	-	-	-	56,000 - 68,000	0.5	0.45	-	-	-	-
W V µF	16	25 - 35	50 - 63	100	250	400																																														
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27,000 - 47,000	0.45	0.4	0.35	-	-	-																																														
56,000 - 68,000	0.5	0.45	-	-	-	-																																														
7	Characteristics at Low Temperature (Stability at 120 Hz)	Impedance Ratio at 100 Hz Z -25°C / Z 20°C : 3 Max. Z -40°C / Z 20°C : 12 Max.																																																		

Electrolytic Capacitors

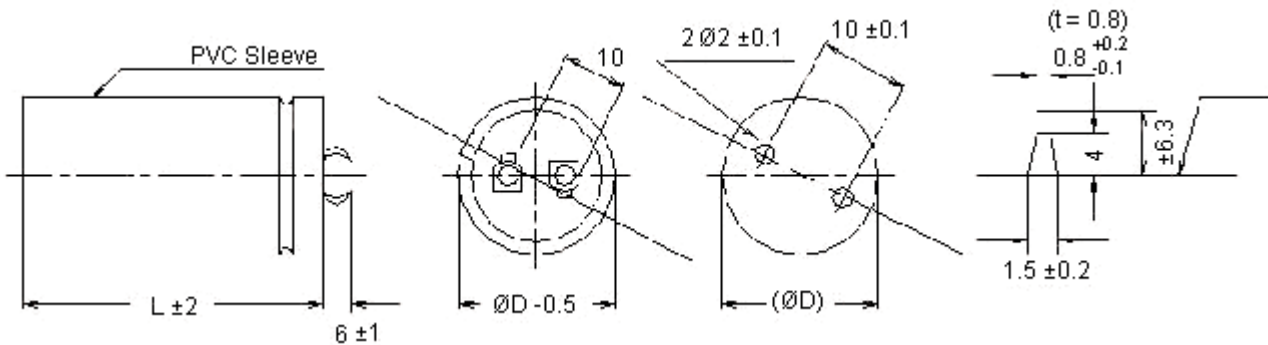


LPR Series

Specification Table

No.	Item	Performance																																										
8	Ripple Current	<p>Refer to standard products table (120 Hz, +85°C). Correction factor for frequency.</p> <table border="1"> <thead> <tr> <th>Ambient Temperature</th> <th>Multiplying Factor</th> </tr> </thead> <tbody> <tr> <td>45°C and under</td> <td>1.55</td> </tr> <tr> <td>60°C</td> <td>1.3</td> </tr> <tr> <td>70°C</td> <td>1.2</td> </tr> <tr> <td>85°C</td> <td>1</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th rowspan="2">Frequency</th> <th colspan="4">Multiplying Factor</th> </tr> <tr> <th>16 - 25 V</th> <th>50 - 100 V</th> <th>250 V</th> <th>400 V</th> </tr> </thead> <tbody> <tr> <td>60 Hz</td> <td>0.9</td> <td>0.9</td> <td>0.8</td> <td>0.9</td> </tr> <tr> <td>120 Hz</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>1 Hz</td> <td>1.05</td> <td>1.15</td> <td>1.35</td> <td>1.3</td> </tr> <tr> <td>10 kHz</td> <td rowspan="2">1.1</td> <td rowspan="2">1.2</td> <td>1.45</td> <td>1.4</td> </tr> <tr> <td>100 kHz</td> <td>1.5</td> <td>1.45</td> </tr> </tbody> </table>	Ambient Temperature	Multiplying Factor	45°C and under	1.55	60°C	1.3	70°C	1.2	85°C	1	Frequency	Multiplying Factor				16 - 25 V	50 - 100 V	250 V	400 V	60 Hz	0.9	0.9	0.8	0.9	120 Hz	1	1	1	1	1 Hz	1.05	1.15	1.35	1.3	10 kHz	1.1	1.2	1.45	1.4	100 kHz	1.5	1.45
Ambient Temperature	Multiplying Factor																																											
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9	High Temperature Loading	<p>After 2,000 hours application of DC rated working voltage at +85°C, The capacitor shall meet the following limits: Post test requirements at +20°C.</p> <table border="1"> <tbody> <tr> <td>Leakage current</td> <td>≤ the initial specified value</td> </tr> <tr> <td>Capacitance change</td> <td>≤ ±20% of initial measured value</td> </tr> <tr> <td>Dissipation factor (tan δ)</td> <td>≤ 200% of initial specified value</td> </tr> </tbody> </table>	Leakage current	≤ the initial specified value	Capacitance change	≤ ±20% of initial measured value	Dissipation factor (tan δ)	≤ 200% of initial specified value																																				
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10	Shelf Life	<p>After storage for 500 hours at +85°C with no voltage applied. Post test requirements at +20°C. same limits as high temperature loading.</p>																																										

Diagram of Dimensions



Dimensions : Millimetres

Electrolytic Capacitors



LPR Series

Case Size Table and Permissible Ripple Current (Case Size : $\varnothing D \times L$ (mm))
Maximum Ripple Current : A (rms)

W V	Capacitors (μF)	Case Size	R C
16 (20)	4,700	20 × 30	2.2
		22 × 25	1.8
	6,800	20 × 30	2.45
		22 × 25	2.4
	8,200	22 × 30	2.75
		22 × 25	2.7
	10,000	22 × 30	3
		25 × 25	2.85
	12,000	22 × 40	3.3
		25 × 26	3.15
	15,000	22 × 40	3.6
		25 × 31	3.55
	18,000	22 × 40	4.34
		25 × 36	4.2
	22,000	22 × 46	4.25
		25 × 36	4
	27,000	25 × 40	6.5
		30 × 36	6.3
	33,000	25 × 50	6.5
		30 × 40	5
39,000	30 × 46	8.1	
	35 × 36	7.5	
47,000	30 × 50	7.5	
	35 × 45	7	
56,000	30 × 50	10	
	35 × 46	9.5	
68,000	35 × 50	10.05	
25 (32)	3,300	20 × 30	2.05
		22 × 25	2.1
	4,700	20 × 30	2.5
		25 × 25	2.3
	5,600	22 × 31	2.6
	6,800	22 × 30	2.85

Electrolytic Capacitors



LPR Series

Case Size Table and Permissible Ripple Current (Case Size : ØD × L (mm))
Maximum Ripple Current : A (rms)

W V	Capacitors (µF)	Case Size	R C
25 (32)	6,800	25 × 26	2.7
	8,200	22 × 40	3.15
		25 × 26	3
	10,000	22 × 40	3.45
		25 × 31	3.15
	12,000	22 × 50	3.8
		25 × 40	3.75
	15,000	22 × 50	3.8
		25 × 45	3.6
	18,000	25 × 50	4.7
		30 × 41	4.5
	22,000	25 × 50	4.95
		35 × 30	5.2
	27,000	30 × 46	5.9
35 × 36		6.5	
33,000	30 × 50	8.95	
39,000	35 × 42	8.8	
47,000	35 × 50	9	
35 (44)	2,200	22 × 25	2.18
	3,900	22 × 30	2.5
	4,700	22 × 30	2.45
		25 × 26	2.4
	6,800	22 × 40	3
		25 × 30	2.9
	8,200	22 × 40	3.45
		25 × 30	3.25
	10,000	22 × 46	3.5
		25 × 40	3.4
	12,000	25 × 40	3.85
		35 × 35	3.7
	15,000	25 × 50	4.5
		30 × 40	4.1

Electrolytic Capacitors



LPR Series

Case Size Table and Permissible Ripple Current (Case Size : ØD × L (mm))
Maximum Ripple Current : A (rms)

W V	Capacitors (µF)	Case Size	R C
35 (44)	18,000	30 × 46	4.8
		35 × 37	4.6
	22,000	30 × 50	5.7
		35 × 42	4.9
	27,000	35 × 50	5.7
33,000	35 × 51	6.45	
50 (63)	1,500	22 × 26	1.4
	2,200	22 × 25	1.9
		25 × 25	2
	2,700	22 × 31	2.3
	3,300	22 × 31	2.5
		25 × 26	2.4
	4,700	22 × 36	3
		25 × 31	2.9
	5,600	22 × 40	3
		25 × 36	2.8
	6,800	22 × 50	3
		25 × 40	2.85
	8,200	25 × 46	3.6
		35 × 35	3.8
	10,000	25 × 50	3.9
		30 × 40	3.75
	12,000	30 × 50	4.55
		35 × 40	4.35
15,000	30 × 50	5.3	
	35 × 42	4.7	
18,000	35 × 47	5.3	
22,000	35 × 52	5.8	
63 (79)	1,000	22 × 30	1.5
		22 × 25	1.45
	1,500	22 × 30	1.8
		22 × 25	1.75

Electrolytic Capacitors



LPR Series

Case Size Table and Permissible Ripple Current (Case Size : ØD × L (mm))
Maximum Ripple Current : A (rms)

W V	Capacitors (µF)	Case Size	R C
63 (79)	2,200	22 × 30	2.1
		25 × 26	2
	2,700	22 × 36	2.8
		25 × 31	2.7
	3,300	22 × 40	2.81
		25 × 31	2.76
	3,900	22 × 40	3.2
		25 × 36	3.1
	4,700	22 × 50	3.2
		25 × 40	3.11
	5,600	25 × 46	3.8
		30 × 36	3.6
	6,800	25 × 50	3.68
		30 × 40	3.54
8,200	30 × 46	3.99	
	35 × 37	3.81	
10,000	35 × 42	4.48	
100 (125)	470	20 × 30	1.3
		22 × 25	1.15
	680	22 × 25	1.53
	820	22 × 30	1.55
		25 × 26	1.54
	1,000	22 × 30	2.2
		25 × 25	1.71
	1,200	22 × 36	2.3
		25 × 31	2.2
	1,500	22 × 40	2.54
		25 × 31	2.38
	1,800	22 × 46	2.2
		25 × 41	2.05
	2,200	22 × 50	3.07
25 × 41		2.77	
2,700	25 × 46	3.15	

Electrolytic Capacitors



LPR Series

Case Size Table and Permissible Ripple Current (Case Size : $\varnothing D \times L$ (mm))
Maximum Ripple Current : A (rms)

W V	Capacitors (μF)	Case Size	R C
100 (125)	2,700	30 × 36	3
	3,300	25 × 50	3.39
		30 × 41	3.27
	3,900	30 × 46	3.5
		35 × 37	3.3
	4,700	30 × 51	3.7
		35 × 42	3.5
	5,600	35 × 47	3.9
	6,800	35 × 50	4.85
	8,200	35 × 60	5.3
10,000	35 × 70	5.49	
	40 × 60		
250 (300)	120	20 × 30	0.9
		22 × 25	0.75
	150	20 × 30	1
		22 × 25	0.97
	180	22 × 26	1.1
	220	22 × 30	1.35
		25 × 25	1.09
	270	22 × 31	1.11
		25 × 25	1.05
	330	22 × 40	1.58
		25 × 31	1.42
	390	22 × 41	2
		25 × 36	1.85
	470	22 × 46	2.08
		25 × 41	1.93
	560	25 × 45	2.29
		30 × 36	2.22
	680	25 × 50	2.68
		30 × 40	2.46
	820	30 × 45	3.11
35 × 40		2.83	

Electrolytic Capacitors



LPR Series

Case Size Table and Permissible Ripple Current (Case Size : ØD × L (mm))
Maximum Ripple Current : A (rms)

W V	Capacitors (µF)	Case Size	R C
250 (300)	1,000	30 × 50	3.6
		35 × 42	3.35
	1,200	35 × 46	4
	1,500	35 × 52	5
400 (450)	47	25 × 25	0.4
		35 × 30	0.28
	68	22 × 25	0.51
		22 × 26	0.6
	100	22 × 30	0.68
		25 × 25	0.65
	120	22 × 31	0.9
		25 × 25	0.87
	150	22 × 41	0.95
		25 × 31	0.85
	220	22 × 50	1.27
		25 × 41	1.17
	270	25 × 46	1.65
		30 × 36	1.59
	330	30 × 41	1.9
		35 × 37	1.75
390	30 × 36	2.19	
470	35 × 47	2.5	
560	35 × 52	2.79	

Part Number Table

Description	Part Number
CAPACITOR, 4700UF, 16V	MCLPR16V478M22X25
CAPACITOR, 6800UF, 16V	MCLPR16V688M22X25
CAPACITOR, 8200UF, 16V	MCLPR16V828M22X30
CAPACITOR, 10000UF, 16V	MCLPR16V109M22X25
CAPACITOR, 12000UF, 16V	MCLPR16V129M22X40
CAPACITOR, 15000UF, 16V	MCLPR16V159M22X35
CAPACITOR, 18000UF, 16V	MCLPR16V189M25X36
CAPACITOR, 22000UF, 16V	MCLPR16V229M22X41

Description	Part Number
CAPACITOR, 27000UF, 16V	MCLPR16V279M30X32
CAPACITOR, 33000UF, 16V	MCLPR16V339M30X45
CAPACITOR, 39000UF, 16V	MCLPR16V399M30X50
CAPACITOR, 47000UF, 16V	MCLPR16V479M35X45
CAPACITOR, 56000UF, 16V	MCLPR16V569M35X50
CAPACITOR, 68000UF, 16V	MCLPR16V689M35X62
CAPACITOR, 3300UF, 25V	MCLPR25V338M22X25
CAPACITOR, 4700UF, 25V	MCLPR25V478M22X25

Electrolytic Capacitors



LPR Series

Part Number Table

Description	Part Number
CAPACITOR, 5600UF, 25V	MCLPR25V568M22X31
CAPACITOR, 6800UF, 25V	MCLPR25V688M22X30
CAPACITOR, 8200UF, 25V	MCLPR25V828M22X35
CAPACITOR, 10000UF, 25V	MCLPR25V109M30X25
CAPACITOR, 12000UF, 25V	MCLPR25V129M22X50
CAPACITOR, 15000UF, 25V	MCLPR25V159M30X35
CAPACITOR, 18000UF, 25V	MCLPR25V189M25X41
CAPACITOR, 22000UF, 25V	MCLPR25V229M30X45
CAPACITOR, 27000UF, 25V	MCLPR25V279M30X41
CAPACITOR, 33000UF, 25V	MCLPR25V339M30X51
CAPACITOR, 39000UF, 25V	MCLPR25V399M35X51
CAPACITOR, 47000UF, 25V	MCLPR25V479M35X56
CAPACITOR, 2200UF, 35V	MCLPR35V228M22X25
CAPACITOR, 3900UF, 35V	MCLPR35V398M22X30
CAPACITOR, 4700UF, 35V	MCLPR35V478M22X30
CAPACITOR, 6800UF, 35V	MCLPR35V688M26X30
CAPACITOR, 8200UF, 35V	MCLPR35V828M22X41
CAPACITOR, 10000UF, 35V	MCLPR35V109M30X30
CAPACITOR, 12000UF, 35V	MCLPR35V129M25X41
CAPACITOR, 15000UF, 35V	MCLPR35V159M30X40
CAPACITOR, 18000UF, 35V	MCLPR35V189M30X46
CAPACITOR, 22000UF, 35V	MCLPR35V229M35X45
CAPACITOR, 27000UF, 35V	MCLPR35V279M35X50
CAPACITOR, 33000UF, 35V	MCLPR35V339M35X51
CAPACITOR, 1500UF, 50V	MCLPR50V158M22X26
CAPACITOR, 2200UF, 50V	MCLPR50V228M22X25
CAPACITOR, 2700UF, 50V	MCLPR50V278M22X31
CAPACITOR, 3300UF, 50V	MCLPR50V338M22X31
CAPACITOR, 4700UF, 50V	MCLPR50V478M30X25
CAPACITOR, 5600UF, 50V	MCLPR50V568M25X40
CAPACITOR, 6800UF, 50V	MCLPR50V688M25X41
CAPACITOR, 8200UF, 50V	MCLPR50V828M30X46
CAPACITOR, 10000UF, 50V	MCLPR50V109M35X35
CAPACITOR, 12000UF, 50V	MCLPR50V129M30X45

Description	Part Number
CAPACITOR, 15000UF, 50V	MCLPR50V159M30X51
CAPACITOR, 18000UF, 50V	MCLPR50V189M35X55
CAPACITOR, 22000UF, 50V	MCLPR50V229M35X52
CAPACITOR, 1000UF, 63V	MCLPR63V108M22X25
CAPACITOR, 1500UF, 63V	MCLPR63V158M22X30
CAPACITOR, 2200UF, 63V	MCLPR63V228M26X25
CAPACITOR, 2700UF, 63V	MCLPR63V278M25X31
CAPACITOR, 3300UF, 63V	MCLPR63V338M25X35
CAPACITOR, 3900UF, 63V	MCLPR63V398M25X40
CAPACITOR, 4700UF, 63V	MCLPR63V478M26X40
CAPACITOR, 5600UF, 63V	MCLPR63V568M30X40
CAPACITOR, 6800UF, 63V	MCLPR63V688M30X40
CAPACITOR, 8200UF, 63V	MCLPR63V828M30X46
CAPACITOR, 10000UF, 63V	MCLPR63V109M30X50
CAPACITOR, 470UF, 100V	MCLPR100V477M22X25
CAPACITOR, 680UF, 100V	MCLPR100V687M22X30
CAPACITOR, 820UF, 100V	MCLPR100V827M25X30
CAPACITOR, 1000UF, 100V	MCLPR100V108M22X30
CAPACITOR, 1200UF, 100V	MCLPR100V128M25X35
CAPACITOR, 1500UF, 100V	MCLPR100V158M25X40
CAPACITOR, 1800UF, 100V	MCLPR100V188M25X41
CAPACITOR, 2200UF, 100V	MCLPR100V228M26X40
CAPACITOR, 2700UF, 100V	MCLPR100V278M35X35
CAPACITOR, 3300UF, 100V	MCLPR100V338M30X41
CAPACITOR, 3900UF, 100V	MCLPR100V398M35X45
CAPACITOR, 4700UF, 100V	MCLPR100V478M30X50
CAPACITOR, 5600UF, 100V	MCLPR100V568M35X50
CAPACITOR, 6800UF, 100V	MCLPR100V688M35X58
CAPACITOR, 8200UF, 100V	MCLPR100V828M35X60
CAPACITOR, 10000UF, 100V	MCLPR100V109M40X64
CAPACITOR, 120uF, 250V	MCLPR250V127M22X25
CAPACITOR, 150uF, 250V	MCLPR250V157M22X25
CAPACITOR, 180uF, 250V	MCLPR250V187M25X26
CAPACITOR, 220uF, 250V	MCLPR250V227M22X32

Electrolytic Capacitors



LPR Series

Part Number Table

Description	Part Number
CAPACITOR, 270uF, 250V	MCLPR250V277M22X32
CAPACITOR, 330uF, 250V	MCLPR250V337M22X40
CAPACITOR, 390uF, 250V	MCLPR250V397M22X41
CAPACITOR, 470uF, 250V	MCLPR250V477M25X41
CAPACITOR, 560uF, 250V	MCLPR250V567M30X40
CAPACITOR, 680uF, 250V	MCLPR250V687M30X40
CAPACITOR, 820uF, 250V	MCLPR250V827M35X45
CAPACITOR, 1000uF, 250V	MCLPR250V108M35X45
CAPACITOR, 1200uF, 250V	MCLPR250V128M35X46
CAPACITOR, 1500uF, 250V	MCLPR250V158M35X62
CAPACITOR, 47UF, 400V	MCLPR400V476M22X25
CAPACITOR, 68UF, 400V	MCLPR400V686M22X25
CAPACITOR, 82UF, 400V	MCLPR400V826M22X25
CAPACITOR, 100UF, 400V	MCLPR400V107M22X30
CAPACITOR, 120UF, 400V	MCLPR400V127M25X30
CAPACITOR, 150UF, 400V	MCLPR400V157M25X31
CAPACITOR, 220UF, 400V	MCLPR400V227M26X40
CAPACITOR, 270UF, 400V	MCLPR400V277M25X46
CAPACITOR, 330UF, 400V	MCLPR400V337M30X41
CAPACITOR, 390UF, 400V	MCLPR400V397M30X45
CAPACITOR, 470UF, 400V	MCLPR400V477M35X40
CAPACITOR, 560UF, 400V	MCLPR400V567M35X52

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