



FEATURES

- 105°C, 10,000 ~ 12,000 hours assured
- Large permissible ripple current
- Suitable for switching power supplies & lighting
- Smaller case size current
- RoHS compliant
- AEC-Q200 compliant

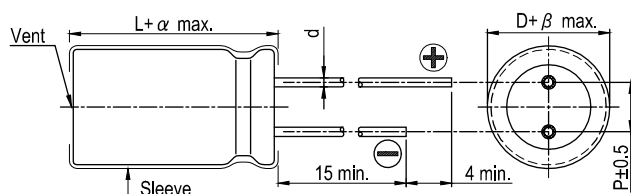
SPECIFICATIONS

Items	Performance																																							
Category Temperature Range	160 ~ 400V				450 ~ 500V																																			
	-40℃ ~ +105℃				-25℃ ~ +105℃																																			
Capacitance Tolerance	± 20% (at 120 Hz, 20℃)																																							
Leakage Current (at 20℃)	<table><tr><td>Time</td><td colspan="7">after 5 minutes</td></tr><tr><td rowspan="2">Leakage Current</td><td colspan="3">CV ≤ 1,000 I = 0.03CV + 15(μA)</td><td colspan="4">CV > 1,000 I = 0.02CV + 25(μA)</td></tr></table>								Time	after 5 minutes							Leakage Current	CV ≤ 1,000 I = 0.03CV + 15(μA)			CV > 1,000 I = 0.02CV + 25(μA)																			
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Where, C = rated capacitance in μF, V = rated DC working voltage in V																																								
Tanδ (at 120 Hz, 20℃)	<table><tr><td>Rated Voltage</td><td>160</td><td>200</td><td>250</td><td>350</td><td>400</td><td>450</td><td>500</td></tr><tr><td>Tanδ (max.)</td><td>0.20</td><td>0.20</td><td>0.20</td><td>0.24</td><td>0.24</td><td>0.24</td><td>0.24</td></tr></table>								Rated Voltage	160	200	250	350	400	450	500	Tanδ (max.)	0.20	0.20	0.20	0.24	0.24	0.24	0.24																
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Tanδ (max.)	0.20	0.20	0.20	0.24	0.24	0.24	0.24																																	
Low Temperature Characteristics (at 120 Hz)	Impedance ratio shall not exceed the values given in the table below.																																							
	Rated Voltage		160	200	250	350	400	450	500																															
	Impedance Ratio	Z(-25℃) / Z(+20℃)	3	3	3	5	5	6	6																															
		Z(-40℃) / Z(+20℃)	6	6	6	6	6	-	-																															
Endurance	<table><tr><td>Test Time</td><td colspan="7">10,000 Hrs for L ≤ 20 mm 12,000 Hrs for L ≥ 25 mm</td></tr><tr><td>Capacitance Change</td><td colspan="7">Within ± 20% of initial value</td></tr><tr><td>Tanδ</td><td colspan="7">Less than 200% of specified value</td></tr><tr><td>Leakage Current</td><td colspan="7">Within specified value</td></tr></table>								Test Time	10,000 Hrs for L ≤ 20 mm 12,000 Hrs for L ≥ 25 mm							Capacitance Change	Within ± 20% of initial value							Tanδ	Less than 200% of specified value							Leakage Current	Within specified value						
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	Tanδ	Less than 200% of specified value																																						
	Leakage Current	Within specified value																																						
* The above specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage applied with rated ripple current for 10,000 ~ 12,000 hours at 105℃.																																								
Shelf Life Test	<table><tr><td>Test Time</td><td colspan="7">1,000 Hrs</td></tr><tr><td>Capacitance Change</td><td colspan="7">Within ± 20% of initial value</td></tr><tr><td>Tanδ</td><td colspan="7">Less than 200% of specified value</td></tr><tr><td>Leakage Current</td><td colspan="7">Less than 500% of specified value</td></tr></table>								Test Time	1,000 Hrs							Capacitance Change	Within ± 20% of initial value							Tanδ	Less than 200% of specified value							Leakage Current	Less than 500% of specified value						
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	Leakage Current	Less than 500% of specified value																																						
* The above specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. The rated voltage shall be applied to the capacitors before the measurements (Refer to JIS C 5101-4 4.1).																																								
Ripple Current and Frequency Multipliers	<table><tr><td colspan="2">Frequency (Hz)</td><td>120</td><td>1k</td><td>10k</td><td>100k up</td></tr><tr><td>Cap. (μF)</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>< 100</td><td></td><td>1.00</td><td>1.75</td><td>2.25</td><td>2.50</td></tr><tr><td>≥ 100</td><td></td><td>1.00</td><td>1.67</td><td>2.05</td><td>2.25</td></tr></table>								Frequency (Hz)		120	1k	10k	100k up	Cap. (μF)						< 100		1.00	1.75	2.25	2.50	≥ 100		1.00	1.67	2.05	2.25								
Frequency (Hz)		120	1k	10k	100k up																																			
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< 100		1.00	1.75	2.25	2.50																																			
≥ 100		1.00	1.67	2.05	2.25																																			

PART NUMBERING SYSTEM

RLD Series	15 μF	± 20%	450V	Bulk Package	10 × 25
RLD	150	M	2W	BK	100250
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Lead Configuration and Package	Case Size

DIAGRAM OF DIMENSIONS



Lead Spacing and Diameter Unit: mm

D	10	12.5	16	18
P	5.0	5.0	7.5	7.5
d	0.6		0.8	
α	L<20: 1.5, L ≥ 2.0			
β	0.5			

Dimension: D x L (mm) Ripple
Current: mA/rms at 105°C

■ DIMENSION AND PERMISSIBLE RIPPLE CURRENT

Cap. Contents (uF)	160V (2C)			200V (2D)			250V (2E)			350V (2V)			400V (2G)		
	DxL	Ripple Current		DxL	Ripple Current		DxL	Ripple Current		DxL	Ripple Current		DxL	Ripple Current	
		120 Hz	100k Hz		120 Hz	100k Hz		120 Hz	100k Hz		120 Hz	100k Hz		120 Hz	100k Hz
10													10x16	125	313
12										10x16	135	338			
18													10x20	180	450
22							10x16	200	500	10x20	200	500	10x25	215	538
27				10x16	200	500				10x25	240	600	10x35	270	675
33							10x20	240	600	10x35	300	750	10x40 12.5x25	310 355	775 888
39	10x16	245	613												
47				10x20	290	725	10x25	315	788	12.5x30 10x45	450 385	1,125 963	10x50 12.5x35	400 480	1,000 1,200
56	10x20	315	788	10x25	345	863	12.5x25	460	1,150	10x50 12.5x35	440 525	1,100 1,313	12.5x40 16x25	540 515	1,350 1,288
68	10x25	375	938	10x35	425	1,063	10x35 12.5x25	430 510	1,075 1,275	12.5x40 16x25	595 565	1,488 1,413	12.5x45 18x25	620 580	1,550 1,450
82	10x30	445	1,113	12.5x25	565	1,413	10x45 12.5x30	515 590	1,288 1,475	12.5x45 16x31.5	675 670	1,688 1,675	16x35.5	685	1,713
100	10x35	520	1,170	10x45 12.5x30	565 660	1,271 1,485	10x50 12.5x35	585 700	1,316 1,575	16x35.5	755	1,699	16x40 18x35.5	785 790	1,766 1,778
120	10x40 12.5x25	595 680	1,339 1,700	10x50 12.5x35	640 765	1,440 1,721	12.5x40 16x25	795 755	1,789 1,699	16x45 18x31.5	870 840	1,958 1,890	16x50 18x40	890 880	2,003 1,980
150	10x50 12.5x35	715 850	1,609 1,913	12.5x40 16x25	880 840	1,980 1,890	12.5x45 18x25	920 865	2,070 1,946	18x40	985	2,216	18x45	1,000	2,250
180	16x25	920	2,070	16x31.5 18x25	995 950	2,239 2,138	16x35.5	1,015	2,284	18x45	1,090	2,453			
220	16x31.5 18x25	1,100 1,050	2,475 2,363	16x35.5 18x31.5	1,125 1,135	2,531 2,554	16x40 18x31.5	1,160 1,135	2,610 2,554	18x50	1,220	2,745			
270	16x35.5 18x31.5	1,240 1,255	2,790 2,824	16x40 18x35.5	1,280 1,300	2,880 2,925	16x50 18x40	1,330 1,320	2,993 2,970						
330	16x40 18x35.5	1,420 1,435	3,195 3,229	16x50 18x40	1,470 1,510	3,308 3,398	18x45	1,485	3,341						
390	16x45 18x40	1,575 1,590	3,544 3,578	18x45	1,610	3,623	18x50	1,625	3,656						
470	16x50 18x45	1,760 1,770	3,960 3,983												
560	18x50	1,945	4,376												

Cap. Contents (uF)	450V (2W)			500V (2H)		
	DxL	Ripple Current		DxL	Ripple Current	
		120 Hz	100k Hz		120 Hz	100k Hz
6.8	10x16	125	313			
12	10x20	150	375	12.5x20	135	338
15	10x25	185	463	12.5x25	165	413
22	10x35	250	625	12.5x35	220	550
27	10x40 12.5x25	290 340	725 850	12.5x40	260	650
33	12.5x30	400	1,000	12.5x45	285	713
47	12.5x40 16x25	525 500	1,313 1,250	16x31.5	360	900
56	12.5x50 16x31.5	605 585	1,513 1,463	16x35.5	420	1,050
68	16x35.5 18x31.5	660 660	1,650 1,650	16x40	490	1,225
82	16x45 18x35.5	760 755	1,900 1,888	18x35.5	540	1,350
100	16x50 18x40	855 845	1,924 1,901	18x45	660	1,485
120	18x45	945	2,126			