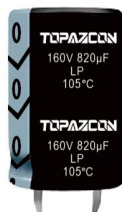


LP Series

- Withstand high temperature, for general purpose
- Load life 2,000 hours at 105°C
- RoHS Compliant

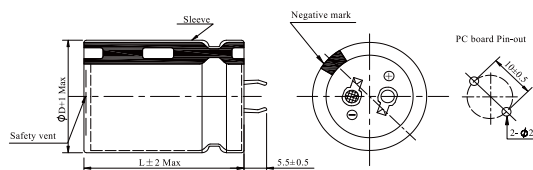


◆ SPECIFICATIONS

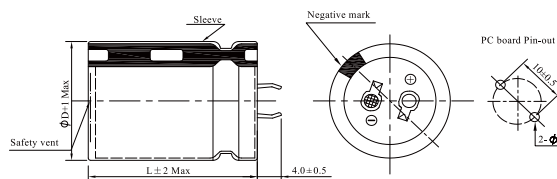
Item	Performance Characteristics																																												
Category Temperature Range	-40 ~ +105°C	-25 ~ +105°C																																											
Working Voltage Range	10 ~ 100Vdc	160 ~ 500Vdc																																											
Capacitance Range	680 ~ 56,000µF	56 ~ 2,200µF																																											
Capacitance Tolerance	±20% (at 20°C and 120Hz)																																												
Dissipation Factor (tanδ) (at 20°C, 120Hz)	<table border="1"> <tr> <td>Rated Voltage (V)</td> <td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100</td><td>160 ~ 250</td><td>350 ~ 450</td><td>500</td> </tr> <tr> <td>tanδ(Max)</td> <td>0.55</td><td>0.50</td><td>0.45</td><td>0.40</td><td>0.35</td><td>0.30</td><td>0.25</td><td>0.20</td><td>0.15</td><td>0.15</td><td>0.20</td> </tr> </table>												Rated Voltage (V)	10	16	25	35	50	63	80	100	160 ~ 250	350 ~ 450	500	tanδ(Max)	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.15	0.20									
Rated Voltage (V)	10	16	25	35	50	63	80	100	160 ~ 250	350 ~ 450	500																																		
tanδ(Max)	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.15	0.20																																		
Leakage Current	$I \leq 3\sqrt{CV}$ I: Leakage current (µA) C: Rated capacitance (µF) V: Rated voltage (V) Impress the rated voltage for 5 minutes																																												
Low Temperature Characteristics Impedance Ratio(MAX)	<table border="1"> <tr> <td>Rated Voltage (V)</td> <td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100</td><td>160 ~ 250</td><td>350 ~ 500</td> </tr> <tr> <td>Z(-25°C)/Z(+20°C)</td> <td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>4</td><td>8</td> </tr> <tr> <td>Z(-40°C)/Z(+20°C)</td> <td>15</td><td>15</td><td>10</td><td>8</td><td>6</td><td>6</td><td>5</td><td>5</td><td>-</td><td>-</td> </tr> </table>										Rated Voltage (V)	10	16	25	35	50	63	80	100	160 ~ 250	350 ~ 500	Z(-25°C)/Z(+20°C)	-	-	-	-	-	-	-	-	4	8	Z(-40°C)/Z(+20°C)	15	15	10	8	6	6	5	5	-	-	(at 120Hz)	
Rated Voltage (V)	10	16	25	35	50	63	80	100	160 ~ 250	350 ~ 500																																			
Z(-25°C)/Z(+20°C)	-	-	-	-	-	-	-	-	4	8																																			
Z(-40°C)/Z(+20°C)	15	15	10	8	6	6	5	5	-	-																																			
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 2,000 hours at 105°C. <table border="1"> <tr> <td>Capacitance change</td> <td>≒ ±20% of the initial value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≒ 200% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≒ specified value</td> </tr> </table>												Capacitance change	≒ ±20% of the initial value	Dissipation factor(tanδ)	≒ 200% of the specified value	Leakage current	≒ specified value																											
Capacitance change	≒ ±20% of the initial value																																												
Dissipation factor(tanδ)	≒ 200% of the specified value																																												
Leakage current	≒ specified value																																												
Shelf Life	The following requirements shall be satisfied when the capacitor are restored to 20°C after the rated voltage applied for 1,000 hours at 105°C without voltage applied. <table border="1"> <tr> <td>Capacitance change</td> <td>≒ ±20% of the initial value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≒ 200% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≒ 200% of the specified value</td> </tr> </table>												Capacitance change	≒ ±20% of the initial value	Dissipation factor(tanδ)	≒ 200% of the specified value	Leakage current	≒ 200% of the specified value																											
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Dissipation factor(tanδ)	≒ 200% of the specified value																																												
Leakage current	≒ 200% of the specified value																																												

◆ DIMENSIONS (mm)

Terminal Code : 00 : Standard

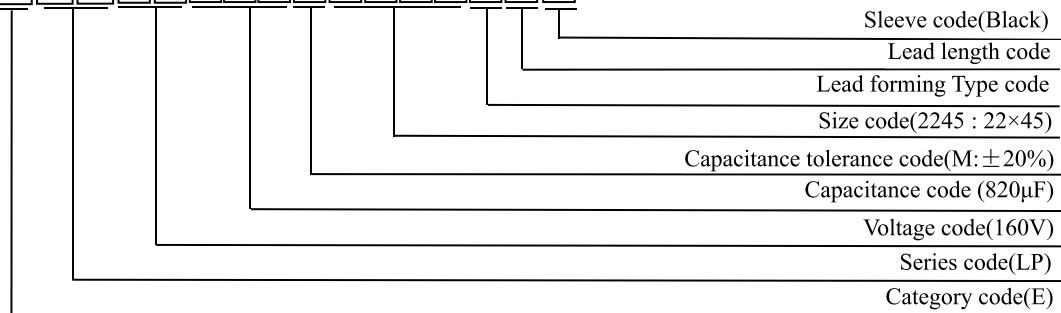


Terminal Code :0D



◆ PART NUMBER SYSTEM(Example : 160V 820µF)

E L P 2 C 8 2 1 M 2 2 4 5 0 0 B



LP Series

◆ Case size & Permissible rated ripple current (mA rms) at 105°C / 120Hz

Vdc ΦD μF	10								Vdc ΦD μF	16							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
8200									6800	22×25	1750						
10000	22×25	1770							8200	22×30	2000						
12000	22×30	2100	25×25	1940					10000	22×30	2100	25×25	2050				
15000	22×35	2230	25×30	2100					12000	22×35	2310	25×30	2300	30×25	2300		
18000	22×40	2410	25×30	2340	30×25	2250			15000	22×40	2680	25×35	2580	30×30	2570		
22000	22×45	2580	25×35	2540	30×30	2500			18000	22×50	3200	25×40	3160	30×30	2980		
27000	22×50	3170	25×40	3070	30×30	2950			22000			25×45	3360	30×35	3300	35×30	3250
33000			25×45	3390	30×35	3330	35×30	3210	27000			25×50	3850	30×40	3800	35×35	3930
39000					30×40	3700	35×35	3680	33000					30×45	4300	35×35	4270
47000					30×45	4220	35×40	4160	39000					30×50	4810	35×40	4800
56000							35×45	5000	47000							35×45	5530

Vdc ΦD μF	25								Vdc ΦD μF	35							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
4700	22×25	1610							3300	22×25	1450						
5600	22×30	1800							3900	22×30	1690						
6800	22×35	2090	25×25	1870					4700	22×35	2020	25×25	1620				
8200	22×40	2310	25×30	2340	30×25	2160			5600	22×35	2130	25×30	2000				
10000	22×45	2650	25×35	2610	30×30	2610			6800	22×40	2410	25×35	2310	30×25	2310		
12000	22×50	2800	25×40	2810	30×30	2740			8200	22×50	2850	25×40	2730	30×30	2750		
15000			25×45	3270	30×35	3130	35×30	3260	10000			25×45	3050	30×35	3050		
18000					30×40	3560	35×35	3840	12000			25×50	3370	30×40	3230	35×30	3190
22000					30×45	4040	35×35	3750	15000					30×45	3720	35×35	3670
27000							35×45	4740	18000							35×40	4370
33000							35×50	5500	22000							35×45	4920

Vdc ΦD μF	50								Vdc ΦD μF	63							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
1800	22×25	1340							1200	22×25	1200						
2200	22×30	1600							1500	22×30	1470						
2700	22×30	1700	25×25	1700					1800	22×30	1580	25×25	1520				
3300	22×35	1970	25×30	1880					2200	22×35	1820	25×30	1750				
3900	22×40	2220	25×30	2200	30×25	1950			2700	22×40	2070	25×35	2110	30×25	1720		
4700	22×45	2430	25×35	2430	30×30	2250			3300	22×45	2330	25×35	2270	30×30	2240		
5600	22×50	2750	25×40	2720	30×30	2640			3900			25×40	2510	30×35	2550		
6800			25×45	3300	30×35	3300	35×30	3250	4700			25×50	2970	30×40	2860	35×30	2800
8200					30×40	3600	35×35	3600	5600					30×40	3220	35×35	3200
10000					30×50	4050	35×40	4040	6800					30×50	3650	35×40	3650
12000							35×45	4560	8200							35×45	4040
15000							35×50	4770	10000							35×50	4480

LP Series

◆ Case size & Permissible rated ripple current (mA rms) at 105°C / 120Hz

Vdc ΦD μF	80								Vdc ΦD μF	100							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
1000	22×25	1190							680	22×25	1090						
1200	22×30	1440							820	22×30	1320						
1500	22×30	1590	25×25	1590					1000	22×30	1470	25×25	1450				
1800	22×35	1790	25×30	1710					1200	22×35	1690	25×30	1680				
2200	22×40	2030	25×35	1980	30×25	1980			1500	22×40	1970	25×35	1980	30×25	1950		
2700	22×45	2390	25×40	2350	30×30	2350			1800	22×45	2230	25×40	2200	30×30	2200		
3300			25×45	2640	30×35	2610	35×30	2740	2200			25×45	2530	30×35	2550	35×30	2500
3900			25×50	2920	30×40	2820	35×30	2970	2700			25×50	2820	30×40	2860	35×35	2890
4700					30×45	3340	35×35	3380	3300					30×45	3300	35×35	3250
5600					30×50	3800	35×40	3800	3900					30×50	3600	35×40	3670
6800							35×45	3900	4700							35×45	3800
8200							35×50	4200	5600							35×50	4050

Vdc ΦD μF	160								Vdc ΦD μF	180							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
220	22×25	920							270	22×25	970						
330	22×25	1030							330	22×30	1130						
390	22×30	1170							390	22×30	1320	25×25	1330				
470	22×30	1280	25×25	1290					470	22×35	1390	25×30	1430				
560	22×35	1450	25×30	1490					560	22×40	1560	25×30	1530	30×25	1560		
680	22×40	1640	25×35	1700	30×25	1630			680	22×45	1760	25×35	1760	30×30	1740		
820	22×45	1850	25×40	1920	30×30	1910			820	22×50	1970	25×40	1990	30×30	1930		
1000			25×45	2170	30×35	2190			1000			25×45	2240	30×35	2240	35×30	2200
1200			25×50	2430	30×40	2480	35×30	2250	1200					30×40	2530	35×35	2540
1500					30×45	2820	35×35	2620	1500					30×50	3030	35×40	2910
1800					30×50	3130	35×40	2970	1800							35×45	3250
2200							35×45	3340	2200							35×50	3620

Vdc ΦD μF	200								Vdc ΦD μF	220							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
270	22×25	990							220	22×25	940						
330	22×30	1200	25×25	1200					270	22×30	1090						
390	22×35	1300	25×30	1340					330	22×35	1240	25×30	1140				
470	22×40	1440	25×30	1440	30×25	1480			390	22×35	1300	25×30	1260				
560	22×45	1600	25×35	1600	30×30	1600			470	22×40	1410	25×35	1390	30×25	1370		
680	22×50	1750	25×40	1760	30×30	1740			560	22×45	1600	25×40	1560	30×30	1610	35×25	1520
820			25×45	2100	30×35	2110	35×30	2100	680			25×45	1750	30×35	1760	35×30	1720
1000			25×50	2360	30×40	2400	35×35	2300	820			25×50	1970	30×40	2060	35×30	1950
1200					30×45	2690	35×35	2530	1000					30×45	2440	35×35	2200
1500							35×40	2970	1200							35×40	2370
1800							35×50	3450	1500							35×45	2640

LP Series

◆ Case size & Permissible rated ripple current: (mA rms) at 105°C / 120Hz.

Vdc ΦD μF	250								Vdc ΦD μF	315							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
180	22×25	840							120	22×25	560						
220	22×30	970	25×25	990					150	22×30	660	25×25	650				
270	22×35	1110	25×30	1150					180	22×35	780	25×30	710				
330	22×40	1260	25×30	1260	30×25	1310			220	22×40	890	25×30	850	30×25	830		
390	22×45	1410	25×35	1420	30×30	1500			270	22×45	1010	25×35	980	30×30	1010		
470	22×50	1580	25×40	1610	30×30	1610			330	22×50	1140	25×40	1120	30×35	1210		
560			25×45	1800	30×35	1840			390			25×45	1310	30×35	1300	35×30	1230
680			25×50	2030	30×40	2090	35×30	1960	470					30×40	1530	35×35	1470
820					30×45	2350	35×35	2260	560					30×45	1650	35×40	1660
1000					30×50	2640	35×40	2570	680					30×45	1800	35×45	1960
1200							35×45	2880	820							35×50	2190
1500							35×50	3000	1000								

Vdc ΦD μF	350								Vdc ΦD μF	385							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
82									68	22×25	450						
100	22×25	530							82	22×30	520						
120	22×30	610	25×25	620					100	22×30	580	25×25	570				
150	22×35	730	25×30	730					120	22×35	680	25×30	680				
180	22×40	830	25×30	800	30×25	810			150	22×40	790	25×30	780	30×25	750		
220	22×45	940	25×35	920	30×30	980			180	22×45	890	25×35	860	30×30	880		
270	22×50	1070	25×40	1050	30×30	1030			220	22×50	1010	25×40	1000	30×30	1000		
330			25×45	1240	30×35	1240	35×30	1180	270			25×45	1130	30×40	1140	35×30	1100
390			25×50	1380	30×40	1390	35×35	1390	330					30×45	1310	35×35	1320
470					30×45	1570	35×35	1500	390					30×50	1480	35×40	1480
560					30×50	1750	35×40	1690	470							35×45	1760
680							35×45	1960	560							35×50	1950

Vdc ΦD μF	400								Vdc ΦD μF	420							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
82	22×30	560							82	22×30	560						
100	22×30	620	25×25	610					100	22×30	630						
120	22×35	730	25×30	730					120	22×35	730	25×25	630				
150	22×40	850	25×35	850	30×25	790			150	22×45	860	25×30	720	30×25	830		
180	22×45	950	25×35	920	30×30	950			180	22×50	1020	25×35	830	30×30	950	35×25	900
220	22×50	1080	25×40	1050	30×35	1240			220			25×40	940	30×35	1090	35×30	1050
270			25×50	1290	30×40	1300	35×30	1180	270			25×45	1130	30×40	1250	35×35	1250
330					30×45	1470	35×35	1140	330			25×50	1370	30×45	1490	35×35	1420
390					30×50	1640	35×40	1590	390					30×50	1670	35×40	1610
470							35×45	1870	470							35×45	1860
560							35×50	2090	560								

LP Series

◆ Case size & Permissible rated ripple current: (mA rms) at 105°C / 120Hz.

Vdc ΦD μF	450								Vdc ΦD μF	500							
	Φ 22		Φ 25		Φ 30		Φ 35			Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
56	22×25	420							56	22×30	430						
68	22×30	500	25×25	500					68	22×30	520	25×25	550				
82	22×35	560	25×30	570					82	22×35	620	25×30	570				
100	22×40	640	25×30	630	30×25	670			100	22×45	680	25×30	720				
120	22×45	720	25×35	710	30×30	770			120	22×50	760	25×35	790	30×30	910		
150	22×50	800	25×40	820	30×30	850			150			25×45	1080	30×35	1040	35×25	990
180			25×45	930	30×35	970			180			25×50	1200	30×40	1170	35×30	1100
220			25×50	1050	30×40	1100	35×30	1010	220					30×45	1330	35×35	1230
270					30×45	1250	35×35	1260	270					30×50	1500	35×40	1420
330					30×50	1420	35×40	1440	330							35×45	1600
390							35×45	1610	390							35×50	1780
470							35×50	1800	470								

◆ RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

Vdc	Frequency (Hz)			
	120	1K	10K	100K
10 ~ 50	1.00	1.03	1.05	1.08
63 ~ 100	1.00	1.07	1.13	1.19
160 ~ 250	1.00	1.32	1.45	1.50
315 ~ 500	1.00	1.30	1.41	1.43