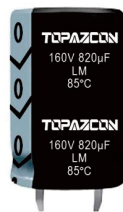


# LM Series

- Standard series for general purpose
- Load life 2,000 hours at 85°C
- RoHS Compliant

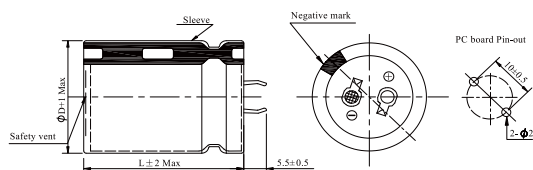


## ◆ SPECIFICATIONS

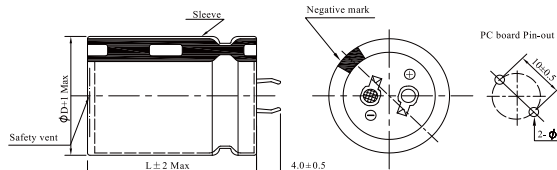
Item	Performance Characteristics																																										
Category Temperature Range	-40 ~ +85°C	-25 ~ +85°C																																									
Working Voltage Range	10 ~ 100Vdc	160 ~ 500Vdc																																									
Capacitance Range	820 ~ 82,000µF	68 ~ 3,300µF																																									
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> (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	-	-
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 85°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 85°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																									
Capacitance change	≒ ±20% of the initial value																																										
Dissipation factor(tanδ)	≒ 200% of the specified value																																										
Leakage current	≒ 200% of the specified value																																										

## ◆ DIMENSIONS (mm)

Terminal Code : 00 : Standard

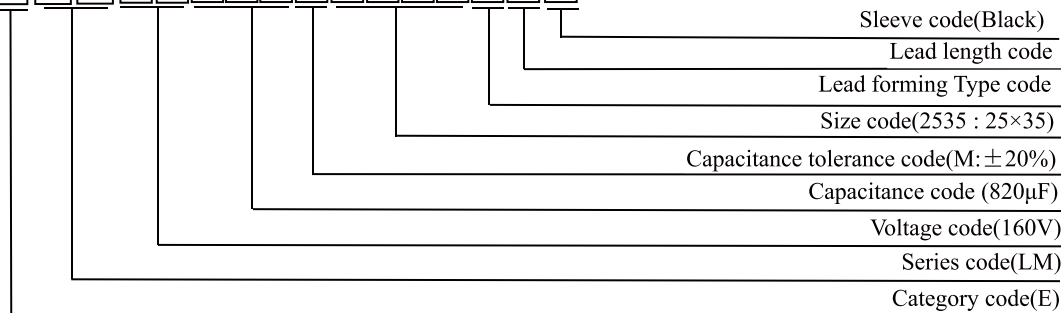


Terminal Code :0D



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

E L M 2 C 8 2 I M 2 5 3 5 0 0 B



# LM Series

◆ Case size & Permissible rated ripple current (mA rms) at 85°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
12000	22×25	2410							8200	22×25	2560						
15000	22×30	2880	25×25	2880					10000	22×30	2810						
18000	22×35	3220	25×30	3080					12000	22×30	3310	25×25	2960				
22000	22×40	3790	25×30	3660	30×25	3530			15000	22×35	3690	25×30	3640	30×25	3730		
27000	22×45	4040	25×35	4040	30×30	3990			18000	22×40	3980	25×35	3980	30×30	3880		
33000	22×50	4580	25×40	4560	30×30	4580			22000	22×50	4520	25×40	4440	30×30	4380		
39000			25×45	5290	30×35	5210	35×30	5050	27000			25×45	4980	30×35	4820	35×30	4820
47000			25×50	5780	30×40	5780	35×35	5550	33000			25×50	5490	30×40	5380	35×35	5330
56000					30×45	6590	35×35	6400	39000					30×45	6110	35×35	6010
68000					30×50	7500	35×40	7480	47000					30×50	6800	35×40	9800
82000							35×50	8500	56000							35×45	7620

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
5600	22×25	2310							3900	22×25	2220						
6800	22×30	2560							4700	22×30	2460	25×25	2430				
8200	22×35	2810	25×25	2780					5600	22×35	2790	25×30	2750				
10000	22×35	3180	25×30	3160					6800	22×40	2890	25×30	2890	30×25	3090		
12000	22×45	3530	25×35	3480	30×25	3530			8200	22×45	3470	25×35	3330	30×30	3290		
15000	22×50	4080	25×40	4000	30×30	4000			10000	22×50	3590	25×40	3590	30×30	3610	35×25	3610
18000			25×45	4680	30×35	4660	35×30	4680	12000			25×45	4010	30×35	4010	35×30	4020
22000					30×40	5190	35×35	5200	15000					30×40	4800	35×35	4800
27000					30×45	6020	35×40	6020	18000					30×45	5180	35×40	5710
33000							35×45	6750	22000							35×45	6380
39000							35×50	7560	27000							35×50	6900

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
2200	22×25	1930							1500								
2700	22×30	2210							1800	22×25	1900						
3300	22×30	2410	25×25	2380					2200	22×30	2350	25×25	2300				
3900	22×35	2720	25×30	2680					2700	22×35	2500	25×30	2490				
4700	22×40	3010	25×30	3030	30×25	3010			3300	22×40	2690	25×30	2690	30×25	2780		
5600	22×45	3430	25×35	3370	30×30	3430			3900	22×45	3100	25×35	3090	30×30	3090		
6800	22×50	3940	25×40	3870	30×35	3870			4700	22×50	3490	25×40	3370	30×30	3370		
8200			25×45	4370	30×35	4420	35×30	4410	5600			25×45	3800	30×35	3810	35×30	3750
10000					30×40	5020	35×35	4920	6800			25×50	4410	30×40	4410	35×35	4330
12000					30×50	5600	35×40	5600	8200					30×45	4900	35×35	4800
15000							35×45	6440	10000					30×50	5490	35×40	5470
18000							35×50	6710	12000							35×50	6300

# LM Series

◆ Case size & Permissible rated ripple current (mA rms) at 85°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
1200	22×25	1770							820	22×25	1860						
1500	22×30	2010							1000	22×30	2020						
1800	22×35	2250	25×25	2260					1200	22×30	2120	25×25	2100				
2200	22×40	2530	25×30	2530	30×25	2500			1500	22×35	2450	25×30	2430				
2700	22×45	2930	25×35	2930	30×30	2910			1800	22×40	2770	25×35	2770	30×25	2650		
3300	22×50	3250	25×40	3250	30×30	3230			2200	22×45	3120	25×40	3200	30×30	3100		
3900			25×45	3620	30×35	3620			2700			25×45	3610	30×35	3600	35×30	3710
4700			25×50	4280	30×40	4150	35×30	4100	3300			25×50	4060	30×40	4050	35×35	4070
5600					30×45	4550	35×35	4510	3900					30×45	4600	35×35	4500
6800					30×50	5180	35×40	5140	4700					30×50	5130	35×40	5120
8200							35×45	5830	5600							35×45	5750
10000									6800							35×55	6010

Vdc ΦD μF	160								Vdc ΦD μF	200							
	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
390	22×25	1550							270	22×25	1300						
470	22×30	1770	25×25	1770					330	22×25	1440						
560	22×35	2050	25×30	2050					390	22×30	1650	25×25	1630				
680	22×40	2240	25×30	2220	30×25	2220			470	22×35	1880	25×35	1880				
820	22×45	2550	25×35	2520	30×30	2510			560	22×40	2080	25×30	2050	30×25	2050		
1000	22×50	2880	25×40	2860	30×30	2820			680	22×45	2360	25×35	2360	30×30	2360		
1200			25×45	3270	30×35	3250	35×30	3240	820	22×50	2680	25×40	2660	30×30	2620		
1500					30×40	3770	35×35	3750	1000	22×50	3000	25×45	3120	30×35	3000	35×30	2960
1800					30×45	4100	35×35	4080	1200			25×50	3440	30×40	3440	35×35	3400
2200							35×40	4310	1500					30×50	3930	35×40	3870
2700							35×45	4720	1800							35×45	4370
3300							35×50	5300	2200							35×50	5000

Vdc ΦD μF	220								Vdc ΦD μF	250							
	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	1180							220	22×25	1180						
270	22×25	1310							270	22×30	1430						
330	22×30	1580	25×25	1490					330	22×30	1580	25×25	1530				
390	22×35	1690	25×30	1710					390	22×40	1790	25×30	1790				
470	22×40	1990	25×35	2000	30×25	1890			470	22×40	2050	25×35	2050	30×25	1940		
560	22×45	2280	25×35	2220	30×30	2190			560	22×45	2360	25×35	2240	30×30	2240		
680	22×50	2460	25×40	2400	30×30	2390			680			25×40	2540	30×35	2580		
820			25×45	2810	30×35	2700	35×30	2620	820			25×50	2870	30×35	2840	35×30	2820
1000			25×50	3130	30×40	3080	35×35	3050	1000					30×45	3390	35×35	3310
1200					30×45	3600	35×40	3510	1200					30×50	3800	35×40	3660
1500							35×45	3920	1500							35×45	4120

# LM Series

◆ Case size & Permissible rated ripple current: (mA rms) at 85°C / 120Hz.

Vdc ΦD μF	350								Vdc ΦD μF	400							
	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
120	22×25	990							82	22×25	800						
150	22×30	1440	25×25	1160					100	22×30	940						
180	22×35	1280	25×30	1300					120	22×30	1040	25×25	1080				
220	22×40	1400	25×35	1460	30×25	1470			150	22×35	1180	25×30	1210				
270	22×45	1620	25×35	1650	30×30	1710			180	22×40	1340	25×35	1370	30×25	1450		
330	22×50	1780	25×40	1880	30×35	1930			220	22×45	1500	25×35	1560	30×30	1580		
390			25×45	2040	30×35	2120	35×30	2190	270			25×40	1700	30×35	1730		
470					30×40	2410	35×35	2430	330			25×50	1900	30×40	1950	35×30	1950
560					30×45	2600	35×35	2620	390			25×50	2150	30×40	2150	35×35	2170
680							35×40	3000	470					30×50	2390	35×40	2420
820							35×50	3300	560							35×45	2710
1000									680							35×50	2950

Vdc ΦD μF	420								Vdc ΦD μF	450							
	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	22×25	750							100	22×25	920						
100	22×30	870	25×25	920					120	22×30	1020	25×25	1040	30×20	1070		
120	22×30	1010	25×25	1030					150	22×35	1120	25×30	1190	30×25	1230		
150	22×35	1190	25×30	1190	30×25	1140			180	22×40	1260	25×35	1330	30×30	1420		
180	22×45	1360	25×35	1370	30×25	1350			220			25×40	1510	30×30	1560	35×25	1580
220	22×50	1690	25×35	1580	30×30	1560			270			25×50	1650	30×40	1800	35×30	1810
270			25×40	1830	30×35	1720	35×30	1760	330					30×45	2100	35×30	2050
330			25×45	2180	30×40	1980	35×35	2040	390					30×45	2240	35×35	2270
390					30×45	2340	35×35	2260	470					30×45	2550	35×40	2550
470					30×50	2670	35×40	2600	560							35×45	2850
560							35×45	2930	680							35×50	3150
680							35×50	3250	820							35×55	3320

Vdc ΦD μF	500							
	Φ 22		Φ 25		Φ 30		Φ 35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
68	22×25	680						
82	22×25	880						
100	22×30	940	25×25	960				
120	22×35	1060	25×30	1090	30×25	1130		
150	22×40	1190	25×35	1230	30×25	1260		
180			25×40	1390	30×30	1430		
220					30×35	1600	35×30	1620
270							35×35	1850
330							35×40	2080
390							35×45	2310
470							35×50	2610

## ◆ RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

Vdc	Frequency (Hz)				
	50	120	1K	10K	≥50K
16 ~ 100	0.80	1.00	1.15	1.15	1.15
160 ~ 250	0.81	1.00	1.32	1.45	1.50
350 ~ 500	0.77	1.00	1.30	1.41	1.43