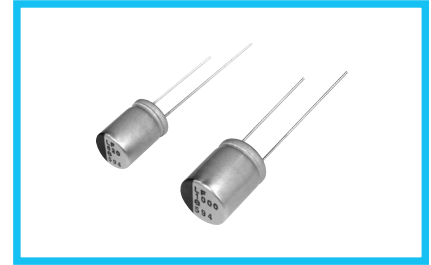
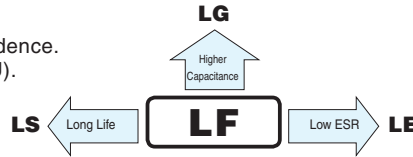


LF series Radial Lead Type, Standard



- Low ESR, High ripple current.
- Load life of 2000 hours at 105°C.
- Radial lead type :
Lead free flow soldering condition correspondence.
- Compliant to the RoHS directive (2011/65/EU).

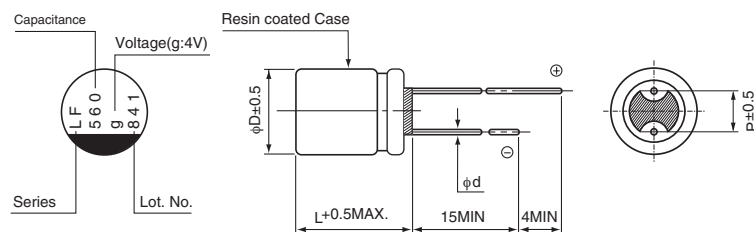


Specifications

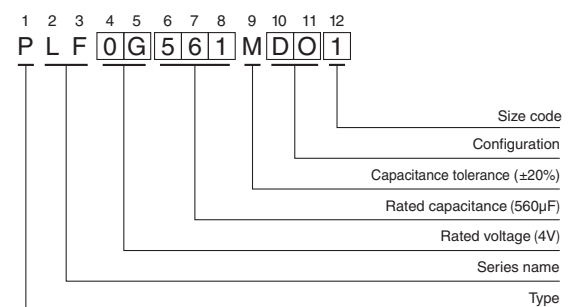
Item	Performance Characteristics									
Category Temperature Range	-55 to +105°C									
Rated Voltage Range	2.5 to 25V									
Rated Capacitance Range	6.8 to 1500μF									
Capacitance Tolerance	±20% at 120Hz, 20°C									
Tangent of loss angle (tan δ)	Less than or equal to the specified value at 120Hz, 20°C									
ESR (*1)	Less than or equal to the specified value at 100kHz, 20°C									
Leakage Current (*2)	Less than or equal to the specified value. After 2 minutes' application of rated voltage at 20°C									
Temperature Characteristics (Max.Impedance Ratio)	Z+105°C / Z+20°C ≤ 1.25 (100kHz) Z-55°C / Z+20°C ≤ 1.25									
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 105°C.	<table border="1"> <tr><td>Capacitance change</td><td>Within ± 20% of the initial capacitance value (*3)</td></tr> <tr><td>tan δ</td><td>150% or less than the initial specified value</td></tr> <tr><td>ESR (*1)</td><td>150% or less than the initial specified value</td></tr> <tr><td>Leakage current (*2)</td><td>Less than or equal to the initial specified value</td></tr> </table>	Capacitance change	Within ± 20% of the initial capacitance value (*3)	tan δ	150% or less than the initial specified value	ESR (*1)	150% or less than the initial specified value	Leakage current (*2)	Less than or equal to the initial specified value
Capacitance change	Within ± 20% of the initial capacitance value (*3)									
tan δ	150% or less than the initial specified value									
ESR (*1)	150% or less than the initial specified value									
Leakage current (*2)	Less than or equal to the initial specified value									
Damp Heat (Steady State)	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 60°C, 90% RH.	<table border="1"> <tr><td>Capacitance change</td><td>Within ± 20% of the initial capacitance value (*3)</td></tr> <tr><td>tan δ</td><td>150% or less than the initial specified value</td></tr> <tr><td>ESR (*1)</td><td>150% or less than the initial specified value</td></tr> <tr><td>Leakage current (*2)</td><td>Less than or equal to the initial specified value</td></tr> </table>	Capacitance change	Within ± 20% of the initial capacitance value (*3)	tan δ	150% or less than the initial specified value	ESR (*1)	150% or less than the initial specified value	Leakage current (*2)	Less than or equal to the initial specified value
Capacitance change	Within ± 20% of the initial capacitance value (*3)									
tan δ	150% or less than the initial specified value									
ESR (*1)	150% or less than the initial specified value									
Leakage current (*2)	Less than or equal to the initial specified value									
Resistance to Soldering Heat	After soldering the capacitor under the soldering conditions prescribed here as preheat at 150 to 200°C for 60 to 180 seconds and peak temperature at 265°C for 10 seconds or less, the capacitor shall meet the specifications listed at right, provided that its temperature profile is measured at both of terminal ends facing the soldering side.	<table border="1"> <tr><td>Capacitance change</td><td>Within ± 10% of the initial capacitance value (*3)</td></tr> <tr><td>tan δ</td><td>130% or less than the initial specified value</td></tr> <tr><td>ESR (*1)</td><td>130% or less than the initial specified value</td></tr> <tr><td>Leakage current (*2)</td><td>Less than or equal to the initial specified value</td></tr> </table>	Capacitance change	Within ± 10% of the initial capacitance value (*3)	tan δ	130% or less than the initial specified value	ESR (*1)	130% or less than the initial specified value	Leakage current (*2)	Less than or equal to the initial specified value
Capacitance change	Within ± 10% of the initial capacitance value (*3)									
tan δ	130% or less than the initial specified value									
ESR (*1)	130% or less than the initial specified value									
Leakage current (*2)	Less than or equal to the initial specified value									
Marking	Navy blue print on the case top									

- *1 ESR should be measured at both of the terminal ends closest to the capacitor body.
- *2 Conditioning : If any doubt arises, measure the leakage current after the voltage treatment of applying DC rated voltage continuously to the capacitor for 120 minutes at 105°C.
- *3 Initial value : The value before test of examination of resistance to soldering.

Dimensions



Type numbering system (Example : 4V 560μF)



Size	φ6.3 × 6L	φ6.3 × 9L	φ6.3 × 10.5L	φ8 × 7L	φ8 × 9L	φ8 × 12L	φ10 × 8L	φ10 × 10L	φ10 × 13L
φD	6.3	6.3	6.3	8.0	8.0	8.0	10.0	10.0	10.0
L	5.5	8.5	10.0	6.5	8.5	11.5	7.5	9.5	12.5
P	2.5	2.5	2.5	3.5	3.5	3.5	5.0	5.0	5.0
φd	0.45	0.6	0.5	0.6	0.6	0.6	0.6	0.6	0.6

Voltage

V	2.5	4	6.3	10	16	20	25
Code	e	g	j	A	C	D	E

Please refer to page 20 about the end seal configuration.

● Dimension table in next page.



Standard Ratings

Rated Voltage (V)(code)	Surge Voltage (V)	Rated Capacitance (μF)	Case Size φD × L (mm)	tan δ	Leakage Current (μA)	ESR (mΩ) (at 100kHz 20°C)	Rated Ripple (mArms)	Part Number
2.5 (0E)	2.8	330	○ 6.3 × 9	0.08	500	7	5600	PLF0E331MCO8
		390	■ 6.3 × 10.5	0.08	195	20	3200	PLF0E391MDL4
		560	○ 6.3 × 9	0.08	500	7	5600	PLF0E561MCO8
		560	8 × 9	0.08	280	6	4800	PLF0E561MCO1
		680	▲ 8 × 9	0.08	340	7	4800	PLF0E681MCO6
		680	8 × 12	0.08	340	6	5700	PLF0E681MDO1
		820	○ 6.3 × 9	0.08	500	7	5600	PLF0E821MCO8
		820	▲ 8 × 9	0.08	410	7	5200	PLF0E821MCO6
		820	8 × 12	0.08	410	6	6200	PLF0E821MDO1
		1000	10 × 13	0.08	500	6	6500	PLF0E102MDO1
		1200	10 × 13	0.08	600	8	5300	PLF0E122MDO1
		1500	▲ 8 × 12	0.08	750	7	6100	PLF0E152MDO6
		1500	10 × 13	0.08	750	8	5500	PLF0E152MDO1
4 (0G)	4.6	270	○ 6.3 × 9	0.08	500	7	5600	PLF0G271MCO8
		270	■ 6.3 × 10.5	0.08	216	20	3200	PLF0G271MDL4
		390	■ 6.3 × 10.5	0.08	312	24	3300	PLF0G391MDL4
		560	▲ 8 × 9	0.08	448	7	5200	PLF0G561MCO6
		560	8 × 12	0.08	448	7	5500	PLF0G561MDO1
		680	8 × 12	0.08	544	6	6200	PLF0G681MDO1
		820	10 × 13	0.08	656	6	6500	PLF0G821MDO1
		1000	10 × 13	0.08	800	6	6640	PLF0G102MDO1
		1200	10 × 13	0.08	960	8	5600	PLF0G122MDO1
				220	■ 6.3 × 10.5	0.08	277	20
6.3 (0J)	7.2	330	■ 6.3 × 10.5	0.08	416	24	3300	PLF0J331MDL4
		470	▲ 8 × 9	0.08	592	7	5200	PLF0J471MCO6
		470	8 × 12	0.08	592	7	5500	PLF0J471MDO1
		680	10 × 13	0.08	857	6	6300	PLF0J681MDO1
		47	■ 6.3 × 10.5	0.08	94	25	2900	PLF1A470MDL4
10 (1A)	11.5	68	■ 6.3 × 10.5	0.08	136	25	2900	PLF1A680MDL4
		100	■ 6.3 × 10.5	0.08	200	25	2900	PLF1A101MDL4
		150	■ 6.3 × 10.5	0.08	300	25	2900	PLF1A151MDL4
		270	8 × 12	0.08	540	8	4900	PLF1A271MDO1
		470	10 × 13	0.08	940	7	5700	PLF1A471MDO1
		560	10 × 13	0.08	1120	7	5900	PLF1A561MDO1
		680	10 × 13	0.08	1360	7	6100	PLF1A681MDO1
		100	■ 6.3 × 10.5	0.08	320	24	2900	PLF1C101MDL4
16 (1C)	18.4	180	8 × 12	0.08	576	9	5000	PLF1C181MDO1
		270	8 × 12	0.08	864	9	5100	PLF1C271MDO1
		330	10 × 13	0.08	1056	9	6100	PLF1C331MDO1
		470	10 × 13	0.08	1504	9	6100	PLF1C471MDO1
		22	△ 6.3 × 6	0.12	88	50	1700	PLF1D220MCL2
20 (1D)	23	39	△ 8 × 7	0.12	156	45	2000	PLF1D390MCL2
		47	△ 8 × 7	0.12	188	45	2000	PLF1D470MCL2
		56	△ 10 × 8	0.12	224	40	2400	PLF1D560MCL2
		68	△ 10 × 8	0.12	272	40	2600	PLF1D680MCL2
		82	△ 10 × 8	0.12	328	40	2600	PLF1D820MCL2
		100	△ 8 × 12	0.12	400	22	3320	PLF1D101MDO2
		120	△ 10 × 10	0.12	480	35	2800	PLF1D121MCL2
		150	△ 10 × 13	0.12	600	20	4320	PLF1D151MDO2
		25 (1E)	28.7	6.8	△ 6.3 × 6	0.12	85	80
10	□ 6.3 × 6			0.12	125	65	1500	PLF1E100MCL7
10	△ 8 × 7			0.12	125	60	1500	PLF1E100MCL2
22	□ 8 × 7			0.12	275	50	1800	PLF1E220MCL7
47	△ 10 × 13			0.12	588	30	3000	PLF1E470MDO2
56	△ 10 × 13			0.12	700	28	3800	PLF1E560MDO2

※ Parts with 5000h guaranteed life are also available upon request.

Rated ripple current (mArms) at 105°C 100kHz

- Please refer to page 20, 21, 22 about the formed or taped product spec.
- Please refer to page 3 for the minimum order quantity.

No marked, [1] will be put at 12th digit of type numbering system.
 △ : In this case, [2] will be put at 12th digit of type numbering system.
 ■ : In this case, [4] will be put at 12th digit of type numbering system.
 ▲ : In this case, [6] will be put at 12th digit of type numbering system.
 □ : In this case, [7] will be put at 12th digit of type numbering system.
 ○ : In this case, [8] will be put at 12th digit of type numbering system.

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