LL Series Low Leakage Current

Features

- ◆ Extremely low and stable leakage current characteristics.
- ◆ Close capacitance tolerance ±20% (±10% on requested)
- ◆ RoHS Compliant

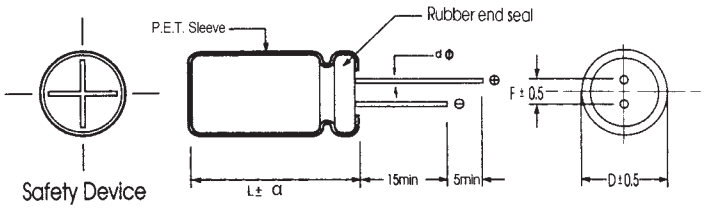
Specifications

Item	Performance Characteristics
Operating Temperature Range	-40 to +105℃
Rated Voltage Range	6.3 to 63 VDC
Capacitance Range	0.1 to 2200 μF
Capacitance Tolerance	±20% (120Hz, +20℃)
Leakage Current(+20℃, max)	I≦0.002 CV or 0.4 (μA) After 3 minutes(90sec. ≦10μF) whichever is greater measured with rated working voltage applied.
Dissipation Factor (tanδ，at 20℃，120Hz)	Rated Voltage(VDC): 6.3, 10, 16, 25, 35, 50, 63 D.F. (%)max.: 20, 17, 13, 10, 9, 8, 8
Low Temperature Characteristics (at 120Hz)	Impedance ratio max Rated Voltage(VDC): 6.3, 10, 16, 25, 35, 50, 63 Z-40℃／Z+20℃: 4, 3, 3, 2, 2, 2, 2
Endurance	Test conditions Duration time :2000Hrs Ambient temperature :+105℃ Applied voltage :Rated DC working voltage After test requirement at +20℃ Capacitance change :≦ ±20% of the initial measured value Dissipation factor :≦ 150% of the initial specified value Leakage current :≦ The initial specified value
Shelf Life	Test conditions Duration time :1000Hrs Ambient temperature :+105℃ Applied voltage :None After test requirement at +20℃:Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Multiplier for Ripple Current vs. Frequency

CAP(μF)／Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP≦10	0.80	1.00	1.30	1.45	1.65	1.7
10< CAP≦100	0.80	1.00	1.23	1.36	1.48	1.53
100< CAP≦2200	0.80	1.00	1.16	1.25	1.35	1.38

Diagram of Dimensions:(unit:mm)



Dφ	5	6.3	8	10	13
F	2.0	2.5	3.5	5.0	5.0
dφ	0.5			0.6	

α	D<16	D=16		D=18		D>18
		L:25~35.5	L< 25 and L≧40	L:25~31.5	L< 25 and L≧35.5	
	1.5	1.5	2.0	1.5	2.0	2.0

Radial

Case Size

WV (Vdc)	Cap (uF)	Size (mm)	Rated Ripple current (mArms/105℃ /120Hz)
6.3	22	5x11	36
6.3	33	5x11	44
6.3	47	5x11	53
6.3	100	5x11	74
6.3	220	6.3x11	131
6.3	330	6.3x11	161
6.3	470	8x11.5	242
6.3	1000	10x12.5	390
6.3	2200	13x20	665
10	22	5x11	50
10	33	5x11	66
10	47	5x11	75
10	100	5x11	104
10	220	8x11.5	193
10	330	8x11.5	256
10	470	8x11.5	319
10	1000	10x16	605
10	2200	13x20	860
16	10	5x11	39
16	22	5x11	62
16	33	5x11	68
16	47	5x11	105
16	100	6.3x11	138
16	220	8x11.5	220
16	330	8x11.5	268
16	470	10x12.5	407
16	1000	10x20	704
16	2200	13x25	890
25	4.7	5x11	32
25	10	5x11	43
25	22	5x11	65
25	33	5x11	76
25	47	6.3x11	116
25	100	8x11.5	149
25	220	10x12.5	246
25	330	10x12.5	352
25	470	10x16	484
25	1000	13x20	847

WV (Vdc)	Cap (uF)	Size (mm)	Rated Ripple current (mArms/105℃ /120Hz)
35	4.7	5x11	33
35	10	5x11	48
35	22	6.3x11	71
35	33	6.3x11	83
35	47	6.3x11	125
35	100	8x11.5	187
35	220	10x12.5	330
35	330	10x16	440
35	470	13x20	590
35	1000	13x25	1012
50	0.1	5x11	9
50	0.22	5x11	9
50	0.33	5x11	9
50	0.47	5x11	12
50	1	5x11	17
50	2.2	5x11	24
50	3.3	5x11	29
50	4.7	5x11	36
50	10	5x11	52
50	22	6.3x11	77
50	33	6.3x11	99
50	47	8x11.5	138
50	100	10x12.5	217
50	220	10x20	380
50	330	13x20	506
50	470	13x25	705
63	0.1	5x11	9
63	0.22	5x11	9
63	0.33	5x11	9
63	0.47	5x11	12
63	1	5x11	17
63	2.2	5x11	24
63	3.3	5x11	32
63	4.7	5x11	39
63	10	6.3x11	58
63	22	6.3x11	94
63	33	8x11.5	110
63	47	8x11.5	152
63	100	10x16	260
63	220	13x20	440
63	330	13x25	594