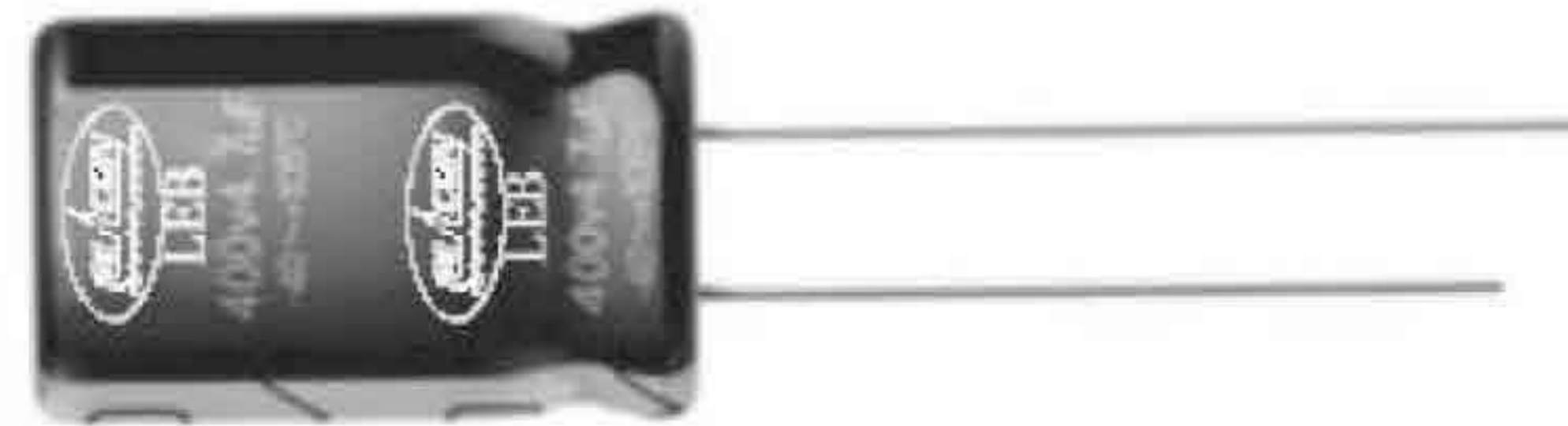


LEB SERIES

- Standard series for general purposes
- Wide temperature range from -40°C~+105°C
- Endurance: +105°C,5000 hours
- RoHS Compliant

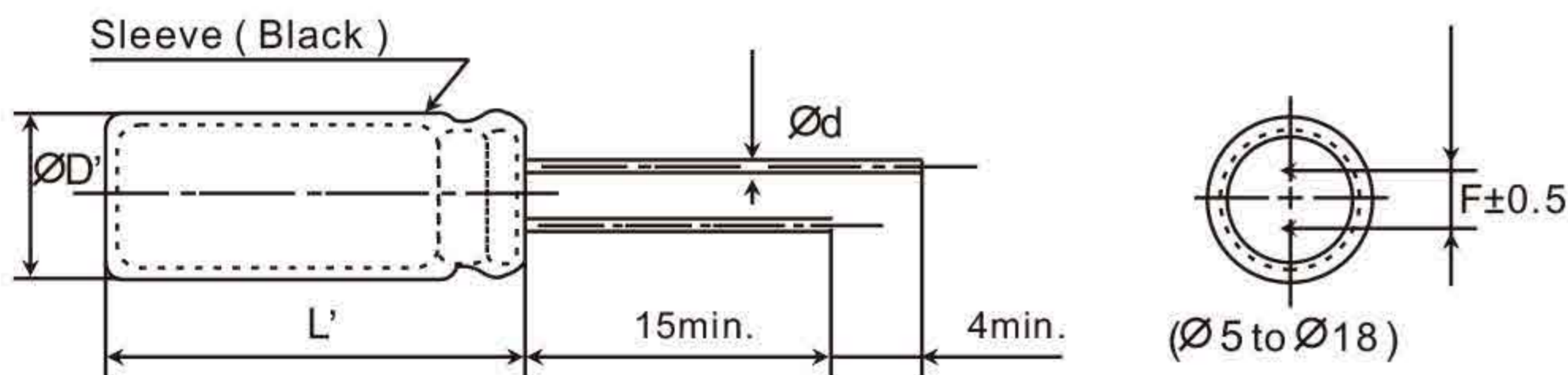


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◆ SPECIFICATIONS

Items	Characteristics													
Category	-40 to +105°C(6.3 to 100Vdc) -25 to +105°C(160 to 450Vdc)													
Temperature Range														
Rated Voltage Range	6.3 to 450V _{dc}													
Capacitance Tolerance	± 20%(M) (at 20°C, 120Hz)													
Leakage Current	6.3 to 100V _{dc}			160 to 450V _{dc}									Where, I : Max.leakage current (µA). C : Nominal capacitance (µF). V : Rated voltage (V). (at 20°C)	
	I ≤ 0.03CV or 4µA(at 1 minute)			CV			After 1 minutes			After 5 minutes				
	I ≤ 0.01CV or 3µA(at 2 minute)			CV ≤ 1,000			I ≤ 0.1CV+40µA			I ≤ 0.03CV+15µA				
	Whichever is greater			CV > 1,000			I ≤ 0.04CV+100µA			I ≤ 0.02CV+25µA				
Dissipation Factor (tanδ)	Rated voltage (V _{dc})	6.3	10	16	25	35	50	63	100	160~250	350-400	450	(at 20°C, 120Hz)	
	tanδ (Max.)	0.26	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.20	0.24	0.24		
	When nominal capacitance exceeds 1.000 µF, add 0.02 to the value above for each 1.000µF increase.													
Low Temperature Characteristics (Max.Impedance Ratio)	Rated voltage (V _{dc})	6.3	10	16	25	35	50	63	100	160~250	350-400	450	(at 120Hz)	
	Z(-25°C)/Z(+20°C)	5	4	3	2			3			6	6		
	Z(-40°C)/Z(+20°C)	12	10	8	5	4	3			-	-	-		
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 ,5000 hours at 105°C													
	Capacitance change	≤±20% of the initial value												
	D.F. (tanδ)	≤ 200% of the initial specified value												
	Leakage current	≤ The initial specified value												
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1.000 hours at 105°C without Voltage applied													
	Capacitance change	≤±20% of the initial value												
	D.F. (tanδ)	≤ 200% of the initial specified value												
	Leakage current	≤ 200% of the initial specified value												

◆ DIMENSIONS [mm]



ØD	5	6.3	8	10	12.5	16	18
Ød	0.5	0.5	0.5	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
ØD'	ØD+0.5max.						
L'	L+2max.						

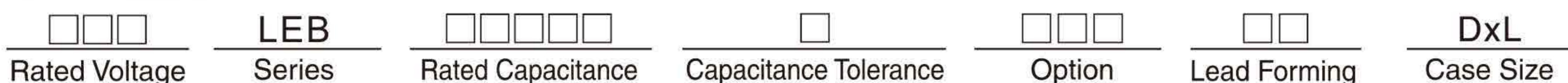
◆ RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

Freq.(Hz)	50	120	300	1K	10K	100K
Cap.(µF)						
0.1 to 4.7	0.65	1.00	1.35	1.75	2.30	2.50
10 to 47	0.75	1.00	1.25	1.50	1.75	1.80
100 to 1000	0.80	1.00	1.15	1.30	1.40	1.50
2.200 to	0.85	1.00	1.03	1.05	1.08	1.08

The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise, When long life performance is required in actual use, the rms ripple current has to be reduced.

◆ PART NUMBER



◆ **STANDARD RATINGS**

WV (Vdc)	Cap (μF)	Case size ΦDxL(mm)	tanδ	Ripple current (mAmps/105°C,120Hz)
6.3(0J)	33	5X11	0.26	54
	47	5X11	0.26	64
	100	5X11	0.26	94
	220	5X11	0.26	140
	330	6.3X11	0.26	190
	470	6.3X11	0.26	230
	1000	8X11.5	0.26	380
	2200	10X20	0.28	710
	3300	10X20	0.30	840
	4700	12.5X20	0.32	1090
	6800	12.5X25	0.36	1350
	10000	16X25	0.44	1650
	15000	16X35	0.54	2010
	22000	18X40	0.68	2350
	10(1A)	22	5X11	0.19
33		5X11	0.19	57
47		5X11	0.19	68
100		5X11	0.19	100
220		6.3X11	0.19	170
330		6.3X11	0.19	200
470		6.3X11	0.19	250
1000		10X12	0.19	460
2200		10X20	0.21	760
3300		12.5X20	0.23	1000
4700		12.5X25	0.25	1260
6800		16X25	0.29	1570
10000		16X35	0.37	1890
15000		18X35	0.47	2180
16(1C)		10	5X11	0.16
	22	5X11	0.16	51
	33	5X11	0.16	63
	47	5X11	0.16	75
	100	5X11	0.16	110
	220	6.3X11	0.16	180
	330	8X11.5	0.16	260
	470	8X12	0.16	310
	1000	10X16	0.16	560
	2200	12.5X20	0.18	920
	3300	12.5X25	0.20	1170
	4700	16X25	0.22	1480
	6800	16X30	0.26	1780
	10000	18X35	0.34	2060
	25(1E)	4.7	5X11	0.14
10		5X11	0.14	36
22		5X11	0.14	54
33		5X11	0.14	67
47		5X11	0.14	80
100		6.3X11	0.14	130
220		8X11.5	0.14	230
330		8X11.5	0.14	310
470		10X14	0.14	380
1000		10X20	0.14	680
2200		12.5X25	0.16	1090
3300		16X25	0.18	1400
4700		16X30	0.20	1710
6800		18X35	0.24	2040

WV (Vdc)	Cap (μF)	Case size ΦDxL(mm)	tanδ	Ripple current (mAmps/105°C,120Hz)	
35(1V)	4.7	5X11	0.12	28	
	10	5X11	0.12	41	
	22	5X11	0.12	61	
	33	5X11	0.12	75	
	47	5X11	0.12	90	
	100	6.3X11	0.12	150	
	220	8X11	0.12	270	
	330	10X12	0.12	350	
	470	10X16	0.12	460	
	1000	10X20	0.12	810	
	2200	16X25	0.14	1260	
	3300	16X35	0.16	1610	
	4700	18X35	0.18	1910	
	50(1H)	0.10	5X11	0.10	1.3
		0.22	5X11	0.10	2.9
0.33		5X11	0.10	4.3	
0.47		5X11	0.10	6.2	
1.0		5X11	0.10	13	
2.2		5X11	0.10	20	
3.3		5X11	0.10	25	
4.7		5X11	0.10	30	
10		5X11	0.10	40	
22		5X11	0.10	65	
33		5X11	0.10	90	
47		6.3X11	0.10	110	
100		8X11	0.10	180	
220		10X12	0.10	300	
330		10X16	0.10	410	
470	10X20	0.10	530		
1000	13X25	0.10	950		
2200	16X35	0.12	1470		
3300	18X35	0.14	1770		
63(1J)	10	5X11	0.09	46	
	22	5X11	0.09	71	
	33	6.3X11	0.09	100	
	47	8X12	0.09	120	
	100	10X12	0.09	215	
	220	10X16	0.09	335	
	330	10X20	0.09	510	
	470	13X21	0.09	640	
	1000	16X25	0.09	930	
	100(1K)	0.10	5X11	0.08	1.5
0.22		5X11	0.08	3.4	
0.33		5X11	0.08	5.0	
0.47		5X11	0.08	7.1	
1.0		5X11	0.08	15	
2.2		5X11	0.08	21	
3.3		5X11	0.08	29	
4.7		5X11	0.08	62	
10		6.3X11	0.08	54	
22		8X12	0.08	93	
33		8X11.5	0.08	130	
47		10X12	0.08	165	
100		10X20	0.08	265	
220		13X21	0.08	440	

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◆ **STANDARD RATINGS**

WV (Vdc)	Cap (μF)	Case size ΦDxL(mm)	tanδ	Ripple current (mAms/105°C,120Hz)
100(1K)	330	16X25	0.08	540
	470	16X30	0.08	715
	1000	18X40	0.08	985
160(2C)	3.3	6.3X11	0.20	28
	4.7	6.3X11	0.20	34
	10	10X12	0.20	67
	22	10X20	0.20	120
	33	10X20	0.20	145
	47	10X16	0.20	195
	100	13X20	0.20	335
	220	16X30	0.20	540
	330	18X35	0.20	705
200(2D)	3.3	6.3X11	0.20	28
	4.7	8X11.5	0.20	39
	10	8X16	0.20	74
	22	8X20	0.20	120
	33	12.5X20	0.20	160
	47	12.5X20	0.20	195
	68	12.5X25	0.20	250
	82	12.5X25	0.20	300
	100	16X.25	0.20	335
	150	16X25	0.20	390
	180	16X30	0.20	450
	220	18X30	0.20	575
	330	22X30	0.20	650
	470	22X30	0.20	700
	2.2	6.3X11	0.20	23
250(2E)	3.3	8X11.5	0.20	32
	4.7	8X11.5	0.20	39
	10	8X16	0.20	74
	22	10X16	0.20	130
	33	10X20	0.20	160
	47	12.5X25	0.20	210
	100	16X30	0.20	365
	150	16X35	0.20	460
	220	22X30	0.20	585
330	18X40	0.20	700	

WV (Vdc)	Cap (μF)	Case size ΦDxL(mm)	tanδ	Ripple current (mAms/105°C,120Hz)
350(2V)	0.47	6.3X11	0.24	11
	1.0	6.3X11	0.24	15
	2.2	8X11.5	0.24	26
	3.3	10X12	0.24	38
	4.7	10X16	0.24	50
	10	10X20	0.24	80
	22	12.5X20	0.24	130
	33	16X20	0.24	195
	47	16X25	0.24	230
400(2G)	1.0	6.3X11	0.24	15
	2.2	8X11	0.24	26
	3.3	10X12	0.24	38
	4.7	10X16	0.24	50
	10	10X20	0.24	80
	22	12.5X25	0.24	165
	33	16X20	0.24	215
	47	16X25	0.24	300
	68	10X25	0.24	310
	82	18X25	0.24	320
	100	13X50	0.24	350
		13X50	0.24	450
	120	18X35	0.24	550
	150	18X40	0.24	700
	450(2W)	0.47	12X12	0.24
1.0		10X12	0.24	13
2.2		10X12	0.24	23
3.3		10X16	0.24	31
4.7		10X20	0.24	40
10		12.5X20	0.24	95
22		16X20	0.24	185
33		16X25	0.24	215
47		16X30	0.24	320
68		18X30	0.24	350
82		18X30	0.24	400
100		18X35	0.24	450
120		18X40	0.24	550
150	18X50	0.24	650	

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