

# LBX Series

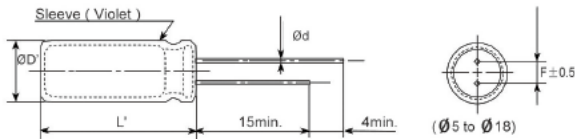
- Extremely high temperature & Long life design
- Life time: +150°C 2000 hours
- Suit for Automobile Transmission、Aircraft Power Supply、Telecommunication and other high temperature application
- RoHs Compliant



## ◆ SPECIFICATIONS

Items	Characteristics											
<b>Category Temperature Range</b>	-40 ~ +150°C						-25 ~ +150°C					
<b>Rated Voltage Range</b>	6.3 ~ 100 Vdc						160 ~ 450 Vdc					
<b>Capacitance Tolerance</b>	±20%(M)						( at 20°C, 120Hz)					
<b>Leakage Current</b>	6.3 to 100Vdc : I=0.01CV(μA) or 3μA, which is greater.						160 to 450Vdc : I≤0.04CV +100μA					
	Where, I: Max. leakage current (μA), C: Nominal capacitance (μF), V: Rated voltage(V) ( at 20°C after 1 minutes)											
<b>Dissipation Factor (tan δ)</b>	Rated Voltage (Vdc)	6.3v	10v	16v	25v	35v	50v	63v	80v	100v	160 to 250v	350 ~ 450v
	tanδ(Max.)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.09	0.08	0.20	0.24
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase . ( at 20°C, 120Hz)											
<b>Low Temperature Characteristics (Max. Impedance Ratio)</b>	Rated Voltage (Vdc)		6.3 to 100v			160 to 250v			350 to 450v			( at 120Hz)
	Z(-25°C)/Z(+20°C)		2max			3			6			
	Z(-40°C)/Z(+20°C)		3max			6			6			
<b>Endurance</b>	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 2000 hours at 150°C.											
	Capacitance change		≤±20% of the initial value.									
	D.F. (tan δ)		≤150% of the initial specified value.									
	Leakage current		≤ The initial specified value.									
<b>Shelf Life</b>	The following specifications shall be satisfied when the capacitors performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C after exposing them for 1000hours at 150°C without voltage applied.											
	Capacitance change		≤±20% of the initial value.									
	D.F. (tan δ)		≤200% of the initial specified value.									
	Leakage current		≤The initial specified value.									

## ◆ DIMENSIONS [mm]



φD	5	6.3	8	10	12.5	16	18	22
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0
φD'					φD+0.5max.			
L'					L+2.0max.			

## ◆ RATED RIPPLE CURRENT MULTIPLIERS

### FREQUENCY COEFFICIENT

Freq.(Hz) μF	120	1K	10K	100K
6.8 ~ 180	0.40	0.75	0.90	1.00
220 ~ 560	0.44	0.85	0.94	1.00
680 ~ 1800	0.60	0.87	0.95	1.00
2200 ~ 3900	0.75	0.90	0.95	1.00
4700 ~	0.85	0.95	0.98	1.00

### Part number system for Radial type:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		L	B	X	2	G	1	0	0	E	G	0	2	0	M
Type of series					Voltage code(V)		Capacitance code(μF)			Sleeve material	Diameter (mm)	The length(mm)		Capacitance tolerance	

◆ Standard Rating of LBX Series (6.3v-100v)

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	IMP.(Ωmax)100KHz		Ripple current mA/150°C, 100KHz
			20°C	-10°C	
6.3(0J)	150	5×11	0.30	1.00	230
	330	6.3×11	0.13	0.41	405
	560	8×11.5	0.072	0.22	760
	820	8×16	0.056	0.17	995
	1000	10×12.5	0.053	0.16	1030
	1200	10×16	0.038	0.12	1430
	1500	10×20	0.023	0.069	1820
	2200	10×25	0.022	0.066	2150
	3300	12.5×20	0.021	0.053	2360
	3900	12.5×25	0.018	0.045	2770
	4700	12.5×30	0.016	0.041	3140
	5600	16×20	0.018	0.045	3290
6800	16×25	0.016	0.043	3460	
10(1A)	100	5×11	0.30	1.00	250
	220	6.3×11	0.13	0.41	405
	470	8×11.5	0.072	0.22	760
	680	10×12.5	0.053	0.16	1030
	1000	10×16	0.038	0.12	1430
	1200	10×20	0.023	0.069	1820
	1500	10×25	0.022	0.066	2150
	2200	12.5×20	0.021	0.053	2360
	3300	12.5×25	0.018	0.045	2770
	3900	12.5×30	0.016	0.041	3290
	4700	12.5×30	0.015	0.039	3400
	5600	16×25	0.016	0.043	3460
16(1C)	56	5×11	0.30	1.00	250
	120	6.3×11	0.13	0.41	405
	330	8×11.5	0.072	0.22	760
	470	10×12.5	0.053	0.16	1030
	680	10×16	0.038	0.12	1430
	1000	10×20	0.023	0.069	1820
	1200	10×25	0.022	0.066	2150
	1500	12.5×20	0.021	0.053	2360
	2200	12.5×25	0.018	0.045	2770
	2700	12.5×30	0.016	0.041	3290
	3300	12.5×30	0.015	0.039	3400
	3900	16×25	0.016	0.043	3460
4700	16×25	0.015	0.041	3560	
6800	16×25	0.014	0.049	3740	
25(1E)	47	5×11	0.30	1.00	250
	100	6.3×11	0.13	0.41	405
	220	8×11.5	0.072	0.22	760
	330	10×12.5	0.053	0.16	1030
	470	10×16	0.038	0.12	1430
	680	10×20	0.023	0.069	1820
	820	10×25	0.022	0.066	2150
	1000	12.5×20	0.021	0.053	2360
	1500	12.5×25	0.018	0.045	2770
	1800	12.5×30	0.016	0.041	3290
	2200	16×25	0.015	0.040	3420
	2700	16×25	0.015	0.039	3460
	3300	16×35	0.014	0.039	3560
	3900	18×35	0.015	0.040	3630
4700	18×40	0.014	0.037	3735	

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	IMP.(Ωmax)100KHz		Ripple current mA/150°C, 100KHz
			20°C	-10°C	
35(1V)	33	5×11	0.30	1.00	250
	56	6.3×11	0.13	0.41	405
	150	8×11.5	0.072	0.22	760
	220	10×12.5	0.053	0.16	1030
	330	10×16	0.038	0.12	1430
	470	10×20	0.023	0.069	1820
	560	10×25	0.022	0.066	2150
	680	10×20	0.021	0.053	2360
	1000	12.5×25	0.018	0.045	2770
	1200	12.5×30	0.016	0.041	3290
	1500	16×25	0.016	0.039	3410
	1800	16×25	0.016	0.043	3460
	2200	16×35	0.015	0.039	3560
	2700	18×35	0.016	0.041	3670
	3300	18×40	0.015	0.039	3790
50(1H)	22	5×11	0.34	1.18	238
	56	6.3×11	0.14	0.50	385
	100	8×11.5	0.074	0.22	724
	120	8×11.5	0.061	0.18	950
	150	10×12.5	0.061	0.18	979
	180	10×12.5	0.046	0.14	1210
	220	10×16	0.042	0.12	1370
	270	10×20	0.030	0.090	1580
	330	10×25	0.028	0.085	1870
	470	12.5×20	0.027	0.068	2050
	680	12.5×30	0.021	0.052	2860
	820	16×20	0.023	0.059	2730
	1000	16×25	0.021	0.056	3010
	2200	18×30	0.019	0.054	3130
	3300	18×30	0.019	0.054	3224
3900	22×40	0.018	0.052	3288	
4700	22×40	0.018	0.052	3419	
63(1J)	15	5×11	0.88	3.5	165
	33	6.3×11	0.35	1.4	265
	56	8×11.5	0.22	0.88	500
	82	10×12.5	0.11	0.44	690
	120	10×16	0.076	0.31	950
	180	10×20	0.056	0.23	1150
	220	10×25	0.046	0.19	1350
	270	12.5×20	0.041	0.13	1500
	390	12.5×25	0.031	0.093	1900
	470	12.5×30	0.028	0.084	2300
	560	16×25	0.023	0.072	2530
	680	16×25	0.025	0.075	2600
	820	16×30	0.021	0.063	2850
	1000	16×35	0.019	0.057	2900
	1200	16×40	0.018	0.054	3300
	1500	18×35	0.018	0.054	3400
	1800	18×40	0.017	0.051	3500
	2200	18×40	0.017	0.050	3640
	2700	18×40	0.017	0.050	3710
	3300	22×35	0.016	0.049	3821
3900	22×40	0.015	0.048	3897	
4700	22×40	0.015	0.048	4058	

**◆ Standard Rating of LBX Series (6.3v-100v)**

WV (Vdc)	Cap ( $\mu$ F)	Case size $\phi$ D×L(mm)	IMP.( $\Omega$ max)100KHz		Ripple current mA/150°C, 100KHz
			20°C	-10°C	
80(1K)	68	10×12.5	0.17	0.66	480
	100	10×16	0.11	0.47	600
	120	10×20	0.084	0.34	800
	150	12.5×20	0.069	0.28	900
	220	16×25	0.062	0.18	1250
	330	16×30	0.047	0.14	1480
	390	16×30	0.042	0.13	1500
	470	18×30	0.038	0.12	1530
	560	18×30	0.032	0.095	1720
	680	18×30	0.032	0.095	1850
	820	18×35	0.029	0.086	2000
	1000	18×35	0.027	0.081	2200
	1200	18×40	0.026	0.077	2700
	1500	18×40	0.026	0.076	2780
	1800	18×45	0.025	0.075	2830
	2200	18×45	0.025	0.075	2850
	2700	22×25	0.023	0.073	2930
3300	22×30	0.023	0.073	2950	
3900	22×40	0.022	0.073	2990	

WV (Vdc)	Cap ( $\mu$ F)	Case size $\phi$ D×L(mm)	IMP.( $\Omega$ max)100KHz		Ripple current mA/150°C, 100KHz
			20°C	-10°C	
100 (2A)	6.8	5×11	1.4	5.6	125
	15	6.3×11	0.57	2.3	205
	27	8×11.5	0.36	1.4	355
	39	10×12.5	0.25	1.0	450
	47	10×12.5	0.17	0.66	480
	56	10×16	0.17	0.66	580
	68	10×16	0.11	0.47	600
	82	10×20	0.084	0.34	750
	100	12.5×20	0.084	0.34	800
	120	12.5×20	0.069	0.28	930
	150	12.5×20	0.062	0.18	1100
	220	16×30	0.047	0.14	1380
	270	16×30	0.042	0.13	1402
	330	18×30	0.038	0.12	1430
	390	18×30	0.032	0.095	1800
	470	18×30	0.032	0.095	1850
	560	18×35	0.030	0.090	1900
680	18×35	0.027	0.081	2200	
820	18×40	0.026	0.077	2700	

**◆ Standard Rating of LBX Series (160v-450v)**

WV (Vdc)	Cap ( $\mu$ F)	Case size $\phi$ D×L(mm)	tan $\delta$	Ripple current(mA/150°C)	
				120Hz	100KHz
160 (2C)	10	10×16	0.20	125	315
	22	10×20	0.20	200	500
	33	10×20	0.20	250	625
	47	10×20	0.20	300	750
	68	12.5×20	0.20	470	1175
	82	12.5×20	0.20	510	1275
	100	12.5×30	0.20	620	1395
	150	16×20	0.20	770	1735
	220	16×25	0.20	1020	2295
330	18×30	0.20	1390	3130	
200 (2D)	10	10×16	0.20	140	350
	22	10×20	0.20	230	575
	33	10×20	0.20	260	650
	47	12.5×20	0.20	390	975
	68	12.5×20	0.20	490	1225
	82	16×20	0.20	550	1375
	100	16×20	0.20	630	1575
	150	16×25	0.20	840	2100
	220	18×30	0.20	1050	2386
330	18×35	0.20	1430	3250	
250 (2E)	10	10×20	0.20	150	375
	22	10×20	0.20	240	600
	33	12.5×20	0.20	320	800
	47	12.5×20	0.20	410	1025
	68	16×20	0.20	520	1300
	82	16×20	0.20	570	1425
	100	16×25	0.20	680	1700
	150	18×30	0.20	860	2150
220	18×30	0.20	1130	2568	

WV (Vdc)	Cap ( $\mu$ F)	Case size $\phi$ D×L(mm)	tan $\delta$	Ripple current(mA/150°C)	
				120Hz	100KHz
350 (2V)	6.8	10×16	0.24	150	375
	10	10×20	0.24	190	475
	22	12.5×20	0.24	260	650
	33	16×20	0.24	360	900
	47	16×20	0.24	430	1075
	68	16×25	0.24	560	1400
	82	18×25	0.24	610	1525
	100	18×25	0.24	700	1750
	120	18×30	0.24	830	2075
	150	18×35	0.24	960	2400
	220	18×40	0.24	1260	3150
400 (2G)	6.8	10×16	0.24	170	425
	10	10×20	0.24	210	525
	15	12.5×20	0.24	230	575
	22	12.5×20	0.24	280	700
	33	16×20	0.24	380	950
	47	16×25	0.24	470	1175
	68	18×25	0.24	585	1465
	82	18×25	0.24	610	1525
	100	18×30	0.24	765	1915
	120	18×35	0.24	865	2165
	150	18×40	0.24	985	2465
450 (2W)	6.8	10×20	0.24	190	475
	10	12.5×20	0.24	230	575
	15	12.5×25	0.24	240	600
	22	16×20	0.24	290	725
	47	16×25	0.24	480	1200
	68	18×30	0.24	630	1575
	82	18×35	0.24	715	1788
	100	18×40	0.24	800	2000

- Taping, Cutting Products & other customized demands are available upon request.
- Please check with us about the specified actual demanding.