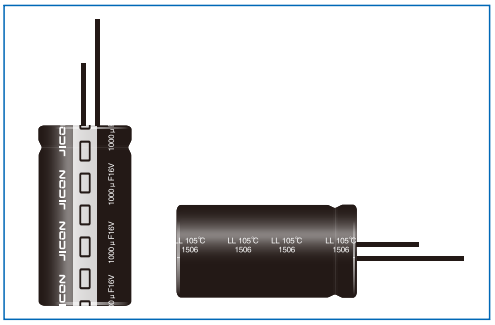
LL 系列 SERIES



- 2000h at 105℃
- Load life of 2000 hours at 105℃
- Low Leakage Current
- Close Tolerance

◆ SPECIFICATION

Items	Characteristics
Operating Temperature Range(℃)	-40～+105℃
Voltage range (V)	6.3～100V
Capacitance Range (μF)	0.1～10000μF
Capacitance Tolerance	±20% (at20℃,120Hz)
leakage current (μA)	After 2minute at 20℃ application of rated voltage, leakage current is not more than0.008CVor 1uA,whichever is greater C:Nominal Capacitance (μF) V :Rated Voltage (V)

Dissipation Factor(Tan δ)

WV(V)	6.3	10	16	25	35	50	63	100
Tan δ (max)	0.21	0.17	0.14	0.12	0.12	0.10	0.08	0.08

(at 20℃,120Hz)

LowTemperature Characteristics

Rated Voltage (V)	6.3	10	16	25	35	50	63	100
Z-25℃/Z+20℃	4	3	2	1.5				
Z-40℃/Z+20℃	8	6	4	3				

(at 120Hz)

Load Life

The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DCvoltage with the rated rippled current is applied for 2000 hours at 105℃

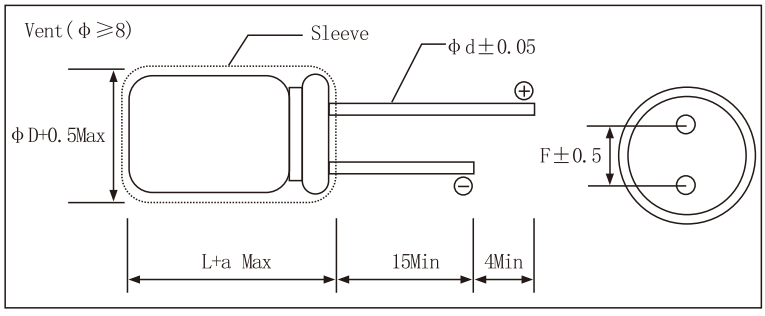
Capacitance change	Within± 15%initial value
D.F. (Tan δ)	Not more than 150% of specified value
leakage current	Not more than specified value

Shelf Life

The following specifications shall be satisfied when the capacitors are restored to 20℃ afterexposing them for 1,000hours at 105℃without voltage applied .Before the measurement ,the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.

Capacitance change	Within± 15%initial value
D.F. (Tan δ)	Not more than 150% of specified value
leakage current	Not more than specified value

◆ DIMENSIONS(mm)



ΦD	5	6.3	8	10	13	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
Φd	0.5	0.5	0.5	0.6	0.6	0.8	0.8
a	1.5	1.5	1.5	2.0	2.0	2.0	2.0

◆ Frequency Coefficient

Frequency / Cap(μF)	50/60Hz	120Hz	1KHz	≥10KHz
~68	0.75	1.00	1.57	2.10
100~68	0.80	1.00	1.34	1.50
1000~10000	0.85	1.00	1.13	1.15

◆ Temperature Coefficient

Temperature(℃)	+70	+85	+105
Coefficient	1.8	1.4	1.0

LL 系 列 SERIES

◆ STANDARD RATINGS

UR (Surge Voltage) Code	Rated Capaci-tance	Max ESR 20℃ 120Hz	Rated Ripple Current 105℃ 120Hz	Size ΦD×L
(V)	(μF)	(Ω)	(mA rms)	(mm)
6.3 (8) 0J	470	0.51	390	10×12.5
	680	0.41	480	10×16
	1000	0.28	650	10×20
	1500	0.19	910	13×25
	2200	0.13	1060	13×25
	3300	0.08	1270	16×25
	4700	0.06	1500	16×31.5
	6800	0.04	1760	18×35.5
	10000	0.03	1900	18×40
10 (13) 1A	47	4.23	110	5×11
	68	2.93	150	6.3×12
	100	1.99	180	6.3×12
	150	1.33	250	8×12
	220	0.90	310	8×12
	330	0.60	400	10×12.5
	470	0.48	530	10×16
	680	0.33	600	10×20
	1000	0.23	810	13×20
	1500	0.15	1020	13×25
	2200	0.10	1200	16×25
	3300	0.07	1420	16×31.5
	4700	0.05	1650	16×35.5
	6800	0.03	1890	18×35.5
16 (20) 1C	10	15.92	55	5×11
	15	10.62	70	5×11
	22	7.24	85	5×11
	33	4.83	100	5×11
	47	3.39	140	6.3×12
	68	2.34	160	6.3×12
	100	1.59	230	8×12
	150	1.06	280	8×12
	220	0.72	370	10×12.5
	330	0.56	420	10×16
	470	0.40	550	10×20
	680	0.27	730	13×20
	1000	0.19	910	13×25
	1500	0.12	1150	16×25
	2200	0.08	1300	16×25
	3300	0.06	1550	16×35.5
	4700	0.04	1820	16×35.5
25 (32) 1E	4.7	22.59	45	5×11
	6.8	15.61	55	5×11
	10	10.62	70	5×11
	15	7.08	85	5×11
	22	4.83	100	5×11
	33	3.22	140	6.3×12
	47	2.26	170	6.3×12
	68	1.56	230	8×12
	100	1.06	280	8×12
	150	0.71	370	10×12.5
	220	0.72	400	10×16

LL 系列 SERIES

◆ STANDARD RATINGS

UR (Surge Voltage) Code	Rated Capaci-tance	Max ESR 20℃ 120Hz	Rated Ripple Current 105℃ 120Hz	Size ΦD×L
(V)	(μF)	(Ω)	(mA rms)	(mm)
25 (32) 1E	330	0.48	490	10×20
	470	0.34	600	13×20
	680	0.23	810	13×25
	1000	0.16	1010	16×25
	1500	0.11	1270	16×31.5
	2200	0.07	1440	16×35.5
	3300	0.05	1720	18×40
35 (44) 1V	15	7.08	85	5×11
	22	4.83	110	6.3×12
	33	3.22	140	6.3×12
	47	2.26	190	8×12
	68	1.56	230	8×12
	100	1.06	300	10×12.5
	150	1.06	400	10×16
	220	0.72	440	10×20
	330	0.48	550	13×20
	470	0.34	680	13×25
	680	0.23	840	16×25
	1000	0.16	1100	16×25
	1500	0.11	1390	16×35.5
	2200	0.07	1580	16×35.5
50 (63) 1H	0.1	1061.57	1.1	5×11
	0.15	707.71	1.6	5×11
	0.22	482.53	2.3	5×11
	0.33	321.69	3.5	5×11
	0.47	225.87	5.0	5×11
	0.68	156.11	7.3	5×11
	1	106.16	10.7	5×11
	1.5	70.77	16	5×11
	2.2	48.25	23	5×11
	3.3	32.17	40	5×11
	4.7	22.59	45	5×11
	6.8	15.61	55	5×11
	10	10.62	70	5×11
	15	7.08	95	6.3×12
50 (63) 1H	22	4.83	110	6.3×12
	33	3.22	165	8×12
	47	2.26	190	8×12
	68	1.56	250	10×12.5
	100	1.33	320	10×16
	150	0.88	420	10×20
	220	0.60	490	13×20
	330	0.40	600	13×20
	470	0.28	760	16×25
	680	0.20	910	16×25
	1000	0.13	1140	16×31.5
	1500	0.09	1480	18×40
63 (79) 1J	6.8	13.66	59	5×11
	10	9.29	75	6.3×12
	15	6.19	100	6.3×12
	22	4.22	115	8×12

LL 系列 SERIES

◆ STANDARD RATINGS

UR (Surge Voltage) Code	Rated Capaci-tance	Max ESR 20℃ 120Hz	Rated Ripple Current 105℃ 120Hz	Size ΦD×L
(V)	(μF)	(Ω)	(mA rms)	(mm)
63 (79) 1J	33	2.81	170	8×12
	47	1.98	200	10×12.5
	68	1.56	270	10×16
	100	1.06	330	10×20
	150	0.71	450	13×20
	220	0.48	550	13×20
	330	0.32	710	13×25
	470	0.23	850	16×25
	680	0.16	1050	16×31.5
	1000	0.11	1330	18×35.5
100 (125) 2A	0.1	928.87	2.1	5×11
	0.15	619.25	3.2	5×11
	0.22	422.22	4.7	5×11
	0.33	281.48	7.0	5×11
	0.47	197.63	10.1	5×11
	0.68	136.60	14.5	5×11
	1	92.89	19	5×11
	1.5	61.92	23	5×11
	2.2	42.22	28	5×11
	3.3	28.15	45	5×11
	4.7	19.76	50	5×11
	6.8	13.66	65	6.3×12
	10	9.29	90	8×12
	15	6.19	110	8×12
	22	4.22	136	10×12.5
	33	3.22	180	10×16
	47	2.26	220	10×20
	68	1.56	290	10×20
	100	1.06	370	13×20
	150	0.71	470	13×25
	220	0.48	580	16×25
	330	0.32	730	16×31.5
	470	0.23	910	16×35.5

Customer products are available on request