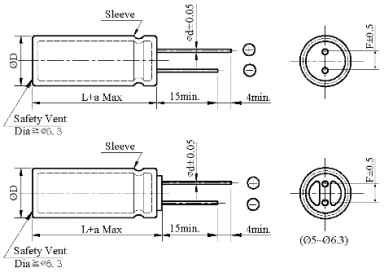
EL Series

- **Suitable for main board**
- **Extremely low impedance, downsize and high ripple current**

◆ SPECIFICATIONS

Item	Performance Characteristics
Category Temperature Range	-40 ~ +105℃
Working Voltage Range	6.3 ~ 50Vdc
Capacitance Range	56 ~ 6,800 μF
Capacitance Tolerance	±20% (at 25℃ and 120Hz)
Dissipation Factor (tanδ) (at 25℃, 120Hz)	Rated Voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50 tanδ(Max): 0.22 / 0.19 / 0.16 / 0.14 / 0.12 / 0.10 When nominal capacitance exceeds 1,000uF, add 0.02 to the value above for each 1,000uF increase.
Leakage Current	I=0.01CV or 3 μA, whichever is greater I : Leakage current (μA) C : Rated capacitance (μF) V : Rated voltage (V) Impress the rated voltage for 2 minutes Impress the rated voltage for 2 minutes
Low Temperature Characteristics Impedance Ratio(MAX)	Rated voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50 Z(-40℃)/Z(+20℃): 8 / 6 / 6 / 5 / 4 / 3 (at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 25℃ after subjected to DC voltage with the rated ripple current is applied for 2,000 hours at 105℃ Capacitance change: ≦ ±25% of the initial value Dissipation factor(tanδ): ≦ 200% of the specified value Leakage current: ≦ specified value
Shelf Life	The following requirements shall be satisfied when the capacitor are restored to 25℃ after exposing them for 500 hours at 105℃ without voltage applied. Capacitance change: ≦ ±25% of the initial value Dissipation factor(tanδ): ≦ 200% of the specified value Leakage current: ≦ 200% of the specified value
Others	Conforms to JIS-C-5101-4 (1998)

◆ DIMENSIONS (mm)



ΦD	5	6.3	8	10	12.5	16	18
ΦD	ΦD + 0.5 Max						
Φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
a	L + 1.5 Max				≦ 35 L+1.5Max ≧ 40 L+2.0 Max	L + 1.5 Max	

◆ PART NUMBER SYSTEM(Example : 10V 5600μF)

E	L	1	A	5	6	2	M	N	N	1	2	3	5						

- Special Request
- Size code(1235 : 12.5×35)
- Lead length code
- Lead forming Type code
- Capacitance tolerance code(M:±20%)
- Capacitance code (5600μF)
- Voltage code(10V)
- Series code(EL)

EL Series

◆ **STANDARD RATINGS**

WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	IMPD. (Ωmax/ 100kHz)		Rated Ripple current (mA rms/ 105℃, 100kHz)	Part Number
			20℃	-10℃		
6.3 (0J)	100	5×11	1.78	2.69	175	EL0J101MNN0511
	220	6.3×11	0.88	1.76	280	EL0J221MNN6311
	330	6.3×11	0.45	1.32	405	EL0J331MNN6311
	470	8×11.5	0.11	0.38	560	EL0J471MNN08B5
	560	8×11.5	0.072	0.22	760	EL0J561MNN08B5
	680	8×11.5	0.068	0.21	800	EL0J681MNN08B5
	820	8×15	0.056	0.17	995	EL0J821MNN0815
	1000	8×15	0.053	0.16	1030	EL0J102MNN0815
	1200	8×20	0.041	0.13	1250	EL0J122MNN0820
	1500	10×20	0.023	0.069	1820	EL0J152MNN1020
	2200	10×25	0.022	0.066	2150	EL0J222MNN1025
	2700	10×30	0.022	0.066	2200	EL0J272MNN1030
	3300	12.5×20	0.021	0.053	2360	EL0J332MNN1220
	3900	12.5×25	0.018	0.045	2770	EL0J392MNN1225
	4700	12.5×30	0.016	0.041	3290	EL0J472MNN1230
	5600	12.5×35	0.015	0.039	3400	EL0J562MNN1235
	6800	12.5×40	0.016	0.043	3460	EL0J682MNN1240
10 (1A)	100	5×11	1.48	2.48	250	EL1A101MNN0511
	220	6.3×11	0.58	1.66	405	EL1A221MNN6311
	330	8×11.5	0.38	1.28	500	EL1A331MNN08B5
	470	8×11.5	0.072	0.22	760	EL1A471MNN08B5
	560	8×15	0.069	0.2	805	EL1A561MNN0815
	680	8×15	0.056	0.17	995	EL1A681MNN0815
	820	8×20	0.052	0.16	1050	EL1A821MNN0820
	1000	8×20	0.041	0.13	1250	EL1A102MNN0820
	1200	10×20	0.023	0.069	1820	EL1A122MNN1020
	1500	10×25	0.022	0.066	2150	EL1A152MNN1025
	2200	12.5×20	0.021	0.053	2360	EL1A222MNN1220
	2700	12.5×20	0.021	0.053	2395	EL1A272MNN1220
	3300	12.5×25	0.018	0.045	2770	EL1A332MNN1225
	3900	12.5×30	0.016	0.041	3290	EL1A392MNN1230
	4700	12.5×35	0.015	0.039	3400	EL1A472MNN1235
	5600	12.5×40	0.016	0.043	3460	EL1A562MNN1240
	6800	16×31.5	0.017	0.04	3500	EL1A682MNN16N3
16 (1C)	100	6.3×11	1.28	2.16	290	EL1C101MNN6311
	220	8×11.5	0.46	1.56	410	EL1C221MNN08B5
	330	8×11.5	0.28	1.08	760	EL1C331MNN08B5
	470	8×15	0.056	0.17	995	EL1C471MNN0815
	560	8×20	0.052	0.16	1050	EL1C561MNN0820
	680	10×16	0.038	0.12	1430	EL1C681MNN1016
	820	10×20	0.035	0.11	1520	EL1C821MNN1020
	1000	10×20	0.023	0.069	1820	EL1C102MNN1020
	1200	10×25	0.022	0.066	2150	EL1C122MNN1025
	1500	12.5×20	0.021	0.053	2360	EL1C152MNN1220
	2200	12.5×25	0.018	0.045	2770	EL1C222MNN1225
	2700	12.5×30	0.016	0.041	3290	EL1C272MNN1230
16 (1C)	3300	12.5×35	0.015	0.039	3400	EL1C332MNN1235
	3900	16×25	0.016	0.043	3460	EL1C392MNN1625
	4700	16×31.5	0.016	0.043	3500	EL1C472MNN16N3
	5600	16×35.5	0.015	0.042	3540	EL1C562MNN16P1
	6800	16×40	0.015	0.04	3585	EL1C682MNN1640
25 (1E)	56	6.3×11	0.88	0.9	270	EL1E560MNN6311
	68	6.3×11	0.66	0.85	290	EL1E680MNN6311
	100	6.3×11	0.43	0.5	405	EL1E101MNN6311
	150	8×11.5	0.12	0.4	415	EL1E151MNN08B5
	220	8×11.5	0.072	0.22	760	EL1E221MNN08B5
	330	8×15	0.056	0.17	995	EL1E331MNN0815
	470	10×16	0.038	0.12	1430	EL1E471MNN1016
	560	10×20	0.035	0.11	1505	EL1E561MNN1020
	680	10×20	0.023	0.069	1820	EL1E681MNN1020
	820	10×25	0.022	0.066	2150	EL1E821MNN1025
	1000	12.5×20	0.021	0.053	2360	EL1E102MNN1220
	1200	12.5×25	0.021	0.053	2400	EL1E122MNN1225
	1500	12.5×25	0.018	0.045	2770	EL1E152MNN1225
	2200	12.5×35	0.015	0.039	3400	EL1E222MNN1235
	2700	16×25	0.016	0.043	3460	EL1E272MNN1625
35 (1V)	56	6.3×11	0.76	1.24	405	EL1V560MNN6311
	68	8×11.5	0.56	0.76	430	EL1V680MNN08B5
	100	8×11.5	0.38	0.56	450	EL1V101MNN08B5
	150	8×11.5	0.072	0.22	760	EL1V151MNN08B5
	220	8×15	0.056	0.17	995	EL1V221MNN0815
	330	10×16	0.038	0.12	1430	EL1V331MNN1016
	470	10×20	0.023	0.069	1820	EL1V471MNN1020
	560	10×25	0.022	0.066	2150	EL1V561MNN1025
	680	12.5×20	0.021	0.053	2360	EL1V681MNN1220
	820	12.5×20	0.02	0.052	2410	EL1V821MNN1220
	1000	12.5×25	0.018	0.045	2770	EL1V102MNN1225
	1200	12.5×30	0.016	0.041	3290	EL1V122MNN1230
	1500	12.5×35	0.015	0.039	3400	EL1V152MNN1235
	2200	16×31.5	0.015	0.039	3500	EL1V222MNN16N3
50 (1H)	56	8×11.5	0.64	1.4	385	EL1H560MNN08B5
	68	8×11.5	0.48	0.9	405	EL1H680MNN08B5
	100	8×11.5	0.22	0.63	724	EL1H101MNN08B5
	150	8×15	0.061	0.18	979	EL1H151MNN0815
	220	10×16	0.042	0.12	1370	EL1H221MNN1016
	330	10×25	0.028	0.085	1870	EL1H331MNN1025
	470	12.5×20	0.027	0.068	2050	EL1H471MNN1220
	560	12.5×25	0.023	0.059	2410	EL1H561MNN1225
	680	12.5×30	0.021	0.052	2860	EL1H681MNN1230
	820	12.5×35	0.019	0.051	2960	EL1H821MNN1235
	1000	16×25	0.021	0.056	3010	EL1H102MNN1625

◆ **RIPPLE CURRENT MULTIPLIERS**

Frequency Multipliers

Vdc	Frequency (Hz)				
	50/60	120	1K	10K	100K
6.3 ~ 16	0.60	0.75	0.90	0.98	1.00
25 ~ 50	0.50	0.62	0.85	0.95	1.00