

ALUMINUM ELECTROLYTIC CAPACITORS



EL Series

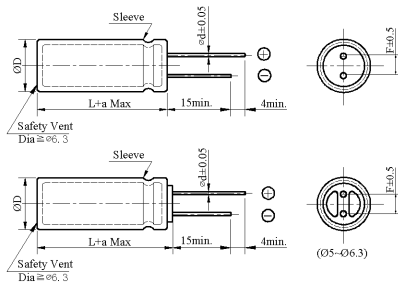
- Suitable for main board
- Extremely low impedance, downsize and high ripple current



SPECIFICATIONS

Item	Performance Characteristics														
Category Temperature Range	-40 ~ +105°C														
Working Voltage Range	6.3 ~ 50Vdc														
Capacitance Range	56 ~ 6,800 µF														
Capacitance Tolerance	±20% (at 25°C and 120Hz)														
Dissipation Factor (tanδ) (at 25°C, 120Hz)	<table border="1"> <tr> <td>Rated Voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>tanδ(Max)</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> </tr> </table>	Rated Voltage (V)	6.3	10	16	25	35	50	tanδ(Max)	0.22	0.19	0.16	0.14	0.12	0.10
	Rated Voltage (V)	6.3	10	16	25	35	50								
tanδ(Max)	0.22	0.19	0.16	0.14	0.12	0.10									
The above values should be increased by 0.02 for every additional 1000µF															
Leakage Current	I=0.01CV or 3µA whichever is greater I : Leakage current (µA) C : Rated capacitance (µF) V : Rated voltage (V) The rated voltage is impressed for 2 minutes.														
Low Temperature Characteristics Impedance Ratio(MAX)	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>Z(-40°C)/Z(+20°C)</td> <td>8</td> <td>6</td> <td>6</td> <td>5</td> <td>4</td> <td>3</td> </tr> </table>	Rated voltage (V)	6.3	10	16	25	35	50	Z(-40°C)/Z(+20°C)	8	6	6	5	4	3
	Rated voltage (V)	6.3	10	16	25	35	50								
Z(-40°C)/Z(+20°C)	8	6	6	5	4	3									
(at 120Hz)															
Endurance	The following specifications shall be satisfied when the capacitors are restored to 25°C after subjected to DC voltage with the rated ripple current is applied for 2,000 hours at 105°C														
	<table border="1"> <tr> <td>Capacitance change</td> <td>≒ ±25% of the initial value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≒ 200% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≒ specified value</td> </tr> </table>	Capacitance change	≒ ±25% of the initial value	Dissipation factor(tanδ)	≒ 200% of the specified value	Leakage current	≒ specified value								
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Leakage current	≒ specified value														
Shelf Life	The following requirements shall be satisfied when the capacitor are restored to 25°C after exposing them for 500 hours at 105°C without voltage applied.														
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Leakage current	≒ 200% of the specified value														
Others	Conforms to JIS-C-5101-4 (1998), characteristic W														

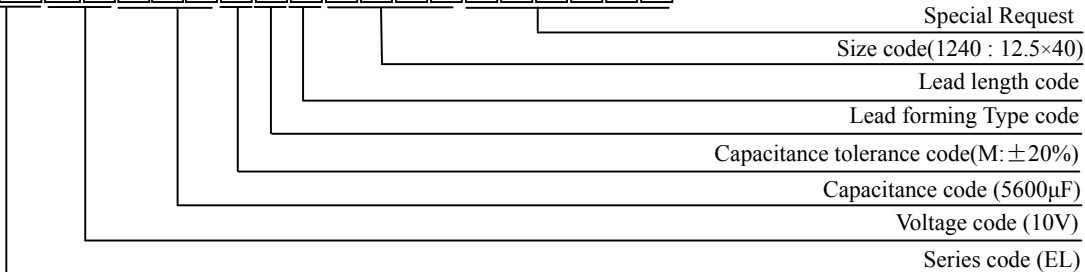
DIMENSIONS (mm)



ΦD	5	6.3	8	10	12.5 L < 35	12.5 L ≥ 35	16	18
ΦD	ΦD + 0.5 Max							
Φd	0.5	0.5	0.6	0.6	0.6	0.8	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 + 1.5 Max ≒ 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 4 0





EL Series

◆ **Case size & Permissible rated ripple current**

Nominal Capacitance (uF)	6.3V				10V				16V			
	Case Size ΦD×L (mm)	Impedance (Ωmax/100kHz)		Max. Rated ripple current @105°C 100kHz (mA rms)	Case Size ΦD×L (mm)	Impedance (Ωmax/100kHz)		Max. Rated ripple current @105°C 100kHz (mA rms)	Case Size ΦD×L (mm)	Impedance (Ωmax/100kHz)		Max. Rated ripple current @105°C 100kHz (mA rms)
		20°C	-10°C			20°C	-10°C			20°C	-10°C	
100	5×11	1.780	2.690	175	5×11	1.480	2.480	250	6.3×11	1.280	2.160	290
220	6.3×11	0.880	1.760	280	6.3×11	0.580	1.660	405	8×11.5	0.460	1.560	410
330	6.3×11	0.450	1.320	405	8×11.5	0.380	1.280	500	8×11.5	0.280	1.080	760
470	8×11.5	0.110	0.380	560	8×11.5	0.072	0.220	760	8×15	0.056	0.170	995
560	8×11.5	0.072	0.220	760	8×15	0.069	0.200	805	8×20	0.052	0.160	1050
680	8×11.5	0.068	0.210	800	8×15	0.056	0.170	995	10×16	0.038	0.120	1430
820	8×15	0.056	0.170	995	8×20	0.052	0.160	1050	10×20	0.035	0.110	1520
1000	8×15	0.053	0.160	1030	8×20	0.041	0.130	1250	10×20	0.023	0.069	1820
1200	8×20	0.041	0.130	1250	10×20	0.023	0.069	1820	10×25	0.022	0.066	2150
1500	10×20	0.023	0.069	1820	10×25	0.022	0.066	2150	12.5×20	0.021	0.053	2360
2200	10×25	0.022	0.066	2150	12.5×20	0.021	0.053	2360	12.5×25	0.018	0.045	2770
2700	10×30	0.022	0.066	2200	12.5×20	0.021	0.053	2395	12.5×30	0.016	0.041	3290
3300	12.5×20	0.021	0.053	2360	12.5×25	0.018	0.045	2770	12.5×35	0.015	0.039	3400
3900	12.5×25	0.018	0.045	2770	12.5×30	0.016	0.041	3290	16×25	0.016	0.043	3460
4700	12.5×30	0.016	0.041	3290	12.5×35	0.015	0.039	3400	16×31.5	0.016	0.043	3500
5600	12.5×35	0.015	0.039	3400	12.5×40	0.016	0.043	3460	16×35.5	0.015	0.042	3540
6800	12.5×40	0.016	0.043	3460	16×31.5	0.017	0.040	3500	16×40	0.015	0.040	3585

Nominal Capacitance (uF)	25V				35V				50V			
	Case Size ΦD×L (mm)	Impedance (Ωmax/100kHz)		Max. Rated ripple current @105°C 100kHz (mA rms)	Case Size ΦD×L (mm)	Impedance (Ωmax/100kHz)		Max. Rated ripple current @105°C 100kHz (mA rms)	Case Size ΦD×L (mm)	Impedance (Ωmax/100kHz)		Max. Rated ripple current @105°C 100kHz (mA rms)
		20°C	-10°C			20°C	-10°C			20°C	-10°C	
56	6.3×11	0.880	0.900	270	6.3×11	0.760	1.240	405	8×11.5	0.640	1.400	385
68	6.3×11	0.660	0.850	290	8×11.5	0.560	0.760	430	8×11.5	0.480	0.900	405
100	6.3×11	0.430	0.500	405	8×11.5	0.380	0.560	450	8×11.5	0.220	0.630	724
150	8×11.5	0.120	0.400	415	8×11.5	0.072	0.220	760	8×15	0.061	0.180	979
220	8×11.5	0.072	0.220	760	8×15	0.056	0.170	995	10×16	0.042	0.120	1370
330	8×15	0.056	0.170	995	10×16	0.038	0.120	1430	10×25	0.028	0.085	1870
470	10×16	0.038	0.120	1430	10×20	0.023	0.069	1820	12.5×20	0.027	0.068	2050
560	10×20	0.035	0.110	1505	10×25	0.022	0.066	2150	12.5×25	0.023	0.059	2410
680	10×20	0.023	0.069	1820	12.5×20	0.021	0.053	2360	12.5×30	0.021	0.052	2860
820	10×25	0.022	0.066	2150	12.5×20	0.020	0.052	2410	12.5×35	0.019	0.051	2960
1000	12.5×20	0.021	0.053	2360	12.5×25	0.018	0.045	2770	16×25	0.021	0.056	3010
1200	12.5×25	0.021	0.053	2400	12.5×30	0.016	0.041	3290				
1500	12.5×25	0.018	0.045	2770	12.5×35	0.015	0.039	3400				
2200	12.5×35	0.015	0.039	3400	16×31.5	0.015	0.039	3500				
2700	16×25	0.016	0.043	3460								

◆ **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