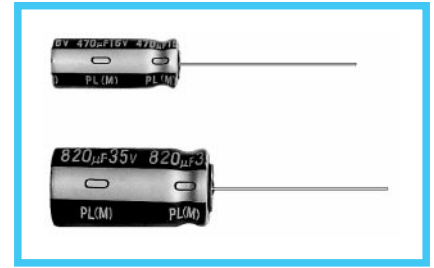


**PL** series Extremely Low Impedance, High Reliability



- Same case size as PF series, but extremely low impedance as little as 1/2 of PF series.
- High reliability withstanding 5000 hours load life at +105°C (3000/2000 hours for smaller case size as specified below).
- Capacitance ranges available based on the numerical values in E12 series under JIS.

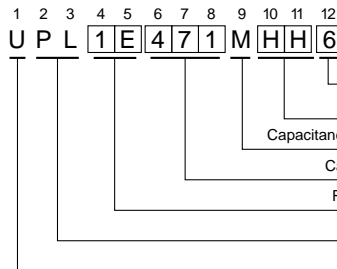
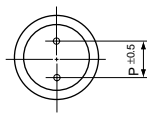
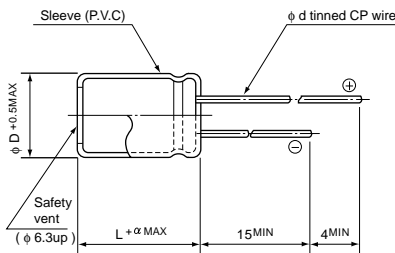


## Specifications

Item	Performance Characteristics																
Operating Temperature Range	-55 ~ +105°C																
Voltage Range	6.3 ~ 63V																
Capacitance Range	0.47 ~ 15000µF																
Capacitance Tolerance	±20% at 120Hz, 20°C																
Leakage Current	After 1 minute's application of rated voltage, leakage current is not more than 0.03CV or 4µA, whichever is greater.																
tan δ	For capacitance of more than 1000µF, add 0.02 for every increase of 1000µF. Measurement frequency : 120Hz, Temperature : 20°C																
	<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> <td>63</td> </tr> <tr> <td>tan δ (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> <td>0.08</td> </tr> </table>	Rated voltage(V)	6.3	10	16	25	35	50	63	tan δ (MAX.)	0.22	0.19	0.16	0.14	0.12	0.10	0.08
Rated voltage(V)	6.3	10	16	25	35	50	63										
tan δ (MAX.)	0.22	0.19	0.16	0.14	0.12	0.10	0.08										
Stability at Low Temperature	Measurement frequency : 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> <td>63</td> </tr> <tr> <td>Impedance ratio ZT/Z20(MAX.)</td> <td>Z-55°C/Z+20°C</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>2</td> <td>2</td> </tr> </table>	Rated voltage(V)	6.3	10	16	25	35	50	63	Impedance ratio ZT/Z20(MAX.)	Z-55°C/Z+20°C	4	4	3	3	3	2
Rated voltage(V)	6.3	10	16	25	35	50	63										
Impedance ratio ZT/Z20(MAX.)	Z-55°C/Z+20°C	4	4	3	3	3	2	2									
Load Life	After an application of D.C. bias voltage plus the rated ripple current for 5000 hours (2000 hours for D = 5 and 6.3, 3000 hours for D = 8) at 105°C the peak voltage shall not exceed the rated D.C. voltage, the capacitors meet the characteristic requirements shown on the right.																
	<table border="1"> <tr> <td>Capacitance change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>tanδ</td> <td>200% or less of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Initial specified value or less</td> </tr> </table>	Capacitance change	Within ±20% of initial value	tanδ	200% or less of initial specified value	Leakage current	Initial specified value or less										
	Capacitance change	Within ±20% of initial value															
tanδ	200% or less of initial specified value																
Leakage current	Initial specified value or less																
Shelf Life	After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for load life characteristics listed above. The value of tanδ is, however, 150% or less of initial specified value.																
Marking	Printed with white color letter on dark brown sleeve.																
Applicable Standards	JIS C 5141 and JIS C 5102.																

## Radial Lead Type

Type numbering system (Example : 25V 470µF φ12.5 × 15)



Case size code	
Type	Code
Small Dia	—
Low Profile	6

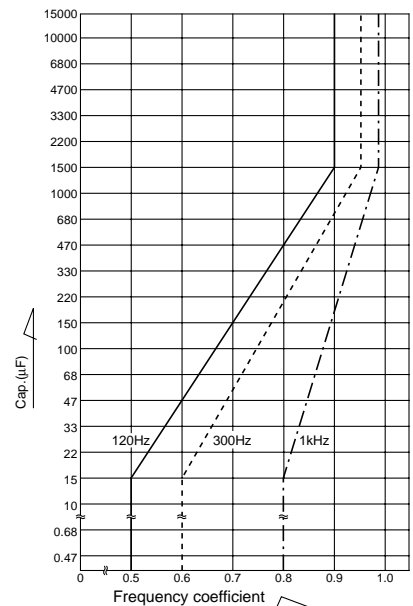
Configuration	
φ D	Code
5	DH
6.3	EH
8*10	PH
12.5~18	HH

α	(L < 20)	1.5
	(L ≥ 20)	2.0

φ D	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φ d	0.5	0.5	0.6	0.6	0.6*	0.8	0.8

\* In case L > 25 for φ 12.5 (D) case sizes, lead diameter φ 0.8 (d) will be applied.

- Frequency coefficient of allowable ripple current (10kHz ~ 200kHz = 1)



Please refer to page 17, 18, 19 about the formed or taped product spec.  
Please refer to page 3 for the minimum order quantity.

Dimension table in next pages.

## ■ Dimensions

D×L(mm)

Cap.(μF)	V(Code) Size code	6.3 (0J)		10 (1A)		16 (1C)		25 (1E)		35 (1V)		50 (1H)		63 (1J)	
		—	6	—	6	—	6	—	6	—	6	—	6	—	6
0.47	R47												5×11		
0.68	R68												5×11		
1	010												5×11		
1.5	1R5												5×11		
2.2	2R2												5×11		
3.3	3R3												5×11		
4.7	4R7												5×11		
6.8	6R8												5×11		
10	100												5×11		5×11
12	120												5×11		5×11
15	150												5×11		6.3×11
18	180												5×11		6.3×11
22	220										5×11		6.3×11		6.3×11
27	270										5×11		6.3×11		6.3×11
33	330								5×11		6.3×11		6.3×11		6.3×15
39	390								5×11		6.3×11		6.3×11		6.3×15
47	470						5×11		6.3×11		6.3×11		6.3×15		8×11.5
56	560						5×11		6.3×11		6.3×11		6.3×15		8×15
68	680				5×11		6.3×11		6.3×11		6.3×15		8×11.5		8×15
82	820				5×11		6.3×11		6.3×11		6.3×15		8×15	10×12.5	8×20
100	101	5×11			6.3×11		6.3×11		6.3×15		8×11.5		8×20	10×15	10×20
120	121	5×11			6.3×11		6.3×11		6.3×15		8×15	10×12.5	8×20	10×15	10×20
150	151	6.3×11			6.3×11		6.3×15		8×11.5		8×15	10×12.5	10×20	12.5×15	10×25
180	181	6.3×11			6.3×11		6.3×15		8×15	10×12.5	8×20	10×15	10×20	12.5×15	10×31.5
220	221	6.3×11			6.3×15		8×11.5		8×15	10×12.5	8×20	10×15	10×25	12.5×15	12.5×20
270	271	6.3×15			6.3×15		8×15	10×12.5	8×20	10×15	10×20	12.5×15	10×31.5	16×15	12.5×25
330	331	6.3×15			8×11.5		8×15	10×12.5	8×20	10×15	10×20	12.5×15	10×31.5	16×15	12.5×25
390	391	8×11.5			8×15	10×12.5	8×20	10×15	10×20	12.5×15	10×25	12.5×15	12.5×25	16×15	12.5×31.5
470	471	8×15	10×12.5		8×15	10×12.5	8×20	10×15	10×20	12.5×15	10×31.5	16×15	12.5×25	18×15	12.5×35.5
560	561	8×15	10×12.5		8×20	10×15	10×20	12.5×15	10×25	12.5×15	12.5×20	16×15	12.5×31.5	16×20	12.5×40
680	681	8×20	10×15		8×20	10×15	10×20	12.5×15	10×31.5	16×15	12.5×25	18×15	12.5×35.5	16×20	16×31.5
820	821	8×20	10×15		10×20	12.5×15	10×25	12.5×15	12.5×20	16×15	12.5×25	18×15	12.5×40	18×20	16×35.5
1000	102	10×20	12.5×15		10×20	12.5×15	10×31.5	16×15	12.5×25	18×15	12.5×31.5	16×20	16×31.5	18×25	16×40
1200	122	10×20	12.5×15		10×25	12.5×15	12.5×20	16×15	12.5×25	18×15	12.5×35.5	16×25	16×35.5	18×31.5	18×40
1500	152	10×25	12.5×15		10×31.5	16×15	12.5×25	18×15	12.5×31.5	16×20	12.5×40	18×20	16×40	18×31.5	
1800	182	10×31.5	16×15		12.5×20	16×15	12.5×31.5	16×20	12.5×35.5	16×25	16×31.5	18×25	18×35.5		
2200	222	10×31.5	16×15		12.5×25	18×15	12.5×31.5	16×20	12.5×40	18×20	16×35.5	18×31.5	18×40		
2700	272	12.5×25	18×15		12.5×31.5	16×20	12.5×35.5	16×25	16×31.5	18×25	16×40	18×35.5			
3300	332	12.5×25	18×15		12.5×35.5	16×20	12.5×40	18×20	16×35.5	18×31.5	18×40				
3900	392	12.5×31.5	16×20		12.5×40	18×20	16×31.5	18×25	16×40	18×35.5					
4700	472	12.5×35.5	18×20		16×31.5	18×25	16×35.5	18×31.5	18×40						
5600	562	12.5×40	18×20		16×35.5	18×25	16×40	18×35.5							
6800	682	16×31.5	18×25		16×35.5	18×31.5	18×35.5								
8200	822	16×35.5	18×31.5		16×40	18×35.5	18×40								
10000	103	16×40	18×31.5		18×40										
12000	123	18×35.5													
15000	153	18×40													

※ In case of low profile type, ⑥ will be put at 12th digit of type numbering system.

## Standard ratings

V(Code) Size code		6.3 (0J)									
		—					6				
		Item Case size φD × L (mm)	Impedance(Ω MAX)		Allowable ripple(mA rms)		Item Case size φD × L (mm)	Impedance(Ω MAX)		Allowable ripple(mA rms)	
20°C/100kHz	—10°C/100kHz		105°C/100kHz ~ 200kHz	105°C/120Hz	20°C/100kHz	—10°C/100kHz		105°C/100kHz ~ 200kHz	105°C/120Hz		
100	101	5 × 11	0.85	1.70	150	99					
120	121	5 × 11	0.65	1.30	175	115					
150	151	6.3 × 11	0.49	0.98	225	155					
180	181	6.3 × 11	0.39	0.78	250	175					
220	221	6.3 × 11	0.30	0.60	285	205					
270	271	6.3 × 15	0.24	0.48	370	275					
330	331	6.3 × 15	0.20	0.40	405	310					
390	391	8 × 11.5	0.17	0.34	445	345					
470	471	8 × 15	0.14	0.28	550	435	10 × 12.5	0.14	0.28	575	455
560	561	8 × 15	0.12	0.24	595	480	10 × 12.5	0.13	0.26	600	485
680	681	8 × 20	0.10	0.20	730	605	10 × 15	0.11	0.22	700	580
820	821	8 × 20	0.085	0.17	795	670	10 × 15	0.095	0.19	750	635
1000	102	10 × 20	0.075	0.15	950	820	12.5 × 15	0.085	0.17	890	765
1200	122	10 × 20	0.065	0.13	1020	895	12.5 × 15	0.075	0.15	950	835
1500	152	10 × 25	0.055	0.11	1220	1090	12.5 × 15	0.065	0.13	1020	915
1800	182	10 × 31.5	0.050	0.10	1370	1230	16 × 15	0.055	0.11	1270	1140
2200	222	10 × 31.5	0.043	0.086	1470	1320	16 × 15	0.049	0.098	1340	1200
2700	272	12.5 × 25	0.038	0.076	1590	1430	18 × 15	0.044	0.088	1500	1350
3300	332	12.5 × 25	0.034	0.068	1710	1530	18 × 15	0.039	0.078	1600	1440
3900	392	12.5 × 31.5	0.031	0.062	1910	1710	16 × 20	0.036	0.072	1720	1540
4700	472	12.5 × 35.5	0.028	0.056	2100	1890	18 × 20	0.032	0.064	1920	1720
5600	562	12.5 × 40	0.026	0.052	2270	2040	18 × 20	0.030	0.060	1980	1780
6800	682	16 × 31.5	0.024	0.048	2370	2130	18 × 25	0.027	0.054	2210	1980
8200	822	16 × 35.5	0.022	0.044	2550	2290	18 × 31.5	0.025	0.050	2390	2150
10000	103	16 × 40	0.020	0.040	2750	2470	18 × 31.5	0.023	0.046	2490	2240
12000	123	18 × 35.5	0.019	0.038	2820	2530					
15000	153	18 × 40	0.018	0.036	2960	2660					

V(Code) Size code		10 (1A)									
		—					6				
		Item Case size φD × L (mm)	Impedance(Ω MAX)		Allowable ripple(mA rms)		Item Case size φD × L (mm)	Impedance(Ω MAX)		Allowable ripple(mA rms)	
20°C/100kHz	—10°C/100kHz		105°C/100kHz ~ 200kHz	105°C/120Hz	20°C/100kHz	—10°C/100kHz		105°C/100kHz ~ 200kHz	105°C/120Hz		
68	680	5 × 11	0.80	1.60	155	97					
82	820	5 × 11	0.65	1.30	175	110					
100	101	6.3 × 11	0.55	1.10	210	135					
120	121	6.3 × 11	0.44	0.88	235	160					
150	151	6.3 × 11	0.35	0.70	265	185					
180	181	6.3 × 11	0.29	0.58	290	205					
220	221	6.3 × 15	0.24	0.48	370	270					
270	271	6.3 × 15	0.20	0.40	405	300					
330	331	8 × 11.5	0.16	0.32	460	350					
390	391	8 × 15	0.14	0.28	550	430	10 × 12.5	0.15	0.30	555	430
470	471	8 × 15	0.12	0.24	595	475	10 × 12.5	0.13	0.26	600	475
560	561	8 × 20	0.10	0.20	730	590	10 × 15	0.11	0.22	700	565
680	681	8 × 20	0.085	0.17	795	660	10 × 15	0.090	0.18	770	635
820	821	10 × 20	0.070	0.14	985	835	12.5 × 15	0.080	0.16	920	780
1000	102	10 × 20	0.060	0.12	1060	915	12.5 × 15	0.065	0.13	1040	895
1200	122	10 × 25	0.050	0.10	1280	1120	12.5 × 15	0.060	0.12	1060	930
1500	152	10 × 31.5	0.045	0.090	1440	1290	16 × 15	0.050	0.10	1330	1190
1800	182	12.5 × 20	0.039	0.078	1470	1320	16 × 15	0.044	0.088	1420	1270
2200	222	12.5 × 25	0.034	0.068	1710	1530	18 × 15	0.039	0.078	1600	1440
2700	272	12.5 × 31.5	0.030	0.060	1940	1740	16 × 20	0.035	0.070	1740	1560
3300	332	12.5 × 35.5	0.026	0.052	2180	1960	16 × 20	0.031	0.062	1850	1660
3900	392	12.5 × 40	0.024	0.048	2360	2120	18 × 20	0.028	0.056	2050	1840
4700	472	16 × 31.5	0.023	0.046	2420	2170	18 × 25	0.026	0.052	2250	2020
5600	562	16 × 35.5	0.021	0.042	2610	2340	18 × 25	0.024	0.048	2340	2100
6800	682	16 × 35.5	0.020	0.040	2680	2410	18 × 31.5	0.022	0.044	2540	2280
8200	822	16 × 40	0.019	0.038	2820	2530	18 × 35.5	0.021	0.042	2690	2420
10000	103	18 × 40	0.017	0.034	3040	2730					

※ In case of low profile type, [6] will be put at 12th digit of type numbering system.

## Standard ratings

Cap. (μF)		V(Code) Size Code Item Code		16 (1C)									
				—				6					
				Case size φD × L (mm)	Impedance(Ω MAX)		Allowable ripple(mA rms)		Case size φD × L (mm)	Impedance(Ω MAX)		Allowable ripple(mA rms)	
20°C/100kHz	—10°C/100kHz	105°C/10kHz ~ 200kHz	105°C/120Hz		20°C/100kHz	—10°C/100kHz	105°C/10kHz ~ 200kHz	105°C/120Hz					
47	470	5 × 11	0.80	1.60	155	92							
56	560	5 × 11	0.65	1.30	175	105							
68	680	6.3 × 11	0.50	1.00	220	135							
82	820	6.3 × 11	0.42	0.84	240	155							
100	101	6.3 × 11	0.35	0.70	265	175							
120	121	6.3 × 11	0.29	0.58	290	195							
150	151	6.3 × 15	0.23	0.46	375	260							
180	181	6.3 × 15	0.20	0.40	405	285							
220	221	8 × 11.5	0.16	0.32	460	335							
270	271	8 × 15	0.14	0.28	550	410	10 × 12.5	0.14	0.28	575	430		
330	331	8 × 15	0.12	0.24	595	455	10 × 12.5	0.12	0.24	625	480		
390	391	8 × 20	0.10	0.20	730	570	10 × 15	0.10	0.20	730	570		
470	471	8 × 20	0.090	0.18	770	615	10 × 15	0.090	0.18	770	615		
560	561	10 × 20	0.075	0.15	950	770	12.5 × 15	0.080	0.16	920	745		
680	681	10 × 20	0.065	0.13	1020	845	12.5 × 15	0.070	0.14	985	815		
820	821	10 × 25	0.055	0.11	1220	1030	12.5 × 15	0.060	0.12	1060	895		
1000	102	10 × 31.5	0.047	0.094	1410	1210	16 × 15	0.055	0.11	1270	1090		
1200	122	12.5 × 20	0.041	0.082	1430	1250	16 × 15	0.046	0.092	1390	1220		
1500	152	12.5 × 25	0.036	0.072	1660	1490	18 × 15	0.041	0.082	1560	1400		
1800	182	12.5 × 31.5	0.032	0.064	1880	1690	16 × 20	0.037	0.074	1700	1530		
2200	222	12.5 × 31.5	0.028	0.056	2010	1800	16 × 20	0.033	0.066	1800	1620		
2700	272	12.5 × 35.5	0.025	0.050	2220	1990	16 × 25	0.030	0.060	2010	1800		
3300	332	12.5 × 40	0.023	0.046	2410	2160	18 × 20	0.027	0.054	2090	1880		
3900	392	16 × 31.5	0.022	0.044	2470	2220	18 × 25	0.025	0.050	2290	2060		
4700	472	16 × 35.5	0.020	0.040	2680	2410	18 × 31.5	0.023	0.046	2490	2240		
5600	562	16 × 40	0.019	0.038	2820	2530	18 × 35.5	0.022	0.044	2620	2350		
6800	682	18 × 35.5	0.018	0.036	2900	2610							
8200	822	18 × 40	0.017	0.034	3040	2730							

Cap. (μF)		V(Code) Size Code Item Code		25 (1E)									
				—				6					
				Case size φD × L (mm)	Impedance(Ω MAX)		Allowable ripple(mA rms)		Case size φD × L (mm)	Impedance(Ω MAX)		Allowable ripple(mA rms)	
20°C/100kHz	—10°C/100kHz	105°C/10kHz ~ 200kHz	105°C/120Hz		20°C/100kHz	—10°C/100kHz	105°C/10kHz ~ 200kHz	105°C/120Hz					
33	330	5 × 11	0.80	1.60	155	88							
39	390	5 × 11	0.65	1.30	175	100							
47	470	6.3 × 11	0.55	1.10	210	125							
56	560	6.3 × 11	0.44	0.88	235	140							
68	680	6.3 × 11	0.36	0.72	260	160							
82	820	6.3 × 11	0.30	0.60	285	180							
100	101	6.3 × 15	0.24	0.48	370	245							
120	121	6.3 × 15	0.20	0.40	405	275							
150	151	8 × 11.5	0.16	0.32	460	320							
180	181	8 × 15	0.14	0.28	550	390	10 × 12.5	0.15	0.30	555	395		
220	221	8 × 15	0.11	0.22	625	455	10 × 12.5	0.13	0.26	600	435		
270	271	8 × 20	0.095	0.19	750	560	10 × 15	0.11	0.22	700	525		
330	331	8 × 20	0.085	0.17	795	610	10 × 15	0.095	0.19	750	575		
390	391	10 × 20	0.070	0.14	985	770	12.5 × 15	0.080	0.16	920	720		
470	471	10 × 20	0.065	0.13	1020	810	12.5 × 15	0.070	0.14	985	785		
560	561	10 × 25	0.055	0.11	1220	990	12.5 × 15	0.060	0.12	1060	860		
680	681	10 × 31.5	0.046	0.092	1420	1180	16 × 15	0.055	0.11	1270	1050		
820	821	12.5 × 20	0.041	0.082	1430	1210	16 × 15	0.049	0.098	1340	1130		
1000	102	12.5 × 25	0.036	0.072	1660	1430	18 × 15	0.043	0.086	1520	1310		
1200	122	12.5 × 25	0.032	0.064	1760	1550	18 × 15	0.039	0.078	1600	1400		
1500	152	12.5 × 31.5	0.029	0.058	1980	1780	16 × 20	0.034	0.068	1770	1590		
1800	182	12.5 × 35.5	0.026	0.052	2180	1960	16 × 25	0.031	0.062	1980	1780		
2200	222	12.5 × 40	0.024	0.048	2360	2120	18 × 20	0.028	0.056	2050	1840		
2700	272	16 × 31.5	0.022	0.044	2470	2220	18 × 25	0.025	0.050	2290	2060		
3300	332	16 × 35.5	0.020	0.040	2680	2410	18 × 31.5	0.023	0.046	2490	2240		
3900	392	16 × 40	0.019	0.038	2820	2530	18 × 35.5	0.021	0.042	2690	2420		
4700	472	18 × 40	0.018	0.036	2960	2660							

※ In case of low profile type, [6] will be put at 12th digit of type numbering system.

**PL** series

■ Standard ratings

Cap.(μF)		V(Code) Size code Item Code		35 (1V)									
				—				6					
				Case size φD × L (mm)	Impedance(Ω MAX.)		Allowable ripple(mA rms)		Case size φD × L (mm)	Impedance(Ω MAX.)		Allowable ripple(mA rms)	
20°C/100kHz	−10°C/100kHz	105°C/10kHz ~ 200kHz	105°C/120Hz		20°C/100kHz	−10°C/100kHz	105°C/10kHz ~ 200kHz	105°C/120Hz					
22	220	5 × 11	0.75	1.50	160	85							
27	270	5 × 11	0.60	1.20	180	99							
33	330	6.3 × 11	0.49	0.98	225	125							
39	390	6.3 × 11	0.41	0.82	245	140							
47	470	6.3 × 11	0.34	0.68	270	160							
56	560	6.3 × 11	0.28	0.56	295	180							
68	680	6.3 × 15	0.24	0.48	370	230							
82	820	6.3 × 15	0.19	0.38	415	265							
100	101	8 × 11.5	0.16	0.32	460	305							
120	121	8 × 15	0.14	0.28	550	370	10 × 12.5	0.15	0.30	555	375		
150	151	8 × 15	0.12	0.24	595	415	10 × 12.5	0.12	0.24	625	435		
180	181	8 × 20	0.10	0.20	730	520	10 × 15	0.11	0.22	700	500		
220	221	8 × 20	0.085	0.17	795	580	10 × 15	0.090	0.18	770	560		
270	271	10 × 20	0.070	0.14	985	735	12.5 × 15	0.080	0.16	920	690		
330	331	10 × 20	0.060	0.12	1060	810	12.5 × 15	0.065	0.13	1020	780		
390	391	10 × 25	0.055	0.11	1220	955	12.5 × 15	0.060	0.12	1060	825		
470	471	10 × 31.5	0.046	0.092	1420	1130	16 × 15	0.055	0.11	1270	1010		
560	561	12.5 × 20	0.041	0.082	1430	1160	16 × 15	0.048	0.096	1360	1100		
680	681	12.5 × 25	0.036	0.072	1660	1370	18 × 15	0.042	0.084	1540	1270		
820	821	12.5 × 25	0.032	0.064	1760	1490	18 × 15	0.038	0.076	1620	1370		
1000	102	12.5 × 31.5	0.029	0.058	1980	1710	16 × 20	0.034	0.068	1770	1530		
1200	122	12.5 × 35.5	0.026	0.052	2180	1920	16 × 25	0.031	0.062	1980	1740		
1500	152	12.5 × 40	0.024	0.048	2360	2120	18 × 20	0.028	0.056	2050	1840		
1800	182	16 × 31.5	0.022	0.044	2470	2220	18 × 25	0.025	0.050	2290	2060		
2200	222	16 × 35.5	0.020	0.040	2680	2410	18 × 31.5	0.023	0.046	2490	2240		
2700	272	16 × 40	0.018	0.036	2900	2610	18 × 35.5	0.021	0.042	2690	2420		
3300	332	18 × 40	0.017	0.034	3040	2730							

Cap.(μF)		V(Code) Size code Item Code		50 (1H)									
				—				6					
				Case size φD × L (mm)	Impedance(Ω MAX.)		Allowable ripple(mA rms)		Case size φD × L (mm)	Impedance(Ω MAX.)		Allowable ripple(mA rms)	
20°C/100kHz	−10°C/100kHz	105°C/10kHz ~ 200kHz	105°C/120Hz		20°C/100kHz	−10°C/100kHz	105°C/10kHz ~ 200kHz	105°C/120Hz					
0.47	R47	5 × 11	23.0	46.0	22	11							
0.68	R68	5 × 11	16.0	32.0	28	14							
1	010	5 × 11	11.0	22.0	36	18							
1.5	1R5	5 × 11	7.50	15.0	45	22							
2.2	2R2	5 × 11	5.00	10.0	54	27							
3.3	3R3	5 × 11	3.30	6.60	66	33							
4.7	4R7	5 × 11	2.20	4.40	81	40							
6.8	6R8	5 × 11	1.80	3.60	91	45							
10	100	5 × 11	1.40	2.80	115	57							
12	120	5 × 11	1.20	2.40	125	62							
15	150	5 × 11	0.93	1.86	145	72							
18	180	5 × 11	0.80	1.60	155	79							
22	220	6.3 × 11	0.65	1.30	195	100							
27	270	6.3 × 11	0.53	1.06	215	115							
33	330	6.3 × 11	0.43	0.86	240	135							
39	390	6.3 × 11	0.36	0.72	260	150							
47	470	6.3 × 15	0.30	0.60	330	195							
56	560	6.3 × 15	0.25	0.50	360	220							
68	680	8 × 11.5	0.20	0.40	410	255							
82	820	8 × 15	0.17	0.34	500	320	10 × 12.5	0.18	0.36	510	330		
100	101	8 × 20	0.14	0.28	620	410	10 × 15	0.16	0.32	580	385		
120	121	8 × 20	0.12	0.24	670	455	10 × 15	0.13	0.26	640	435		
150	151	10 × 20	0.10	0.20	820	570	12.5 × 15	0.11	0.22	785	545		
180	181	10 × 20	0.085	0.17	890	635	12.5 × 15	0.095	0.19	845	605		
220	221	10 × 25	0.075	0.15	1040	760	12.5 × 15	0.080	0.16	920	670		
270	271	10 × 31.5	0.065	0.13	1200	900	16 × 15	0.070	0.14	1120	840		
330	331	10 × 31.5	0.055	0.11	1300	995	16 × 15	0.060	0.12	1210	925		
390	391	12.5 × 25	0.048	0.096	1440	1120	16 × 15	0.055	0.11	1270	990		
470	471	12.5 × 25	0.044	0.088	1500	1190	18 × 15	0.046	0.092	1470	1170		
560	561	12.5 × 31.5	0.040	0.080	1680	1360	16 × 20	0.044	0.088	1550	1260		
680	681	12.5 × 35.5	0.036	0.072	1850	1530	16 × 20	0.040	0.080	1630	1350		
820	821	12.5 × 40	0.033	0.066	2010	1700	18 × 20	0.036	0.072	1810	1530		
1000	102	16 × 31.5	0.030	0.060	2120	1830	18 × 25	0.033	0.066	2000	1730		
1200	122	16 × 35.5	0.028	0.056	2260	1990	18 × 31.5	0.031	0.062	2140	1880		
1500	152	16 × 40	0.026	0.052	2410	2170	18 × 31.5	0.029	0.058	2220	1990		
1800	182	18 × 35.5	0.025	0.050	2460	2210							
2200	222	18 × 40	0.024	0.048	2560	2300							

※ In case of low profile type, [6] will be put at 12th digit of type numbering system.

## Standard ratings

Cap.( $\mu$ F)	Code	Item	63 (1J)									
			Case size $\phi$ D $\times$ L (mm)	Impedance( $\Omega$ MAX.)		Allowable ripple(mA rms)		Case size $\phi$ D $\times$ L (mm)	Impedance( $\Omega$ MAX.)		Allowable ripple(mA rms)	
				—		—			6		—	
				20°C/100kHz	-10°C/100kHz	105°C/ 10kHz~ 200kHz	105°C/120Hz		20°C/100kHz	-10°C/100kHz	105°C/ 10kHz~ 200kHz	105°C/120Hz
10	100	5×11	1.06	2.12	135	67						
12	120	5×11	0.93	1.86	145	72						
15	150	6.3×11	0.73	1.46	185	92						
18	180	6.3×11	0.63	1.26	195	100						
22	220	6.3×11	0.52	1.04	215	110						
27	270	6.3×11	0.43	0.86	240	130						
33	330	6.3×15	0.35	0.70	305	170						
39	390	6.3×15	0.30	0.60	330	190						
47	470	8×11.5	0.25	0.50	365	215						
56	560	8×15	0.21	0.42	450	275	10×12.5	0.23	0.46	450	275	
68	680	8×15	0.17	0.34	500	315	10×12.5	0.19	0.38	495	310	
82	820	8×20	0.15	0.30	600	385	10×15	0.16	0.32	580	375	
100	101	10×20	0.12	0.24	750	495	12.5×15	0.14	0.28	695	460	
120	121	10×20	0.10	0.20	820	555	12.5×15	0.12	0.24	750	510	
150	151	10×25	0.090	0.18	950	665	12.5×15	0.095	0.19	845	590	
180	181	10×31.5	0.075	0.15	1110	790	16×15	0.080	0.16	1050	750	
220	221	12.5×20	0.065	0.13	1140	835	16×15	0.070	0.14	1120	820	
270	271	12.5×25	0.055	0.11	1340	1000	18×15	0.060	0.12	1290	965	
330	331	12.5×25	0.049	0.098	1420	1090	18×15	0.050	0.10	1410	1080	
390	391	12.5×31.5	0.043	0.086	1620	1260	16×20	0.047	0.094	1500	1170	
470	471	12.5×35.5	0.039	0.078	1780	1420	16×25	0.042	0.084	1700	1350	
560	561	12.5×40	0.035	0.070	1950	1580	18×20	0.039	0.078	1730	1400	
680	681	16×31.5	0.032	0.064	2050	1700	18×25	0.035	0.070	1940	1610	
820	821	16×35.5	0.029	0.058	2220	1880	18×31.5	0.032	0.064	2110	1780	
1000	102	16×40	0.027	0.054	2370	2050	18×35.5	0.029	0.058	2280	1970	
1200	122	18×40	0.025	0.050	2510	2210						

※ In case of low profile type, [6] will be put at 12th digit of type numbering system.