

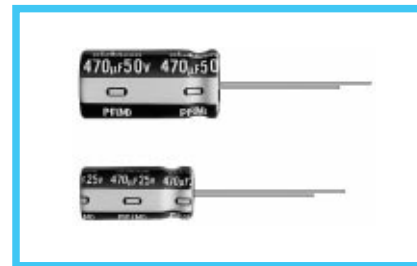
ALUMINUM ELECTROLYTIC CAPACITORS

PF series Low Impedance, High Reliability

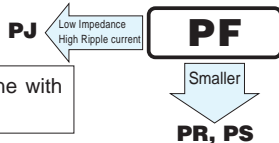


Approved by Reliability Center for Electronic Component, Japan-Certification No. RCJ-03-23C

- Low impedance and high reliability withstanding 5000 hour load life at + 105°C(3000/2000 hours for smaller case sizes as specified below).
- Capacitance ranges available based on the numerical values in E12 series under JIS.
- Ideally suited for use of switching power supplies.



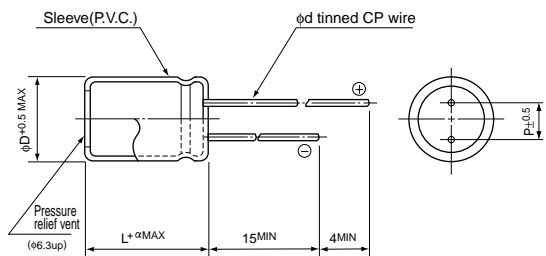
This series will be discontinued in 2002, and combine with PJ series.



Specifications

Item	Performance Characteristics									
Category Temperature Range	— 55 ~ + 105°C									
Rated Voltage Range	6.3 ~ 100V									
Rated 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									
	Rated voltage(V)	6.3	10	16	25	35	50	63	80	100
	tan δ (MAX.)	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.08	0.08
Stability at Low Temperature	Measurement frequency : 120Hz									
	Rated voltage(V)	6.3	10	16	25	35	50	63	80	100
	Impedance ratio ZT/Z20(MAX.)	Z— 55°C/Z + 20°C	4	4	3	3	3	2	2	2
Endurance	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, capacitors meet the characteristics requirements listed at right.									
	Capacitance change	Within ±20% of initial value								
	tan δ	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 endurance characteristics listed above.									
Marking	Printed with white color letter on dark brown sleeve.									

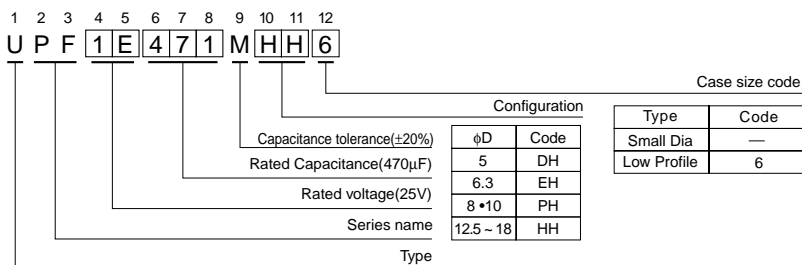
Radial Lead Type



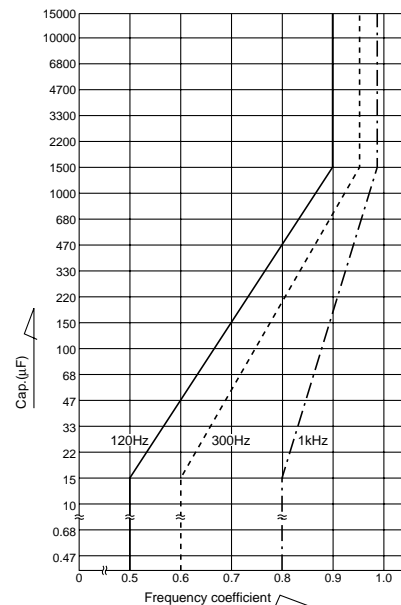
α	(φD<10)1.0	φD	5	6.3	8	10	12.5	16	18
	(φD≥10)1.5	P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
		φd	0.5	0.5	0.6	0.6	0.6 ^{*)}	0.8	0.8

※ In case L>25 for the φ12.5dia. unit, lead dia. φd=0.8mm.

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



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



CAT.8100P

Please refer to page 18, 19, 20 about the formed or taped product spec.
Please refer to page 3 for the minimum order quantity.

Dimension table in next page.



■ Dimensions

D × L (mm)

Cap. (μF)	Code	V(Code)		6.3(0J)		10(1A)		16(1C)		25(1E)		35(1V)	
		Size code		—	6	—	6	—	6	—	6	—	6
22	220												5 × 11
27	270												5 × 11
33	330									5 × 11			6.3 × 11
39	390									5 × 11			6.3 × 11
47	470							5 × 11		6.3 × 11			6.3 × 11
56	560							5 × 11		6.3 × 11			6.3 × 11
68	680						5 × 11	6.3 × 11		6.3 × 11			6.3 × 15
82	820						5 × 11	6.3 × 11		6.3 × 11			6.3 × 15
100	101	5 × 11				6.3 × 11		6.3 × 11		6.3 × 15			8 × 11.5
120	121	5 × 11				6.3 × 11		6.3 × 11		6.3 × 15			8 × 15
150	151	6.3 × 11				6.3 × 11		6.3 × 15		8 × 11.5			8 × 15
180	181	6.3 × 11				6.3 × 11		6.3 × 15		8 × 15	10 × 12.5		10 × 15
220	221	6.3 × 11				6.3 × 15		8 × 11.5		8 × 15	10 × 12.5		8 × 20
270	271	6.3 × 15				6.3 × 15		8 × 15	10 × 12.5	8 × 20	10 × 15		10 × 20
330	331	6.3 × 15				8 × 11.5		8 × 15	10 × 12.5	8 × 20	10 × 15		10 × 20
390	391	8 × 11.5				8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15		10 × 25
470	471	8 × 15	10 × 12.5			8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15		10 × 31.5
560	561	8 × 15	10 × 12.5			8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 25	12.5 × 15		12.5 × 20
680	681	8 × 20	10 × 15			8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 31.5	16 × 15		12.5 × 25
820	821	8 × 20	10 × 15			10 × 20	12.5 × 15	10 × 25	12.5 × 15	12.5 × 20	16 × 15		12.5 × 25
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
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
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
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
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
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
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											

Cap. (μF)	Code	V(Code)		50(1H)		63(1J)		80(1K)		100(2A)	
		Size code		—	6	—	6	—	6	—	6
0.47	R47	5 × 11								5 × 11	
0.68	R68	5 × 11								5 × 11	
1	010	5 × 11								5 × 11	
1.5	1R5	5 × 11								5 × 11	
2.2	2R2	5 × 11								5 × 11	
3.3	3R3	5 × 11								5 × 11	
4.7	4R7	5 × 11						5 × 11		6.3 × 11	
6.8	6R8	5 × 11						5 × 11		6.3 × 11	
10	100	5 × 11				5 × 11		6.3 × 11		6.3 × 11	
12	120	5 × 11				5 × 11		6.3 × 11		6.3 × 11	
15	150	5 × 11				6.3 × 11		6.3 × 11		6.3 × 15	
18	180	5 × 11				6.3 × 11		6.3 × 11		6.3 × 15	
22	220	6.3 × 11				6.3 × 11		6.3 × 15		8 × 11.5	
27	270	6.3 × 11				6.3 × 11		6.3 × 15		8 × 15	10 × 12.5
33	330	6.3 × 11				6.3 × 15		8 × 11.5		8 × 15	10 × 12.5
39	390	6.3 × 11				6.3 × 15		8 × 15	10 × 12.5	8 × 20	10 × 15
47	470	6.3 × 15				8 × 11.5		8 × 15	10 × 12.5	10 × 20	12.5 × 15
56	560	6.3 × 15				8 × 15	10 × 12.5	8 × 20	10 × 15	10 × 20	12.5 × 15
68	680	8 × 11.5				8 × 15	10 × 12.5	10 × 20	12.5 × 15	10 × 25	12.5 × 15
82	820	8 × 15	10 × 12.5			8 × 20	10 × 15	10 × 20	12.5 × 15	10 × 31.5	16 × 15
100	101	8 × 20	10 × 15			10 × 20	12.5 × 15	10 × 25	12.5 × 15	10 × 31.5	16 × 15
120	121	8 × 20	10 × 15			10 × 20	12.5 × 15	10 × 31.5	16 × 15	12.5 × 25	16 × 15
150	151	10 × 20	12.5 × 15			10 × 25	12.5 × 15	10 × 31.5	16 × 15	12.5 × 25	18 × 15
180	181	10 × 20	12.5 × 15			10 × 31.5	16 × 15	12.5 × 25	16 × 15	12.5 × 31.5	16 × 20
220	221	10 × 25	12.5 × 15			12.5 × 20	16 × 15	12.5 × 31.5	18 × 15	12.5 × 35.5	16 × 25
270	271	10 × 31.5	16 × 15			12.5 × 25	18 × 15	12.5 × 31.5	16 × 20	12.5 × 40	18 × 20
330	331	10 × 31.5	16 × 15			12.5 × 25	18 × 15	12.5 × 35.5	16 × 25	16 × 31.5	18 × 25
390	391	12.5 × 25	16 × 15			12.5 × 31.5	16 × 20	12.5 × 40	18 × 20	16 × 35.5	18 × 31.5
470	471	12.5 × 25	18 × 15			12.5 × 35.5	16 × 25	16 × 31.5	18 × 25	16 × 40	18 × 35.5
560	561	12.5 × 31.5	16 × 20			12.5 × 40	18 × 20	16 × 35.5	18 × 31.5	18 × 35.5	
680	681	12.5 × 35.5	16 × 20			16 × 31.5	18 × 25	16 × 40	18 × 31.5	18 × 40	
820	821	12.5 × 40	18 × 20			16 × 35.5	18 × 31.5	18 × 35.5			
1000	102	16 × 31.5	18 × 25			16 × 40	18 × 35.5	18 × 40			
1200	122	16 × 35.5	18 × 31.5			18 × 40					
1500	152	16 × 40	18 × 31.5								
1800	182	18 × 35.5									
2200	222	18 × 40									

※ 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		6.3 (0J)								
				—				6				
				Case size φD × L (mm)		Impedance(Ω MAX.)		Rated ripple (mA rms)		Case size φD × L (mm)		Impedance(Ω MAX.)
		20°C/100kHz	— 10°C/100kHz	105°C/200kHz ~ 105°C/120Hz	105°C/120Hz			20°C/100kHz	— 10°C/100kHz	105°C/200kHz ~ 105°C/120Hz	105°C/120Hz	
100	101	5 × 11	1.70	4.30	97	64						
120	121	5 × 11	1.30	3.30	110	74						
150	151	6.3 × 11	0.98	2.50	131	91						
180	181	6.3 × 11	0.78	2.00	147	105						
220	221	6.3 × 11	0.61	1.50	166	120						
270	271	6.3 × 15	0.49	1.20	191	140						
330	331	6.3 × 15	0.40	1.00	212	160						
390	391	8 × 11.5	0.34	0.85	292	225						
470	471	8 × 15	0.28	0.70	348	275	10 × 12.5	0.29	0.73	352	280	
560	561	8 × 15	0.24	0.60	376	305	10 × 12.5	0.26	0.65	372	300	
680	681	8 × 20	0.20	0.50	452	375	10 × 15	0.22	0.55	431	355	
820	821	8 × 20	0.17	0.43	491	415	10 × 15	0.19	0.48	464	390	
1000	102	10 × 20	0.15	0.38	577	495	12.5 × 15	0.17	0.43	542	465	
1200	122	10 × 20	0.13	0.33	620	545	12.5 × 15	0.15	0.38	577	505	
1500	152	10 × 25	0.11	0.28	726	650	12.5 × 15	0.13	0.33	620	555	
1800	182	10 × 31.5	0.10	0.25	812	730	16 × 15	0.11	0.28	894	800	
2200	222	10 × 31.5	0.087	0.22	871	780	16 × 15	0.099	0.25	942	845	
2700	272	12.5 × 25	0.076	0.19	959	860	18 × 15	0.089	0.22	1060	950	
3300	332	12.5 × 25	0.068	0.17	1020	915	18 × 15	0.079	0.20	1130	1010	
3900	392	12.5 × 31.5	0.062	0.16	1130	1010	16 × 20	0.072	0.18	1230	1100	
4700	472	12.5 × 35.5	0.056	0.14	1250	1120	18 × 20	0.065	0.16	1370	1230	
5600	562	12.5 × 40	0.052	0.13	1330	1190	18 × 20	0.060	0.15	1420	1270	
6800	682	16 × 31.5	0.048	0.12	1730	1550	18 × 25	0.055	0.14	1600	1440	
8200	822	16 × 35.5	0.044	0.11	1900	1710	18 × 31.5	0.051	0.13	1760	1580	
10000	103	16 × 40	0.041	0.10	2050	1840	18 × 31.5	0.047	0.12	1830	1640	
12000	123	18 × 35.5	0.038	0.095	2140	1920						
15000	153	18 × 40	0.036	0.090	2290	2060						

Cap. (μF)		V(Code) Size code Item		10 (1A)								
				—				6				
				Case size φD × L (mm)		Impedance(Ω MAX.)		Rated ripple (mA rms)		Case size φD × L (mm)		Impedance(Ω MAX.)
		20°C/100kHz	— 10°C/100kHz	105°C/200kHz ~ 105°C/120Hz	105°C/120Hz			20°C/100kHz	— 10°C/100kHz	105°C/200kHz ~ 105°C/120Hz	105°C/120Hz	
68	680	5 × 11	1.60	4.00	100	63						
82	820	5 × 11	1.30	3.30	110	71						
100	101	6.3 × 11	1.10	2.80	124	82						
120	121	6.3 × 11	0.89	2.20	138	93						
150	151	6.3 × 11	0.70	1.80	155	105						
180	181	6.3 × 11	0.59	1.50	169	120						
220	221	6.3 × 15	0.48	1.20	193	140						
270	271	6.3 × 15	0.40	1.00	212	155						
330	331	8 × 11.5	0.33	0.83	296	225						
390	391	8 × 15	0.28	0.70	348	270	10 × 12.5	0.30	0.75	346	265	
470	471	8 × 15	0.24	0.60	376	300	10 × 12.5	0.26	0.65	372	295	
560	561	8 × 20	0.20	0.50	452	365	10 × 15	0.22	0.55	431	350	
680	681	8 × 20	0.17	0.43	491	405	10 × 15	0.18	0.45	477	395	
820	821	10 × 20	0.14	0.35	597	505	12.5 × 15	0.16	0.40	559	475	
1000	102	10 × 20	0.12	0.30	645	555	12.5 × 15	0.13	0.33	620	535	
1200	122	10 × 25	0.10	0.25	836	735	12.5 × 15	0.12	0.30	645	565	
1500	152	10 × 31.5	0.090	0.23	856	770	16 × 15	0.10	0.25	938	840	
1800	182	12.5 × 20	0.078	0.20	877	785	16 × 15	0.089	0.22	994	890	
2200	222	12.5 × 25	0.068	0.17	1010	905	18 × 15	0.078	0.20	1130	1010	
2700	272	12.5 × 31.5	0.060	0.15	1150	1030	16 × 20	0.070	0.18	1240	1110	
3300	332	12.5 × 35.5	0.053	0.13	1280	1150	16 × 20	0.062	0.16	1320	1180	
3900	392	12.5 × 40	0.049	0.12	1370	1230	18 × 20	0.057	0.14	1460	1310	
4700	472	16 × 31.5	0.046	0.12	1760	1580	18 × 25	0.052	0.13	1650	1480	
5600	562	16 × 35.5	0.042	0.11	1940	1740	18 × 25	0.049	0.12	1700	1530	
6800	682	16 × 35.5	0.040	0.10	1990	1790	18 × 31.5	0.045	0.11	1870	1680	
8200	822	16 × 40	0.038	0.095	2130	1910	18 × 35.5	0.042	0.11	2040	1830	
10000	103	18 × 40	0.035	0.088	2320	2080						

※ 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		16 (1C)									
				—				6					
				Case size φD × L (mm)	Impedance(Ω MAX.)		Rated ripple (mA rms)		Case size φD × L (mm)	Impedance(Ω MAX.)		Rated 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					
47	470	5 × 11	1.60	4.00	100	60							
56	560	5 × 11	1.30	3.30	110	67							
68	680	6.3 × 11	1.00	2.50	130	81							
82	820	6.3 × 11	0.85	2.10	141	91							
100	101	6.3 × 11	0.70	1.80	155	100							
120	121	6.3 × 11	0.58	1.50	171	115							
150	151	6.3 × 15	0.47	1.20	195	135							
180	181	6.3 × 15	0.40	1.00	212	150							
220	221	8 × 11.5	0.33	0.83	296	215							
270	271	8 × 15	0.28	0.70	348	260	10 × 12.5	0.28	0.70	358	265		
330	331	8 × 15	0.23	0.58	384	295	10 × 12.5	0.23	0.58	395	300		
390	391	8 × 20	0.20	0.50	452	350	10 × 15	0.20	0.50	452	350		
470	471	8 × 20	0.18	0.45	477	380	10 × 15	0.18	0.45	477	380		
560	561	10 × 20	0.15	0.38	577	470	12.5 × 15	0.16	0.40	559	455		
680	681	10 × 20	0.13	0.33	620	515	12.5 × 15	0.14	0.35	597	495		
820	821	10 × 25	0.11	0.28	726	615	12.5 × 15	0.12	0.30	645	545		
1000	102	10 × 31.5	0.095	0.24	833	720	16 × 15	0.11	0.28	894	770		
1200	122	12.5 × 20	0.083	0.21	850	745	16 × 15	0.093	0.23	972	855		
1500	152	12.5 × 25	0.072	0.18	986	885	18 × 15	0.083	0.21	1100	990		
1800	182	12.5 × 31.5	0.064	0.16	1110	995	16 × 20	0.074	0.19	1210	1080		
2200	222	12.5 × 31.5	0.057	0.14	1180	1060	16 × 20	0.067	0.17	1270	1140		
2700	272	12.5 × 35.5	0.051	0.13	1310	1170	16 × 25	0.060	0.15	1460	1310		
3300	332	12.5 × 40	0.047	0.12	1390	1250	18 × 20	0.055	0.14	1480	1330		
3900	392	16 × 31.5	0.044	0.11	1800	1620	18 × 25	0.051	0.13	1660	1490		
4700	472	16 × 35.5	0.041	0.10	1960	1760	18 × 31.5	0.047	0.12	1830	1640		
5600	562	16 × 40	0.039	0.098	2100	1890	18 × 35.5	0.045	0.11	1970	1770		
6800	682	18 × 35.5	0.037	0.093	2170	1950							
8200	822	18 × 40	0.036	0.090	2290	2060							

Cap.(μF)		V(Code) Size code Item		25(1E)									
				—				6					
				Case size φD × L (mm)	Impedance(Ω MAX.)		Rated ripple (mA rms)		Case size φD × L (mm)	Impedance(Ω MAX.)		Rated 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					
33	330	5 × 11	1.60	4.00	86	49							
39	390	5 × 11	1.30	3.30	96	55							
47	470	6.3 × 11	1.10	2.80	108	64							
56	560	6.3 × 11	0.89	2.20	120	73							
68	680	6.3 × 11	0.72	1.80	134	84							
82	820	6.3 × 11	0.60	1.50	147	95							
100	101	6.3 × 15	0.49	1.20	169	110							
120	121	6.3 × 15	0.41	1.00	184	125							
150	151	8 × 11.5	0.33	0.83	296	205							
180	181	8 × 15	0.28	0.70	348	245	10 × 12.5	0.30	0.75	346	245		
220	221	8 × 15	0.23	0.58	384	280	10 × 12.5	0.26	0.65	372	270		
270	271	8 × 20	0.19	0.48	464	345	10 × 15	0.22	0.55	431	320		
330	331	8 × 20	0.17	0.43	491	375	10 × 15	0.19	0.48	464	355		
390	391	10 × 20	0.14	0.35	597	465	12.5 × 15	0.16	0.40	559	435		
470	471	10 × 20	0.13	0.33	620	495	12.5 × 15	0.14	0.35	597	475		
560	561	10 × 25	0.11	0.28	726	590	12.5 × 15	0.12	0.30	645	525		
680	681	10 × 31.5	0.093	0.23	842	700	16 × 15	0.11	0.28	894	745		
820	821	12.5 × 20	0.082	0.21	855	725	16 × 15	0.098	0.25	947	800		
1000	102	12.5 × 25	0.072	0.18	986	850	18 × 15	0.086	0.22	1080	930		
1200	122	12.5 × 25	0.065	0.16	1030	905	18 × 15	0.078	0.20	1130	990		
1500	152	12.5 × 31.5	0.058	0.15	1170	1050	16 × 20	0.068	0.17	1260	1130		
1800	182	12.5 × 35.5	0.053	0.13	1280	1150	16 × 25	0.062	0.16	1430	1280		
2200	222	12.5 × 40	0.048	0.12	1380	1240	18 × 20	0.056	0.14	1470	1320		
2700	272	16 × 31.5	0.044	0.11	1800	1620	18 × 25	0.051	0.13	1660	1490		
3300	332	16 × 35.5	0.041	0.10	1960	1760	18 × 31.5	0.047	0.12	1830	1640		
3900	392	16 × 40	0.038	0.095	2130	1910	18 × 35.5	0.043	0.11	2010	1800		
4700	472	18 × 40	0.036	0.090	2290	2060							

* 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		35(1V)									
				—				6					
				Case size φD × L (mm)	Impedance(Ω MAX.)		Rated ripple (mA rms)		Case size φD × L (mm)	Impedance(Ω MAX.)		Rated 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	1.50	3.80	89	47							
27	270	5 × 11	1.20	3.00	100	55							
33	330	6.3 × 11	0.99	2.50	114	64							
39	390	6.3 × 11	0.83	2.10	125	72							
47	470	6.3 × 11	0.69	1.70	137	82							
56	560	6.3 × 11	0.57	1.40	151	92							
68	680	6.3 × 15	0.48	1.20	170	105							
82	820	6.3 × 15	0.39	0.98	189	120							
100	101	8 × 11.5	0.32	0.80	301	200							
120	121	8 × 15	0.28	0.70	348	235	10 × 12.5	0.31	0.78	340	230		
150	151	8 × 15	0.23	0.58	384	265	10 × 12.5	0.25	0.63	379	265		
180	181	8 × 20	0.20	0.50	452	320	10 × 15	0.22	0.55	431	305		
220	221	8 × 20	0.17	0.43	491	360	10 × 15	0.18	0.45	477	350		
270	271	10 × 20	0.14	0.35	597	445	12.5 × 15	0.16	0.40	559	415		
330	331	10 × 20	0.12	0.30	645	495	12.5 × 15	0.13	0.33	620	475		
390	391	10 × 25	0.11	0.28	726	565	12.5 × 15	0.12	0.30	645	500		
470	471	10 × 31.5	0.093	0.23	842	670	16 × 15	0.11	0.28	894	715		
560	561	12.5 × 20	0.082	0.21	855	695	16 × 15	0.096	0.24	957	775		
680	681	12.5 × 25	0.072	0.18	986	820	18 × 15	0.085	0.21	1090	910		
820	821	12.5 × 25	0.064	0.16	1040	880	18 × 15	0.076	0.19	1150	975		
1000	102	12.5 × 31.5	0.058	0.15	1170	1010	16 × 20	0.068	0.17	1260	1080		
1200	122	12.5 × 35.5	0.052	0.13	1300	1140	16 × 25	0.062	0.16	1430	1250		
1500	152	12.5 × 40	0.048	0.12	1380	1240	18 × 20	0.056	0.14	1470	1320		
1800	182	16 × 31.5	0.044	0.11	1800	1620	18 × 25	0.051	0.13	1660	1490		
2200	222	16 × 35.5	0.040	0.10	1990	1790	18 × 31.5	0.047	0.12	1840	1650		
2700	272	16 × 40	0.037	0.093	2150	1930	18 × 35.5	0.043	0.11	2010	1800		
3300	332	18 × 40	0.035	0.088	2320	2080							

Cap.(μF)		V(Code) Size code Item Code		50(1H)									
				—				6					
				Case size φD × L (mm)	Impedance(Ω MAX.)		Rated ripple (mA rms)		Case size φD × L (mm)	Impedance(Ω MAX.)		Rated 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	47.0	118.0	15	7							
0.68	R68	5 × 11	32.0	80.0	19	9							
1	010	5 × 11	22.0	55.0	24	12							
1.5	1R5	5 × 11	15.0	38.0	30	15							
2.2	2R2	5 × 11	10.0	25.0	36	18							
3.3	3R3	5 × 11	6.70	17.0	44	22							
4.7	4R7	5 × 11	4.70	12.0	54	27							
6.8	6R8	5 × 11	3.20	8.00	61	33							
10	100	5 × 11	2.20	5.50	78	39							
12	120	5 × 11	1.80	4.50	84	42							
15	150	5 × 11	1.40	3.50	92	46							
18	180	5 × 11	1.20	3.00	100	51							
22	220	6.3 × 11	0.98	2.50	122	65							
27	270	6.3 × 11	0.80	2.00	127	69							
33	330	6.3 × 11	0.65	1.60	141	80							
39	390	6.3 × 11	0.55	1.40	153	88							
47	470	6.3 × 15	0.45	1.10	176	105							
56	560	6.3 × 15	0.38	0.95	191	115							
68	680	8 × 11.5	0.31	0.78	306	190							
82	820	8 × 15	0.26	0.65	361	230	10 × 12.5	0.28	0.70	358	230		
100	101	8 × 20	0.22	0.55	431	285	10 × 15	0.24	0.60	376	250		
120	121	8 × 20	0.18	0.45	477	320	10 × 15	0.20	0.50	452	305		
150	151	10 × 20	0.15	0.38	577	400	12.5 × 15	0.16	0.40	559	390		
180	181	10 × 20	0.13	0.33	620	440	12.5 × 15	0.14	0.35	597	425		
220	221	10 × 25	0.11	0.28	726	530	12.5 × 15	0.12	0.30	645	470		
270	271	10 × 31.5	0.094	0.24	837	625	16 × 15	0.10	0.25	938	700		
330	331	10 × 31.5	0.084	0.21	886	680	16 × 15	0.090	0.23	988	760		
390	391	12.5 × 25	0.073	0.18	979	760	16 × 15	0.081	0.20	1040	810		
470	471	12.5 × 25	0.066	0.17	1020	815	18 × 15	0.070	0.18	1200	960		
560	561	12.5 × 31.5	0.060	0.15	1150	935	16 × 20	0.066	0.17	1280	1040		
680	681	12.5 × 35.5	0.054	0.14	1270	1060	16 × 20	0.060	0.15	1340	1110		
820	821	12.5 × 40	0.050	0.13	1350	1140	18 × 20	0.054	0.14	1500	1270		
1000	102	16 × 31.5	0.046	0.12	1760	1520	18 × 25	0.050	0.13	1680	1450		
1200	122	16 × 35.5	0.043	0.11	1920	1680	18 × 31.5	0.047	0.12	1830	1610		
1500	152	16 × 40	0.040	0.10	2070	1860	18 × 31.5	0.044	0.11	1900	1710		
1800	182	18 × 35.5	0.038	0.095	2140	1920							
2200	222	18 × 40	0.035	0.088	2320	2080							

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

Standard ratings

Cap.(μF)		V(Code)		63(1J)									
		Size code		—						6			
		Item	Case size φD × L (mm)	Impedance(Ω MAX.)		Rated ripple (mA rms)		Case size φD × L (mm)	Impedance(Ω MAX.)		Rated ripple (mA rms)		
Code		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	1.60	4.00	86	43							
12	120	5 × 11	1.40	3.50	92	46							
15	150	6.3 × 11	1.10	2.80	108	54							
18	180	6.3 × 11	0.95	2.40	116	59							
22	220	6.3 × 11	0.78	2.00	129	69							
27	270	6.3 × 11	0.64	1.60	142	78							
33	330	6.3 × 15	0.52	1.30	164	93							
39	390	6.3 × 15	0.45	1.10	176	100							
47	470	8 × 11.5	0.37	0.93	279	165							
56	560	8 × 15	0.31	0.78	331	200	10 × 12.5	0.34	0.85	325	195		
68	680	8 × 15	0.26	0.65	361	225	10 × 12.5	0.28	0.70	358	225		
82	820	8 × 20	0.22	0.55	431	280	10 × 15	0.24	0.60	413	265		
100	101	10 × 20	0.18	0.45	527	350	12.5 × 15	0.20	0.50	500	330		
120	121	10 × 20	0.15	0.38	577	390	12.5 × 15	0.18	0.45	527	355		
150	151	10 × 25	0.13	0.33	667	465	12.5 × 15	0.14	0.35	597	415		
180	181	10 × 31.5	0.11	0.28	774	550	16 × 15	0.12	0.30	856	610		
220	221	12.5 × 20	0.094	0.24	798	585	16 × 15	0.10	0.25	938	685		
270	271	12.5 × 25	0.082	0.21	923	690	18 × 15	0.088	0.22	1070	800		
330	331	12.5 × 25	0.073	0.18	979	750	18 × 15	0.078	0.20	1130	870		
390	391	12.5 × 31.5	0.065	0.16	1100	855	16 × 20	0.070	0.18	1240	965		
470	471	12.5 × 35.5	0.058	0.15	1230	980	16 × 25	0.063	0.16	1420	1130		
560	561	12.5 × 40	0.052	0.13	1330	1080	18 × 20	0.058	0.15	1450	1180		
680	681	16 × 31.5	0.048	0.12	1730	1440	18 × 25	0.052	0.13	1650	1370		
820	821	16 × 35.5	0.044	0.11	1900	1610	18 × 31.5	0.048	0.12	1820	1540		
1000	102	16 × 40	0.041	0.10	2050	1770	18 × 35.5	0.044	0.10	1990	1720		
1200	122	18 × 40	0.038	0.095	2230	1960							

Cap.(μF)		V(Code)		80(1K)									
		Size code		—						6			
		Item	Case size φD × L (mm)	Impedance(Ω MAX.)		Rated ripple (mA rms)		Case size φD × L (mm)	Impedance(Ω MAX.)		Rated ripple (mA rms)		
Code		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			
4.7	4R7	5 × 11	4.20	11.00	53	26							
6.8	6R8	5 × 11	2.60	7.00	68	34							
10	100	6.3 × 11	1.70	4.60	87	43							
12	120	6.3 × 11	1.40	3.80	96	48							
15	150	6.3 × 11	1.20	3.20	104	52							
18	180	6.3 × 11	1.00	2.70	114	58							
22	220	6.3 × 15	0.77	2.10	135	71							
27	270	6.3 × 15	0.63	1.70	149	80							
33	330	8 × 11.5	0.53	1.40	234	132							
39	390	8 × 15	0.46	1.20	272	156	10 × 12.5	0.49	1.30	271	155		
47	470	8 × 15	0.39	1.10	295	175	10 × 12.5	0.42	1.10	293	174		
56	560	8 × 20	0.34	0.92	347	208	10 × 15	0.36	0.97	337	202		
68	680	10 × 20	0.28	0.76	426	264	12.5 × 15	0.31	0.84	402	249		
82	820	10 × 20	0.25	0.68	447	284	12.5 × 15	0.27	0.73	430	273		
100	101	10 × 25	0.21	0.57	526	347	12.5 × 15	0.23	0.62	466	308		
120	121	10 × 31.5	0.18	0.49	606	406	16 × 15	0.20	0.54	663	444		
150	151	10 × 31.5	0.15	0.41	663	459	16 × 15	0.18	0.47	699	484		
180	181	12.5 × 25	0.13	0.35	734	520	16 × 15	0.15	0.41	766	543		
220	221	12.5 × 31.5	0.12	0.32	816	595	18 × 15	0.13	0.35	881	643		
270	271	12.5 × 31.5	0.10	0.27	894	667	16 × 20	0.11	0.30	995	742		
330	331	12.5 × 35.5	0.088	0.24	1000	767	16 × 25	0.099	0.27	1140	874		
390	391	12.5 × 40	0.078	0.21	1060	822	18 × 20	0.089	0.24	1170	908		
470	471	16 × 31.5	0.069	0.19	1450	1150	18 × 25	0.080	0.22	1330	1060		
560	561	16 × 35.5	0.062	0.17	1600	1300	18 × 31.5	0.072	0.19	1490	1210		
680	681	16 × 40	0.055	0.15	1770	1470	18 × 31.5	0.065	0.18	1560	1300		
820	821	18 × 35.5	0.049	0.13	1890	1590							
1000	102	18 × 40	0.044	0.12	2080	1790							

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

Standard ratings

Cap. (μF)	Code	Item	Case size φD × L (mm)	100(2A)				6				
				Impedance (Ω MAX.)		Rated ripple (mA rms)		Case size φD × L (mm)	Impedance (Ω MAX.)		Rated ripple (mA rms)	
				20°C/100kHz	−10°C/100kHz	105°C/100kHz 105°C/200kHz	105°C/120Hz		20°C/100kHz	−10°C/100kHz	105°C/100kHz 105°C/200kHz	105°C/120Hz
0.47	R47	5 × 11		43.0	116.0	17	8					
0.68	R68	5 × 11		23.0	62.0	23	11					
1	010	5 × 11		17.0	46.0	27	13					
1.5	1R5	5 × 11		10.0	27.0	35	17					
2.2	2R2	5 × 11		6.60	18.0	43	21					
3.3	3R3	5 × 11		4.10	11.0	54	27					
4.7	4R7	6.3 × 11		2.80	7.60	68	34					
6.8	6R8	6.3 × 11		1.90	5.10	83	41					
10	100	6.3 × 11		1.20	3.20	104	52					
12	120	6.3 × 11		1.00	2.70	114	57					
15	150	6.3 × 15		0.81	2.20	131	65					
18	180	6.3 × 15		0.67	1.80	155	73					
22	220	8 × 11.5		0.55	1.50	230	122					
27	270	8 × 15		0.47	1.30	269	146	10 × 12.5	0.50	1.40	268	145
33	330	8 × 15		0.38	1.00	299	169	10 × 12.5	0.42	1.10	293	166
39	390	8 × 20		0.33	0.89	352	202	10 × 15	0.36	0.97	337	193
47	470	10 × 20		0.28	0.76	423	252	12.5 × 15	0.31	0.84	402	239
56	560	10 × 20		0.24	0.65	456	274	12.5 × 15	0.27	0.73	430	258
68	680	10 × 25		0.21	0.57	526	326	12.5 × 15	0.23	0.62	466	289
82	820	10 × 31.5		0.18	0.49	606	386	16 × 15	0.19	0.51	681	433
100	101	10 × 31.5		0.15	0.41	663	438	16 × 15	0.17	0.46	719	475
120	121	12.5 × 25		0.13	0.35	774	519	16 × 15	0.14	0.38	793	531
150	151	12.5 × 25		0.11	0.30	798	553	18 × 15	0.12	0.32	917	635
180	181	12.5 × 31.5		0.098	0.26	904	641	16 × 20	0.11	0.30	995	706
220	221	12.5 × 35.5		0.087	0.23	1000	730	16 × 25	0.093	0.25	1170	854
270	271	12.5 × 40		0.072	0.19	1130	843	18 × 20	0.080	0.22	1230	918
330	331	16 × 31.5		0.062	0.17	1520	1160	18 × 25	0.070	0.19	1420	1080
390	391	16 × 35.5		0.053	0.14	1730	1340	18 × 31.5	0.062	0.17	1600	1240
470	471	16 × 40		0.047	0.13	1920	1530	18 × 35.5	0.056	0.15	1770	1410
560	561	18 × 35.5		0.041	0.11	2070	1680					
680	681	18 × 40		0.036	0.097	2300	1910					

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