

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

Low Impedance

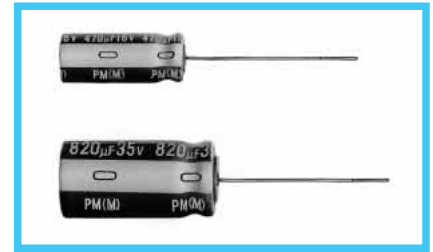
Long Life

Anti-Solvent Feature  
(through 100V only)

PM

  
↓  
Smaller  
↓  

PW

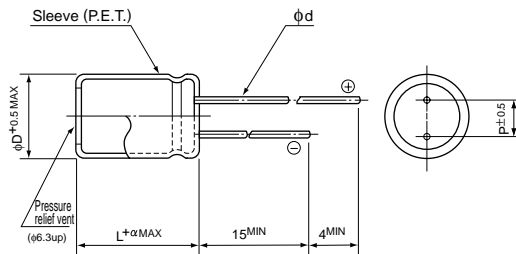


- High reliability withstanding 5000hour load life at +105°C (3000/2000hours for smaller case sizes as specified below).
- Capacitance ranges available based on the numerical values in E12 series under JIS.

## Specifications

Item	Performance Characteristics										
Category Temperature Range	-55 ~ +105°C (6.3 ~ 100V), -40 ~ +105°C (160 ~ 400V), -25 ~ +105°C (450V)										
Rated Voltage Range	6.3 ~ 450V										
Rated Capacitance Range	0.47 ~ 15000μF										
Capacitance Tolerance	±20% at 120Hz, 20°C										
Leakage Current	Rated Voltage (V)	6.3 ~ 100							160 ~ 450		
	Leakage current	After 1 minute's application of rated voltage, leakage current is not more than 0.03CV or 4 (μA), whichever is greater.							CV ≤ 1000 : I = 0.1CV+40 (μA) max. (1 minute's) CV > 1000 : I = 0.04CV+100 (μA) max. (1 minute's)		
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 ~ 100	160 ~ 350	400 ~ 450	
Stability at Low Temperature	Impedance ratio	Rated voltage (V)									
		Z-25°C / Z+20°C									
		Z-40°C / Z+20°C									
		Z-55°C / Z+20°C									
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 characteristic requirements listed at right.										
	Capacitance change	Within ±20% of initial value									
	tan δ	200% or less of initial specified value									
Shelf Life	After leaving capacitors under no load at 105°C for 1000 hours, they meet the characteristic requirements listed at right.										
	Capacitance change	Within ±20% of initial value									
	tan δ	150% or less of initial specified value									
Marking	Printed with white color letter on dark brown sleeve.										

## Radial Lead Type



α	(ϕD < 10)	1.5
	(ϕD ≥ 10)	2.0

(mm)							
ϕD	5	6.3	8	10	12.5	16	18
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 ϕ12.5 dia. unit, lead dia. ϕd = 0.8mm.

## Type numbering system (Example : 25V 470μF)

U P M 1 E 4 7 1 M H D
Size code

1 Configuration ※

2 Capacitance tolerance (±20%)

3 Rated Capacitance (470μF)

4 Rated voltage (25V)

5 Series name

6 Type

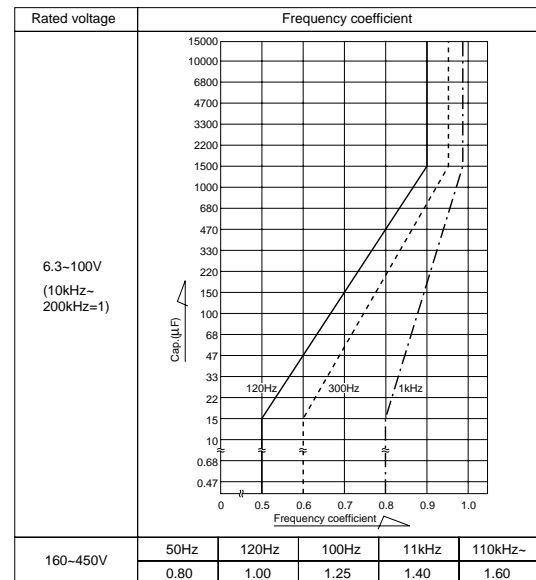
Type	Code
Small Dia	—
Low Profile	6

### Configuration

ϕ D	Pb-free leadwire Pb-free PET sleeve	Sn-Pb finished leadwire PVC sleeve (containing Pb)
5	DD	DH
6.3	ED	EH
8 · 10	PD	PH
12.5 ~ 18	HD	HH

※ Please contact to us if other configurations are required.

## Frequency coefficient of rated ripple current



Please refer to page 19, 20, 21 about the formed or taped product spec.  
Please refer to page 3 for the minimum order quantity.

• Dimension table in next page.



## ■Dimensions

φD×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	10×12.5
150	151		6.3×11		6.3×11			6.3×15		8×11.5	8×15	10×12.5
180	181		6.3×11		6.3×11			6.3×15		8×15	10×12.5	8×20
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
47	470		6.3×15		8×11.5			8×15	10×12.5	10×20
56	560		6.3×15		8×15	10×12.5		8×20	10×15	10×20
68	680		8×11.5		8×15	10×12.5		10×20	12.5×15	10×25
82	820		8×15	10×12.5	8×20	10×15		10×20	12.5×15	10×31.5
100	101		8×20	10×15	10×20	12.5×15		10×25	12.5×15	10×31.5
120	121		8×20	10×15	10×20	12.5×15		10×31.5	16×15	12.5×25
150	151		10×20	12.5×15	10×25	12.5×15		10×31.5	16×15	12.5×25
180	181		10×20	12.5×15	10×31.5	16×15		12.5×25	16×15	12.5×31.5
220	221		10×25	12.5×15	12.5×20	16×15		12.5×31.5	18×15	12.5×35.5
270	271		10×31.5	16×15	12.5×25	18×15		12.5×31.5	16×20	12.5×40
330	331		10×31.5	16×15	12.5×25	18×15		12.5×35.5	16×25	16×31.5
390	391		12.5×25	16×15	12.5×31.5	16×20		12.5×40	18×20	16×35.5
470	471		12.5×25	18×15	12.5×35.5	16×25		16×31.5	18×25	16×40
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.

Dimension table for 160 ~ 450V products are shown in 97 page.

## Standard ratings

V(Code) Size code		6.3 (0J)										
		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)	
				20°C / 100kHz	-10°C / 100kHz	105°C / $\frac{10kHz}{200kHz}$	105°C / 120Hz		20°C / 100kHz	-10°C / 100kHz	105°C / $\frac{10kHz}{200kHz}$	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)										
		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)	
				20°C / 100kHz	-10°C / 100kHz	105°C / $\frac{10kHz}{200kHz}$	105°C / 120Hz		20°C / 100kHz	-10°C / 100kHz	105°C / $\frac{10kHz}{200kHz}$	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

V(Code) Size Code		16 (1C)											
		Item Code	Case size φD × L (mm)	Impedance (Ω MAX)		Rated ripple (mA rms)		6					
				20°C / 100kHz	-10°C / 100kHz	105°C / 100kHz	105°C / 120Hz	Case size φD × L (mm)	20°C / 100kHz	-10°C / 100kHz	105°C / 100kHz	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							

V(Code) Size Code		25 (1E)											
		Item Code	Case size φD × L (mm)	Impedance (Ω MAX)		Rated ripple (mA rms)		6					
				20°C / 100kHz	-10°C / 100kHz	105°C / 100kHz	105°C / 120Hz	Case size φD × L (mm)	20°C / 100kHz	-10°C / 100kHz	105°C / 100kHz	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.



## Standard ratings

V(Code) Size code		35 (1V)										
		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)	
				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						

V(Code) Size code		50 (1H)										
		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)	
				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. (μF)		V(Code) Size code		63 (1J)									
				—		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)
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							

Cap. (μF)		V(Code) Size code		80 (1K)									
				—		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)
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.( $\mu$ F)	V(Code)	Size code	100 (2A)										
			Item	Case size $\phi$ D $\times$ L (mm)	Impedance ( $\Omega$ MAX.)		Rated ripple (mA rms)		Case size $\phi$ D $\times$ L (mm)	Impedance ( $\Omega$ MAX.)		Rated ripple (mA rms)	
					—		6			—		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
0.47	R47	5 $\times$ 11	43.0	116.0	17	8							
0.68	R68	5 $\times$ 11	23.0	62.0	23	11							
1	010	5 $\times$ 11	17.0	46.0	27	13							
1.5	1R5	5 $\times$ 11	10.0	27.0	35	17							
2.2	2R2	5 $\times$ 11	6.60	18.0	43	21							
3.3	3R3	5 $\times$ 11	4.10	11.0	54	27							
4.7	4R7	6.3 $\times$ 11	2.80	7.60	68	34							
6.8	6R8	6.3 $\times$ 11	1.90	5.10	83	41							
10	100	6.3 $\times$ 11	1.20	3.20	104	52							
12	120	6.3 $\times$ 11	1.00	2.70	114	57							
15	150	6.3 $\times$ 15	0.81	2.20	131	65							
18	180	6.3 $\times$ 15	0.67	1.80	155	73							
22	220	8 $\times$ 11.5	0.55	1.50	230	122							
27	270	8 $\times$ 15	0.47	1.30	269	146	10 $\times$ 12.5	0.50	1.40	268	145		
33	330	8 $\times$ 15	0.38	1.00	299	169	10 $\times$ 12.5	0.42	1.10	293	166		
39	390	8 $\times$ 20	0.33	0.89	352	202	10 $\times$ 15	0.36	0.97	337	193		
47	470	10 $\times$ 20	0.28	0.76	423	252	12.5 $\times$ 15	0.31	0.84	402	239		
56	560	10 $\times$ 20	0.24	0.65	456	274	12.5 $\times$ 15	0.27	0.73	430	258		
68	680	10 $\times$ 25	0.21	0.57	526	326	12.5 $\times$ 15	0.23	0.62	466	289		
82	820	10 $\times$ 31.5	0.18	0.49	606	386	16 $\times$ 15	0.19	0.51	681	433		
100	101	10 $\times$ 31.5	0.15	0.41	663	438	16 $\times$ 15	0.17	0.46	719	475		
120	121	12.5 $\times$ 25	0.13	0.35	774	519	16 $\times$ 15	0.14	0.38	793	531		
150	151	12.5 $\times$ 25	0.11	0.30	798	553	18 $\times$ 15	0.12	0.32	917	635		
180	181	12.5 $\times$ 31.5	0.098	0.26	904	641	16 $\times$ 20	0.11	0.30	995	706		
220	221	12.5 $\times$ 35.5	0.087	0.23	1000	730	16 $\times$ 25	0.093	0.25	1170	854		
270	271	12.5 $\times$ 40	0.072	0.19	1130	843	18 $\times$ 20	0.080	0.22	1230	918		
330	331	16 $\times$ 31.5	0.062	0.17	1520	1160	18 $\times$ 25	0.070	0.19	1420	1080		
390	391	16 $\times$ 35.5	0.053	0.14	1730	1340	18 $\times$ 31.5	0.062	0.17	1600	1240		
470	471	16 $\times$ 40	0.047	0.13	1920	1530	18 $\times$ 35.5	0.056	0.15	1770	1410		
560	561	18 $\times$ 35.5	0.041	0.11	2070	1680							
680	681	18 $\times$ 40	0.036	0.097	2300	1910							

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

$\phi$ D  $\times$  L (mm)

Cap.( $\mu$ F)	V(Code)	160		200		250		315		350		400		450	
		2C	2D	2E	2F	2V	2G	2W							
1	010	8 $\times$ 11.5	19	8 $\times$ 11.5	19	8 $\times$ 11.5	19	8 $\times$ 11.5	19	10 $\times$ 12.5	21	10 $\times$ 12.5	17	10 $\times$ 15	17
2.2	2R2	8 $\times$ 11.5	30	8 $\times$ 11.5	30	10 $\times$ 12.5	32	10 $\times$ 12.5	32	10 $\times$ 15	34	10 $\times$ 15	28	10 $\times$ 20	28
3.3	3R3	10 $\times$ 12.5	50	10 $\times$ 12.5	50	10 $\times$ 15	52	10 $\times$ 15	52	10 $\times$ 20	54	10 $\times$ 20	47	12.5 $\times$ 20	48
4.7	4R7	10 $\times$ 12.5	57	10 $\times$ 15	60	10 $\times$ 15	60	10 $\times$ 20	65	10 $\times$ 20	65	12.5 $\times$ 20	55	12.5 $\times$ 25	55
10	100	10 $\times$ 15	90	10 $\times$ 20	95	12.5 $\times$ 20	98	12.5 $\times$ 20	98	12.5 $\times$ 25	100	12.5 $\times$ 25	85	16 $\times$ 25	90
22	220	12.5 $\times$ 20	140	12.5 $\times$ 25	145	16 $\times$ 25	150	16 $\times$ 25	150	16 $\times$ 25	150	16 $\times$ 31.5	130	16 $\times$ 35.5	135
33	330	12.5 $\times$ 25	175	16 $\times$ 25	180	16 $\times$ 25	180	16 $\times$ 31.5	185	16 $\times$ 35.5	190	18 $\times$ 35.5	170	18 $\times$ 40	170
47	470	16 $\times$ 25	220	16 $\times$ 25	220	16 $\times$ 31.5	225	18 $\times$ 35.5	235	18 $\times$ 40	240				
100	101	16 $\times$ 35.5	330	18 $\times$ 40	345	18 $\times$ 40	345							Case size	※

※ Rated Ripple (mA rms) at 105°C 120Hz