ALUMINUM ELECTROLYTIC CAPACITORS

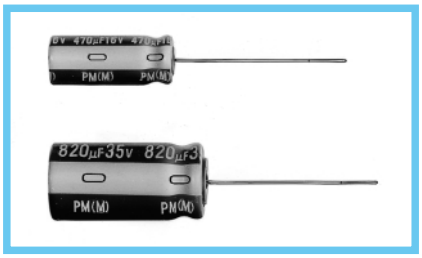
nichicon

PM

Extremely Low Impedance, High Reliability

series

Low Impedance | Long Life | Anti-Solvent Feature (through 100V only)



- 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.
- Adapted to the RoHS directive (2002/95/EC).

PM → Smaller → PW

■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
tan δ (MAX.)	0.22	0.19	0.16	0.14	0.12	0.10	0.08	0.20	0.25

Stability at Low Temperature

Rated voltage (V)		6.3 · 10	16	25 · 35	50~100	160~200	250	315~350	400	450	120Hz
Impedance ratio (MAX.)	Z–25°C / Z+20°C	—	—	—	—	—	—	—	—	15	
	Z–40°C / Z+20°C	—	—	—	—	4	6	8	10	—	
	Z–55°C / Z+20°C	4	3	3	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 characteristic 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

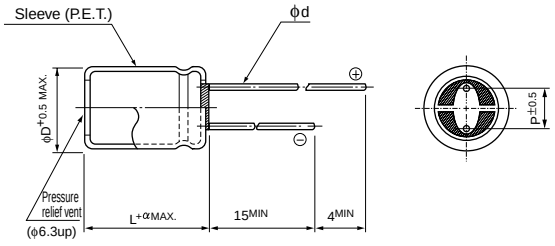
Shelf Life

After storing the capacitors under no load at 105°C for 1000 hours, and after performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they will meet the characteristic requirements listed at right.

Capacitance change	Within ±20% of initial value
tan δ	150% or less of initial specified value
Leakage current	Initial specified value or less

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. φ d = 0.8mm.

• Please refer to page 21 about the end seal configulation.

Type numbering system (Example : 25V 470μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	P	M	1	E	4	7	1	M	P	D	

Size code

Configuration ※

Capacitance tolerance (±20%)

Rated Capacitance (470μF)

Rated voltage (25V)

Series name

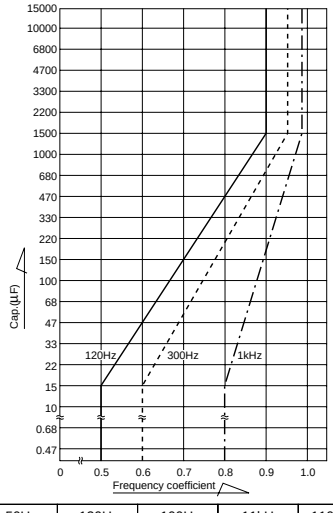
Type

Type	Code
Small Dia	—
Low Profile	6

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 · 10	PD
12.5 ~ 18	HD

●Frequency coefficient of rated ripple current

Rated voltage	Frequency coefficient
6.3~100V (10kHz~200kHz=1)	

160~450V	50Hz	120Hz	100Hz	11kHz	110kHz~
	0.80	1.00	1.25	1.40	1.60

Please refer to page 21, 22, 23 about the formed or taped product spec.
Please refer to page 3 for the minimum order quantity.

● Dimension table in next page.

PM series

■Dimensions

ϕD×L (mm)

Cap.(μF) \ V(Code) / Size code		6.3 (0J)		10 (1A)		16 (1C)		25 (1E)		35 (1V)	
		—	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	10×15
220	221	6.3×11		6.3×15		8×11.5		8×15	10×12.5	8×20	10×15
270	271	6.3×15		6.3×15		8×15	10×12.5	8×20	10×15	10×20	12.5×15
330	331	6.3×15		8×11.5		8×15	10×12.5	8×20	10×15	10×20	12.5×15
390	391	8×11.5		8×15	10×12.5	8×20	10×15	10×20	12.5×15	10×25	12.5×15
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
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
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
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
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
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
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
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
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
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									

Cap.(μF) \ V(Code) / Size code / Code		50 (1H)		63 (1J)		80 (1K)		100 (2A)	
		—	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.

Dimension table for 160 ~ 450V products are shown in 122 page.

PM series

■Standard ratings

Cap.(μF)	Code	6.3 (0J) — Case size φD×L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 10kHz~200kHz	Rated ripple (mArms) 105°C / 120Hz	6 — Case size φD×L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 10kHz~200kHz	Rated ripple (mArms) 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	635	455
560	561	8×15	0.12	0.24	595	480	10×12.5	0.13	0.26	670	485
680	681	8×20	0.10	0.20	730	605	10×15	0.11	0.22	825	580
820	821	8×20	0.085	0.17	795	670	10×15	0.095	0.19	840	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	1060	895	12.5×15	0.075	0.15	950	835
1500	152	10×25	0.055	0.11	1260	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	1700	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	1980	1710	16×20	0.036	0.072	1770	1540
4700	472	12.5×35.5	0.028	0.056	2230	1890	18×20	0.032	0.064	1920	1720
5600	562	12.5×40	0.026	0.052	2460	2040	18×20	0.030	0.060	1980	1780
6800	682	16×31.5	0.024	0.048	2510	2130	18×25	0.027	0.054	2350	1980
8200	822	16×35.5	0.022	0.044	2770	2290	18×31.5	0.025	0.050	2600	2150
10000	103	16×40	0.020	0.040	3110	2470	18×31.5	0.023	0.046	2720	2240
12000	123	18×35.5	0.019	0.038	3050	2530					
15000	153	18×40	0.018	0.036	3300	2660					

Cap.(μF)	Code	10 (1A) — Case size φD×L (mm)	Impedance (Ω)MAX. 20°C / 100kHz	Impedance (Ω)MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 10kHz~200kHz	Rated ripple (mArms) 105°C / 120Hz	6 — Case size φD×L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 10kHz~200kHz	Rated ripple (mArms) 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	635	430
470	471	8×15	0.12	0.24	595	475	10×12.5	0.13	0.26	670	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	825	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	1260	1120	12.5×15	0.060	0.12	1060	930
1500	152	10×31.5	0.045	0.090	1450	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	1980	1740	16×20	0.035	0.070	1740	1560
3300	332	12.5×35.5	0.026	0.052	2230	1960	16×20	0.031	0.062	1850	1660
3900	392	12.5×40	0.024	0.048	2460	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	2350	2020
5600	562	16×35.5	0.021	0.042	2610	2340	18×25	0.024	0.048	2440	2100
6800	682	16×35.5	0.020	0.040	2770	2410	18×31.5	0.022	0.044	2720	2280
8200	822	16×40	0.019	0.038	3110	2530	18×35.5	0.021	0.042	3050	2420
10000	103	18×40	0.017	0.034	3300	2730					

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

PM series

■Standard ratings

V(Code) / Size Code / Item / Cap.(μF) / Code		16 (1C)									
		—					6				
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)	
			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	635	430
330	331	8 × 15	0.12	0.24	595	455	10 × 12.5	0.12	0.24	670	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	825	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	1060	845	12.5 × 15	0.070	0.14	985	815
820	821	10 × 25	0.055	0.11	1260	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	1700	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	2230	1990	16 × 25	0.030	0.060	2190	1800
3300	332	12.5 × 40	0.023	0.046	2460	2160	18 × 20	0.027	0.054	2090	1880
3900	392	16 × 31.5	0.022	0.044	2510	2220	18 × 25	0.025	0.050	2350	2060
4700	472	16 × 35.5	0.020	0.040	2770	2410	18 × 31.5	0.023	0.046	2720	2240
5600	562	16 × 40	0.019	0.038	3110	2530	18 × 35.5	0.022	0.044	2620	2350
6800	682	18 × 35.5	0.018	0.036	3050	2610					
8200	822	18 × 40	0.017	0.034	3300	2730					

V(Code) / Size Code / Item / Cap.(μF) / Code		25 (1E)									
		—					6				
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)	
			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	635	395
220	221	8 × 15	0.11	0.22	625	455	10 × 12.5	0.13	0.26	670	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	825	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	1060	810	12.5 × 15	0.070	0.14	985	785
560	561	10 × 25	0.055	0.11	1260	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	1440	1210	16 × 15	0.049	0.098	1340	1130
1000	102	12.5 × 25	0.036	0.072	1700	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	2230	1960	16 × 25	0.031	0.062	2190	1780
2200	222	12.5 × 40	0.024	0.048	2460	2120	18 × 20	0.028	0.056	2050	1840
2700	272	16 × 31.5	0.022	0.044	2510	2220	18 × 25	0.025	0.050	2350	2060
3300	332	16 × 35.5	0.020	0.040	2770	2410	18 × 31.5	0.023	0.046	2720	2240
3900	392	16 × 40	0.019	0.038	3110	2530	18 × 35.5	0.021	0.042	3050	2420
4700	472	18 × 40	0.018	0.036	3300	2660					

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

PM series

■Standard ratings

Cap.(μF)	Code	V(Code) / Size code / Item	35 (1V) — Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 10kHz~200kHz	Rated ripple (mArms) 105°C / 120Hz	35 (1V) 6 — Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 10kHz~200kHz	Rated ripple (mArms) 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	635	375
150	151	8 × 15	0.12	0.24	595	415	10 × 12.5	0.12	0.24	680	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	825	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	1260	955	12.5 × 15	0.060	0.12	1060	825
470	471	10 × 31.5	0.046	0.092	1450	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	1700	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	2230	1920	16 × 25	0.031	0.062	2190	1740
1500	152	12.5 × 40	0.024	0.048	2460	2120	18 × 20	0.028	0.056	2050	1840
1800	182	16 × 31.5	0.022	0.044	2510	2220	18 × 25	0.025	0.050	2350	2060
2200	222	16 × 35.5	0.020	0.040	2770	2410	18 × 31.5	0.023	0.046	2720	2240
2700	272	16 × 40	0.018	0.036	3110	2610	18 × 35.5	0.021	0.042	3050	2420
3300	332	18 × 40	0.017	0.034	3300	2730					

Cap.(μF)	Code	V(Code) / Size code / Item	50 (1H) — Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 10kHz~200kHz	Rated ripple (mArms) 105°C / 120Hz	50 (1H) 6 — Case size φD × L (mm)	Impedance (Ω) MAX. 20°C / 100kHz	Impedance (Ω) MAX. −10°C / 100kHz	Rated ripple (mArms) 105°C / 10kHz~200kHz	Rated ripple (mArms) 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	165	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	415	255						
82	820	8 × 15	0.17	0.34	505	320	10 × 12.5	0.18	0.36	530	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	755	455	10 × 15	0.13	0.26	755	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	945	635	12.5 × 15	0.095	0.19	845	605
220	221	10 × 25	0.075	0.15	1150	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	1720	1360	16 × 20	0.044	0.088	1550	1260
680	681	12.5 × 35.5	0.036	0.072	1900	1530	16 × 20	0.040	0.080	1630	1350
820	821	12.5 × 40	0.033	0.066	2120	1700	18 × 20	0.036	0.072	1810	1530
1000	102	16 × 31.5	0.030	0.060	2150	1830	18 × 25	0.033	0.066	2020	1730
1200	122	16 × 35.5	0.028	0.056	2320	1990	18 × 31.5	0.031	0.062	2140	1880
1500	152	16 × 40	0.026	0.052	2650	2170	18 × 31.5	0.029	0.058	2340	1990
1800	182	18 × 35.5	0.025	0.050	2620	2210					
2200	222	18 × 40	0.024	0.048	2790	2300					

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

PM series

■Standard ratings

Cap.(μF)	Code	V(Code)	63 (1J)								
		Size code	—				6				
		Item	Case size φD×L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)		Case size φD×L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)	
				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)	Code	V(Code)	80 (1K)								
		Size code	—				6				
		Item	Case size φD×L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)		Case size φD×L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)	
				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	150	58					
22	220		6.3×15	0.77	2.10	180	71					
27	270		6.3×15	0.63	1.70	220	80					
33	330		8×11.5	0.53	1.40	275	132					
39	390		8×15	0.46	1.20	300	156	10×12.5	0.49	1.30	380	155
47	470		8×15	0.39	1.10	360	175	10×12.5	0.42	1.10	410	174
56	560		8×20	0.34	0.92	490	208	10×15	0.36	0.97	500	202
68	680		10×20	0.28	0.76	570	264	12.5×15	0.31	0.84	520	249
82	820		10×20	0.25	0.68	620	284	12.5×15	0.27	0.73	560	273
100	101		10×25	0.21	0.57	795	347	12.5×15	0.23	0.62	605	308
120	121		10×31.5	0.18	0.49	870	406	16×15	0.20	0.54	663	444
150	151		10×31.5	0.15	0.41	955	459	16×15	0.18	0.47	699	484
180	181		12.5×25	0.13	0.35	1040	520	16×15	0.15	0.41	766	543
220	221		12.5×31.5	0.12	0.32	1160	595	18×15	0.13	0.35	881	643
270	271		12.5×31.5	0.10	0.27	1270	667	16×20	0.11	0.30	1240	742
330	331		12.5×35.5	0.088	0.24	1450	767	16×25	0.099	0.27	1440	874
390	391		12.5×40	0.078	0.21	1610	822	18×20	0.089	0.24	1450	908
470	471		16×31.5	0.069	0.19	1790	1150	18×25	0.080	0.22	1650	1060
560	561		16×35.5	0.062	0.17	2000	1300	18×31.5	0.072	0.19	1750	1210
680	681		16×40	0.055	0.15	2200	1470	18×31.5	0.065	0.18	1850	1300
820	821		18×35.5	0.049	0.13	2250	1590					
1000	102		18×40	0.044	0.12	2370	1790					

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

PM series

■Standard ratings

V(Code) / Size code / Item / Cap.(μF) / Code		100 (2A)										
		—					6					
		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)		Case size φD × L (mm)	Impedance (Ω) MAX.		Rated ripple (mArms)	
			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	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	150	57					
15	150	6.3 × 15	0.81	2.20	180	65					
18	180	6.3 × 15	0.67	1.80	220	73					
22	220	8 × 11.5	0.55	1.50	275	122					
27	270	8 × 15	0.47	1.30	300	146	10 × 12.5	0.50	1.40	380	145
33	330	8 × 15	0.38	1.00	360	169	10 × 12.5	0.42	1.10	410	166
39	390	8 × 20	0.33	0.89	490	202	10 × 15	0.36	0.97	500	193
47	470	10 × 20	0.28	0.76	570	252	12.5 × 15	0.31	0.84	520	239
56	560	10 × 20	0.24	0.65	620	274	12.5 × 15	0.27	0.73	560	258
68	680	10 × 25	0.21	0.57	795	326	12.5 × 15	0.23	0.62	605	289
82	820	10 × 31.5	0.18	0.49	870	386	16 × 15	0.19	0.51	681	433
100	101	10 × 31.5	0.15	0.41	955	438	16 × 15	0.17	0.46	719	475
120	121	12.5 × 25	0.13	0.35	1040	519	16 × 15	0.14	0.38	793	531
150	151	12.5 × 25	0.11	0.30	1120	553	18 × 15	0.12	0.32	917	635
180	181	12.5 × 31.5	0.098	0.26	1270	641	16 × 20	0.11	0.30	1240	706
220	221	12.5 × 35.5	0.087	0.23	1450	730	16 × 25	0.093	0.25	1440	854
270	271	12.5 × 40	0.072	0.19	1610	843	18 × 20	0.080	0.22	1450	918
330	331	16 × 31.5	0.062	0.17	1790	1160	18 × 25	0.070	0.19	1650	1080
390	391	16 × 35.5	0.053	0.14	2000	1340	18 × 31.5	0.062	0.17	1850	1240
470	471	16 × 40	0.047	0.13	2200	1530	18 × 35.5	0.056	0.15	1970	1410
560	561	18 × 35.5	0.041	0.11	2250	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.

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

※Rated Ripple (mArms) at 105°C 120Hz