ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

PM series — Low Impedance, High Reliability

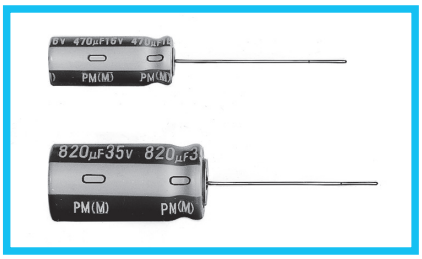
Low Impedance | Long Life | Anti-Solvent Feature (Through 100V only)

- 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.
- Compliant to the RoHS directive (2011/65/EU).

PM

Smaller

PW



■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105°C (6.3 to 100V), −40 to +105°C (160 to 400V), −25 to +105°C (450V)
Rated Voltage Range	6.3 to 450V
Rated Capacitance Range	0.47 to 15000μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	Rated Voltage (V): 6.3 to 100 / 160 to 450 Leakage current: After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater. / CV ≦ 1000 : I = 0.1CV+40 (μA) max. CV > 1000 : I = 0.04CV+100 (μA) max.
Tangent of loss angle (tan δ)	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. Measurement frequency : 120Hz at 20°C

Rated Voltage (V)	6.3	10	16	25	35	50	63 to 100	160 to 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 (120Hz)

Rated voltage (V)		6.3 · 10	16	25 · 35	50 to 100	160 · 200	250	315 · 350	400	450
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

The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 5000 hours (2000 hours for φD=5 and 6.3, 3000 hours for φD=8) at 105°C, the peak voltage shall not exceed the rated voltage.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

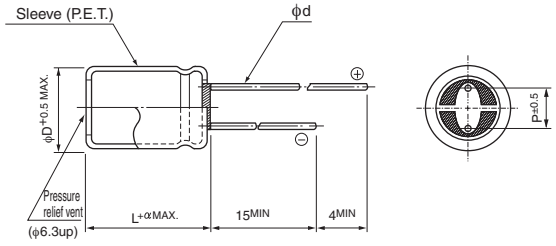
Shelf Life

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

Capacitance change	Within ±20% of the initial capacitance value
tan δ	150% or less than the initial specified value
Leakage current	Less than or equal to the 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. φ d = 0.8mm.

• Please refer to page 20 about the end seal configuration.

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

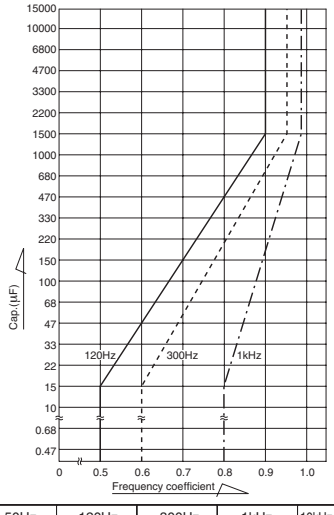
Type	Code
Small Dia	—
Low Profile	6

Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (470μF)
Rated voltage (25V)
Series name
Type

※Configuration

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

● Frequency coefficient of rated ripple current

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

160 to 450V	50Hz	120Hz	300Hz	1kHz	10kHz or more
	0.80	1.00	1.25	1.40	1.60

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

●Dimension table in next page.

PM series

■Dimensions

φD×L (mm)

Cap.(μF) \ V(Code) / Size code / 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 to 450V products are shown in 204 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 to 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 to 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 to 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 to 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 to 200kHz	105°C / 120Hz		20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 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 to 200kHz	105°C / 120Hz		20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 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

V(Code) / Size code / Item / Code / Cap.(μF)		35 (1V)									
		—					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 to 200kHz	105°C / 120Hz		20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 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	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					

V(Code) / Size code / Item / Code / Cap.(μF)		50 (1H)									
		—					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 to 200kHz	105°C / 120Hz		20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 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	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

V(Code) / Size code / Item / Code / Cap.(μF)		63 (1J)									
		—					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 to 200kHz	105°C / 120Hz		20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 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					

V(Code) / Size code / Item / Code / Cap.(μF)		80 (1K)									
		—					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 to 200kHz	105°C / 120Hz		20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 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

Cap.(μF)	Code	V(Code)	100 (2A)									
		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 to 200kHz	105°C / 120Hz		20°C / 100kHz	−10°C / 100kHz	105°C / 10kHz to 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.

Cap.(μF)	Code	V(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 current (mArms) at 105°C 120Hz

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UPM0J103MHD UPM0J103MHD6 UPM0J121MDD UPM0J182MPD UPM0J221MED UPM0J222MHD6 UPM0J222MHD6AA UPM0J101MDD UPM0J102MHD6 UPM0J102MPD UPM0J151MED UPM0J152MHD6 UPM0J152MPD UPM0J122MHD6 UPM0J122MPD UPM0J122MPD1TD UPM0J123MHD UPM0J222MPD UPM0J271MED UPM0J272MHD UPM0J272MHD1AA UPM0J392MHD UPM0J392MHD6 UPM0J471MPD UPM0J471MPD6 UPM0J682MHD UPM0J682MHD6 UPM0J682MHD6AA UPM0J821MPD UPM0J821MPD6 UPM1A122MPD UPM1A151MED UPM1A152MHD6 UPM1A331MPD UPM1A332MHD UPM0J153MHD UPM0J181MED UPM0J182MHD6 UPM0J332MHD UPM0J332MHD6 UPM0J391MPD UPM0J681MPD UPM0J681MPD6 UPM0J681MPD6TD UPM1A121MED UPM1A122MHD6 UPM1A122MHD6TO UPM0J272MHD6 UPM0J331MED UPM0J561MPD6 UPM0J562MHD UPM0J562MHD6 UPM1A101MED1TD UPM1A102MHD6 UPM1A102MHD6TO UPM1A102MPD UPM1A102MPD1TD UPM1A103MHD UPM1A221MED UPM1A222MHD UPM1A222MHD1CV UPM1A222MHD1TO UPM1A222MHD6 UPM0J472MHD UPM0J472MHD6 UPM0J561MPD UPM0J822MHD UPM0J822MHD6 UPM1A101MED UPM1A152MPD UPM1A181MED UPM1A182MHD UPM1A182MHD6 UPM1A332MHD6 UPM1A332MHD6TN UPM1A391MPD UPM1A391MPD6 UPM1A561MPD UPM1A561MPD6 UPM1A562MHD UPM1A562MHD6 UPM1A822MHD UPM1A822MHD6 UPM1C101MED UPM1C101MED1TA UPM1C101MED1TD UPM1C182MHD UPM1C182MHD6 UPM1C221MPD UPM1C332MHD UPM1C332MHD1AA UPM1C332MHD6 UPM1C391MPD UPM1C391MPD6 UPM1A271MED UPM1A271MED1TD UPM1A272MHD UPM1A272MHD6 UPM1A471MPD6 UPM1A472MHD