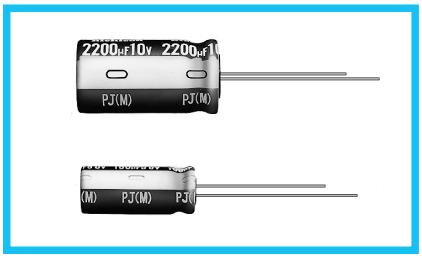
ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

PJ Low Impedance, For Switching Power Supplies series

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



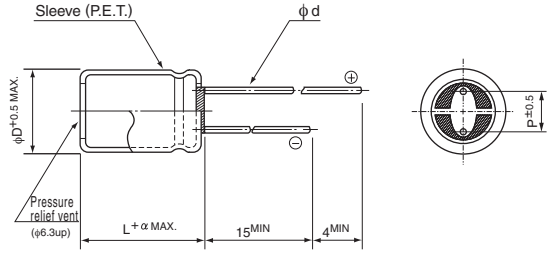
- Low impedance and high reliability withstanding 5000 hours load life at +105˚C (3000 / 2000 hours for smaller case sizes as specified below).
- Capacitance ranges available based on the numerical values in E12 series under JIS.
- Ideally suited for use of switching power supplies.
- Compliant to the RoHS directive (2011/65/EU).

PJ → Smaller → PS

■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)	120Hz, 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
	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.									
Stability at Low Temperature	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	—	—	—	—	—
	120Hz									
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 specified values for the endurance characteristics listed above.	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) 1.0
	(φD ≧ 10) 1.5

(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	J	1	E	4	7	1	M	P	D	

- 12: Size code
- 10 11: Configuration※
- 9: Capacitance tolerance (±20%)
- 5 6 7 8: Rated capacitance (470μF)
- 4: Rated voltage (25V)
- 2 3: Series name
- 1: Type

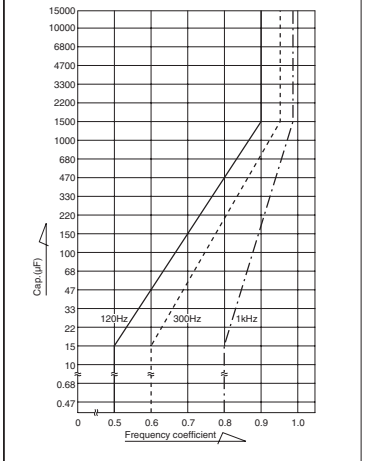
Type	Code
Small Dia	—
Low Profile	6

Size code

※ 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 pages.

PJ series

■Dimensions

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									φD × L (mm)
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							φD × L (mm)
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 233 page.

PJ series

■Standard Ratings

V (Code) / Size code / Item / Cap. (μF) / Code		6.3 (0J)									
		—					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
100	101	5 × 11	1.40	3.50	150	99					
120	121	5 × 11	1.10	2.80	175	115					
150	151	6.3 × 11	0.78	2.10	225	155					
180	181	6.3 × 11	0.60	1.50	250	175					
220	221	6.3 × 11	0.48	1.20	285	205					
270	271	6.3 × 15	0.39	1.00	370	275					
330	331	6.3 × 15	0.32	0.80	405	310					
390	391	8 × 11.5	0.27	0.68	445	345					
470	471	8 × 15	0.22	0.55	550	435	10 × 12.5	0.23	0.58	575	455
560	561	8 × 15	0.19	0.48	595	480	10 × 12.5	0.21	0.53	600	485
680	681	8 × 20	0.16	0.40	730	605	10 × 15	0.18	0.45	700	580
820	821	8 × 20	0.13	0.33	795	670	10 × 15	0.15	0.38	750	635
1000	102	10 × 20	0.12	0.30	950	820	12.5 × 15	0.13	0.33	890	765
1200	122	10 × 20	0.10	0.25	1020	895	12.5 × 15	0.12	0.30	950	835
1500	152	10 × 25	0.084	0.21	1220	1090	12.5 × 15	0.10	0.25	1020	915
1800	182	10 × 31.5	0.078	0.20	1370	1230	16 × 15	0.084	0.21	1270	1140
2200	222	10 × 31.5	0.066	0.17	1470	1320	16 × 15	0.078	0.20	1340	1200
2700	272	12.5 × 25	0.051	0.14	1590	1430	18 × 15	0.072	0.18	1500	1350
3300	332	12.5 × 25	0.045	0.11	1710	1530	18 × 15	0.065	0.16	1600	1440
3900	392	12.5 × 31.5	0.037	0.093	1910	1710	16 × 20	0.056	0.14	1720	1540
4700	472	12.5 × 35.5	0.034	0.085	2100	1890	18 × 20	0.050	0.13	1920	1720
5600	562	12.5 × 40	0.031	0.078	2270	2040	18 × 20	0.047	0.12	1980	1780
6800	682	16 × 31.5	0.029	0.073	2370	2130	18 × 25	0.039	0.098	2210	1980
8200	822	16 × 35.5	0.027	0.068	2550	2290	18 × 31.5	0.031	0.078	2390	2150
10000	103	16 × 40	0.025	0.063	2750	2470	18 × 31.5	0.028	0.070	2490	2240
12000	123	18 × 35.5	0.023	0.058	2820	2530					
15000	153	18 × 40	0.022	0.055	2960	2660					

V (Code) / Size code / Item / Cap.(μF) / Code		10 (1A)									
		—					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
68	680	5 × 11	1.30	3.30	155	97					
82	820	5 × 11	1.10	2.80	175	110					
100	101	6.3 × 11	0.84	2.10	210	135					
120	121	6.3 × 11	0.72	1.80	235	160					
150	151	6.3 × 11	0.55	1.40	265	185					
180	181	6.3 × 11	0.46	1.20	290	205					
220	221	6.3 × 15	0.38	0.95	370	270					
270	271	6.3 × 15	0.31	0.78	405	300					
330	331	8 × 11.5	0.26	0.65	460	350					
390	391	8 × 15	0.22	0.55	550	430	10 × 12.5	0.24	0.60	555	430
470	471	8 × 15	0.19	0.48	595	475	10 × 12.5	0.21	0.53	600	475
560	561	8 × 20	0.16	0.40	730	590	10 × 15	0.18	0.45	700	565
680	681	8 × 20	0.13	0.33	795	660	10 × 15	0.14	0.35	770	635
820	821	10 × 20	0.11	0.28	985	835	12.5 × 15	0.13	0.33	920	780
1000	102	10 × 20	0.096	0.24	1060	915	12.5 × 15	0.10	0.25	1040	895
1200	122	10 × 25	0.078	0.20	1280	1120	12.5 × 15	0.096	0.24	1060	930
1500	152	10 × 31.5	0.072	0.18	1440	1290	16 × 15	0.078	0.20	1330	1190
1800	182	12.5 × 20	0.057	0.14	1470	1320	16 × 15	0.072	0.18	1420	1270
2200	222	12.5 × 25	0.045	0.11	1710	1530	18 × 15	0.060	0.15	1600	1440
2700	272	12.5 × 31.5	0.036	0.090	1940	1740	16 × 20	0.051	0.13	1740	1560
3300	332	12.5 × 35.5	0.032	0.080	2180	1960	16 × 20	0.045	0.11	1850	1660
3900	392	12.5 × 40	0.030	0.075	2360	2120	18 × 20	0.041	0.10	2050	1840
4700	472	16 × 31.5	0.028	0.070	2420	2170	18 × 25	0.035	0.088	2250	2020
5600	562	16 × 35.5	0.026	0.065	2610	2340	18 × 25	0.033	0.083	2340	2100
6800	682	16 × 35.5	0.024	0.060	2680	2410	18 × 31.5	0.027	0.068	2540	2280
8200	822	16 × 40	0.023	0.058	2820	2530	18 × 35.5	0.025	0.063	2690	2420
10000	103	18 × 40	0.021	0.053	3040	2730					

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

PJ 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	1.30	3.30	155	92					
56	560	5 × 11	1.10	2.80	175	105					
68	680	6.3 × 11	0.78	2.00	220	135					
82	820	6.3 × 11	0.66	1.70	240	155					
100	101	6.3 × 11	0.55	1.40	265	175					
120	121	6.3 × 11	0.45	1.10	290	195					
150	151	6.3 × 15	0.37	0.93	375	260					
180	181	6.3 × 15	0.31	0.78	405	285					
220	221	8 × 11.5	0.26	0.65	460	335					
270	271	8 × 15	0.22	0.55	550	410	10 × 12.5	0.22	0.55	575	430
330	331	8 × 15	0.18	0.45	595	455	10 × 12.5	0.18	0.45	625	480
390	391	8 × 20	0.16	0.40	730	570	10 × 15	0.16	0.40	730	570
470	471	8 × 20	0.14	0.35	770	615	10 × 15	0.14	0.35	770	615
560	561	10 × 20	0.12	0.30	950	770	12.5 × 15	0.13	0.33	920	745
680	681	10 × 20	0.10	0.25	1020	845	12.5 × 15	0.11	0.28	985	815
820	821	10 × 25	0.084	0.21	1220	1030	12.5 × 15	0.096	0.24	1060	895
1000	102	10 × 31.5	0.072	0.18	1410	1210	16 × 15	0.084	0.21	1270	1090
1200	122	12.5 × 20	0.060	0.15	1430	1250	16 × 15	0.072	0.18	1390	1220
1500	152	12.5 × 25	0.048	0.12	1660	1490	18 × 15	0.066	0.17	1560	1400
1800	182	12.5 × 31.5	0.039	0.10	1880	1690	16 × 20	0.054	0.14	1700	1530
2200	222	12.5 × 31.5	0.034	0.085	2010	1800	16 × 20	0.048	0.12	1800	1620
2700	272	12.5 × 35.5	0.031	0.078	2220	1990	16 × 25	0.040	0.10	2010	1800
3300	332	12.5 × 40	0.028	0.070	2410	2160	18 × 20	0.039	0.10	2090	1880
3900	392	16 × 31.5	0.027	0.068	2470	2220	18 × 25	0.034	0.085	2290	2060
4700	472	16 × 35.5	0.025	0.063	2680	2410	18 × 31.5	0.028	0.070	2490	2240
5600	562	16 × 40	0.024	0.060	2820	2530	18 × 35.5	0.027	0.068	2620	2350
6800	682	18 × 35.5	0.022	0.055	2900	2610					
8200	822	18 × 40	0.021	0.053	3040	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	1.30	3.30	155	88					
39	390	5 × 11	1.10	2.80	175	100					
47	470	6.3 × 11	0.84	2.10	210	125					
56	560	6.3 × 11	0.72	1.80	235	140					
68	680	6.3 × 11	0.57	1.40	260	160					
82	820	6.3 × 11	0.47	1.20	285	180					
100	101	6.3 × 15	0.39	0.98	370	245					
120	121	6.3 × 15	0.32	0.80	405	275					
150	151	8 × 11.5	0.26	0.65	460	320					
180	181	8 × 15	0.22	0.55	550	390	10 × 12.5	0.24	0.60	555	395
220	221	8 × 15	0.18	0.45	625	455	10 × 12.5	0.21	0.53	600	435
270	271	8 × 20	0.15	0.38	750	560	10 × 15	0.18	0.45	700	525
330	331	8 × 20	0.13	0.33	795	610	10 × 15	0.15	0.38	750	575
390	391	10 × 20	0.11	0.28	985	770	12.5 × 15	0.13	0.33	920	720
470	471	10 × 20	0.10	0.25	1020	810	12.5 × 15	0.11	0.28	985	785
560	561	10 × 25	0.084	0.21	1220	990	12.5 × 15	0.10	0.25	1060	860
680	681	10 × 31.5	0.072	0.18	1420	1180	16 × 15	0.084	0.21	1270	1050
820	821	12.5 × 20	0.059	0.15	1430	1210	16 × 15	0.079	0.20	1340	1130
1000	102	12.5 × 25	0.048	0.12	1660	1430	18 × 15	0.066	0.17	1520	1310
1200	122	12.5 × 25	0.043	0.11	1760	1550	18 × 15	0.061	0.15	1600	1400
1500	152	12.5 × 31.5	0.035	0.088	1980	1780	16 × 20	0.050	0.13	1770	1590
1800	182	12.5 × 35.5	0.032	0.080	2180	1960	16 × 25	0.041	0.10	1980	1780
2200	222	12.5 × 40	0.029	0.073	2360	2120	18 × 20	0.040	0.10	2050	1840
2700	272	16 × 31.5	0.027	0.068	2470	2220	18 × 25	0.034	0.085	2290	2060
3300	332	16 × 35.5	0.025	0.063	2680	2410	18 × 31.5	0.029	0.073	2490	2240
3900	392	16 × 40	0.023	0.058	2820	2530	18 × 35.5	0.026	0.065	2690	2420
4700	472	18 × 40	0.022	0.055	2960	2660					

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

PJ series

■Standard Ratings

Cap. (μF)	Code	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
35 (1V)						
		—				
22	220	5 × 11	1.30	3.30	160	85
27	270	5 × 11	1.00	2.50	180	99
33	330	6.3 × 11	0.78	2.00	225	125
39	390	6.3 × 11	0.66	1.70	245	140
47	470	6.3 × 11	0.54	1.40	270	160
56	560	6.3 × 11	0.45	1.10	295	180
68	680	6.3 × 15	0.37	0.93	370	230
82	820	6.3 × 15	0.31	0.78	415	265
100	101	8 × 11.5	0.26	0.65	460	305
120	121	8 × 15	0.22	0.55	550	370
150	151	8 × 15	0.18	0.45	595	415
180	181	8 × 20	0.16	0.40	730	520
220	221	8 × 20	0.13	0.33	795	580
270	271	10 × 20	0.11	0.28	985	735
330	331	10 × 20	0.096	0.24	1060	810
390	391	10 × 25	0.084	0.21	1220	955
470	471	10 × 31.5	0.072	0.18	1420	1130
560	561	12.5 × 20	0.059	0.15	1430	1160
680	681	12.5 × 25	0.048	0.12	1660	1370
820	821	12.5 × 25	0.042	0.11	1760	1490
1000	102	12.5 × 31.5	0.035	0.088	1980	1710
1200	122	12.5 × 35.5	0.031	0.078	2180	1920
1500	152	12.5 × 40	0.029	0.073	2360	2120
1800	182	16 × 31.5	0.027	0.068	2470	2220
2200	222	16 × 35.5	0.024	0.060	2680	2410
2700	272	16 × 40	0.022	0.055	2900	2610
3300	332	18 × 40	0.021	0.053	3040	2730
		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
		10 × 12.5	0.24	0.60	555	375
		10 × 12.5	0.20	0.50	625	435
		10 × 15	0.18	0.45	700	500
		10 × 15	0.14	0.35	770	560
		12.5 × 15	0.13	0.33	920	690
		12.5 × 15	0.10	0.25	1020	780
		12.5 × 15	0.096	0.24	1060	825
		16 × 15	0.084	0.21	1270	1010
		16 × 15	0.075	0.19	1360	1100
		18 × 15	0.066	0.17	1540	1270
		18 × 15	0.060	0.15	1620	1370
		16 × 20	0.050	0.13	1770	1530
		16 × 25	0.041	0.10	1980	1740
		18 × 20	0.040	0.10	2050	1840
		18 × 25	0.034	0.085	2290	2060
		18 × 31.5	0.028	0.070	2490	2240
		18 × 35.5	0.026	0.065	2690	2420

Cap. (μF)	Code	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
50 (1H)						
		—				
0.47	R47	5 × 11	31.0	80.0	22	11
0.68	R68	5 × 11	21.0	55.0	28	14
1	010	5 × 11	14.0	38.0	36	18
1.5	1R5	5 × 11	9.80	28.0	45	22
2.2	2R2	5 × 11	6.50	18.0	54	27
3.3	3R3	5 × 11	4.60	12.0	66	33
4.7	4R7	5 × 11	3.10	7.80	81	40
6.8	6R8	5 × 11	2.50	6.30	91	45
10	100	5 × 11	2.00	5.00	115	57
12	120	5 × 11	1.70	4.30	125	62
15	150	5 × 11	1.30	3.30	145	72
18	180	5 × 11	1.10	2.80	155	79
22	220	6.3 × 11	0.91	2.30	195	100
27	270	6.3 × 11	0.74	1.90	215	115
33	330	6.3 × 11	0.60	1.50	240	135
39	390	6.3 × 11	0.50	1.30	260	150
47	470	6.3 × 15	0.42	1.10	330	195
56	560	6.3 × 15	0.35	0.88	360	220
68	680	8 × 11.5	0.28	0.70	410	255
82	820	8 × 15	0.22	0.55	500	320
100	101	8 × 20	0.18	0.45	620	410
120	121	8 × 20	0.16	0.40	670	455
150	151	10 × 20	0.13	0.33	820	570
180	181	10 × 20	0.11	0.28	890	635
220	221	10 × 25	0.098	0.25	1040	760
270	271	10 × 31.5	0.085	0.21	1200	900
330	331	10 × 31.5	0.072	0.18	1300	995
390	391	12.5 × 25	0.053	0.13	1440	1120
470	471	12.5 × 25	0.048	0.12	1500	1190
560	561	12.5 × 31.5	0.040	0.10	1680	1360
680	681	12.5 × 35.5	0.036	0.090	1850	1530
820	821	12.5 × 40	0.033	0.083	2010	1700
1000	102	16 × 31.5	0.030	0.075	2120	1830
1200	122	16 × 35.5	0.028	0.070	2260	1990
1500	152	16 × 40	0.026	0.065	2410	2170
1800	182	18 × 35.5	0.025	0.063	2460	2210
2200	222	18 × 40	0.024	0.060	2560	2300
		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
		10 × 12.5	0.23	0.58	510	330
		10 × 15	0.21	0.53	580	385
		10 × 15	0.17	0.43	640	435
		12.5 × 15	0.14	0.35	785	545
		12.5 × 15	0.12	0.31	845	605
		12.5 × 15	0.10	0.25	920	670
		16 × 15	0.091	0.23	1120	840
		16 × 15	0.078	0.20	1210	925
		16 × 15	0.072	0.18	1270	990
		18 × 15	0.060	0.15	1470	1170
		16 × 20	0.053	0.13	1550	1260
		16 × 20	0.048	0.12	1630	1350
		18 × 20	0.043	0.11	1810	1530
		18 × 25	0.036	0.090	2000	1730
		18 × 31.5	0.031	0.078	2140	1880
		18 × 31.5	0.029	0.073	2220	1990

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

PJ series

■Standard Ratings

Cap. (μF)	Code	63 (1J) — 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	63 (1J) 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
10	100	5 × 11	1.60	4.00	135	67					
12	120	5 × 11	1.40	3.50	145	72					
15	150	6.3 × 11	1.10	2.80	185	92					
18	180	6.3 × 11	0.95	2.40	195	100					
22	220	6.3 × 11	0.78	2.00	215	110					
27	270	6.3 × 11	0.64	1.60	240	130					
33	330	6.3 × 15	0.52	1.30	305	170					
39	390	6.3 × 15	0.45	1.10	330	190					
47	470	8 × 11.5	0.37	0.93	365	215					
56	560	8 × 15	0.31	0.78	450	275	10 × 12.5	0.34	0.85	450	275
68	680	8 × 15	0.26	0.65	500	315	10 × 12.5	0.28	0.70	495	310
82	820	8 × 20	0.22	0.55	600	385	10 × 15	0.24	0.60	580	375
100	101	10 × 20	0.18	0.45	750	495	12.5 × 15	0.20	0.50	695	460
120	121	10 × 20	0.15	0.38	820	555	12.5 × 15	0.18	0.45	750	510
150	151	10 × 25	0.13	0.33	950	665	12.5 × 15	0.14	0.35	845	590
180	181	10 × 31.5	0.11	0.28	1110	790	16 × 15	0.12	0.30	1050	750
220	221	12.5 × 20	0.094	0.24	1140	835	16 × 15	0.10	0.25	1120	820
270	271	12.5 × 25	0.081	0.20	1340	1000	18 × 15	0.088	0.22	1290	965
330	331	12.5 × 25	0.072	0.18	1420	1090	18 × 15	0.078	0.20	1410	1080
390	391	12.5 × 31.5	0.059	0.15	1620	1260	16 × 20	0.070	0.18	1500	1170
470	471	12.5 × 35.5	0.052	0.13	1780	1420	16 × 25	0.063	0.16	1700	1350
560	561	12.5 × 40	0.047	0.12	1950	1580	18 × 20	0.058	0.15	1730	1400
680	681	16 × 31.5	0.043	0.11	2050	1700	18 × 25	0.051	0.13	1940	1610
820	821	16 × 35.5	0.040	0.10	2220	1880	18 × 31.5	0.043	0.12	2110	1780
1000	102	16 × 40	0.037	0.093	2370	2050	18 × 35.5	0.040	0.10	2280	1970
1200	122	18 × 40	0.034	0.085	2510	2210					

Cap. (μF)	Code	80 (1K) — 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	80 (1K) 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
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.

PJ series

■Standard Ratings

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)	
Cap. (μF)	Code		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	114	57					
15	150	6.3 × 15	0.81	2.20	131	65					
18	180	6.3 × 15	0.67	1.80	155	80					
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.

V		160		200		250		315		350		400		450	
Cap. (μF)	Code	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				
100	101	16 × 35.5	330	18 × 40	345	18 × 40	345							Case size	※1

※1 Rated ripple current (mArms) at 105˚C 120Hz