

ALUMINUM ELECTROLYTIC CAPACITORS



PJL Series NEW

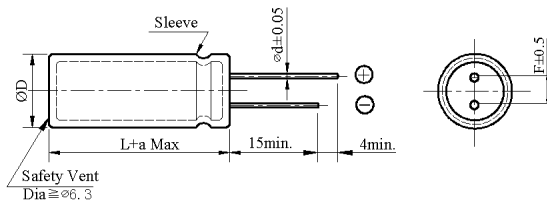
- Downsize and high ripple current
- Load life 12,000 to 15,000 hours at 105°C
- For electronic ballast circuits and other long life applications
- Applied to lighting products



◆ SPECIFICATIONS

Item	Performance Characteristics														
Category Temperature Range	-40~ +105°C														
Working Voltage Range	160~ 450dc														
Capacitance Range	6.8~680μF														
Capacitance Tolerance	±20% (at 25°C and 120Hz)														
Dissipation Factor (tanδ) (at 25°C, 120Hz)	<table border="1"> <tr> <td>Rated Voltage (V)</td> <td>160</td> <td>200</td> <td>250</td> <td>400</td> <td>420</td> <td>450</td> </tr> <tr> <td>tanδ(Max)</td> <td>0.20</td> <td>0.20</td> <td>0.20</td> <td>0.24</td> <td>0.24</td> <td>0.24</td> </tr> </table>	Rated Voltage (V)	160	200	250	400	420	450	tanδ(Max)	0.20	0.20	0.20	0.24	0.24	0.24
	Rated Voltage (V)	160	200	250	400	420	450								
tanδ(Max)	0.20	0.20	0.20	0.24	0.24	0.24									
Leakage Current	$I=0.03CV + 10\mu A$ I : Leakage current (μA) C : Rated capacitance (μF) V : Rated voltage (V) Impress the rated voltage for 2 minutes														
Low Temperature Characteristics Impedance Ratio(MAX)	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>160~250</td> <td>400</td> <td>420 ~ 450</td> </tr> <tr> <td>Z(-40°C)/Z(+20°C)</td> <td>10</td> <td>8</td> <td>6</td> </tr> </table> <p style="text-align: right;">(at 120Hz)</p>	Rated voltage (V)	160~250	400	420 ~ 450	Z(-40°C)/Z(+20°C)	10	8	6						
Rated voltage (V)	160~250	400	420 ~ 450												
Z(-40°C)/Z(+20°C)	10	8	6												
Endurance	The following specifications shall be satisfied when the capacitors are restored to 25°C after subjected to DC voltage with the rated ripple current is applied for 12,000~ 15,000 hours at 105°C. <table border="1"> <tr> <td>Capacitance change</td> <td>≦ ±20% of the initial value</td> <td>Size</td> <td>Life time (hours)</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≦ 200% of the specified value</td> <td>≧ Φ10-12.5</td> <td>12,000</td> </tr> <tr> <td>Leakage current</td> <td>≦ specified value</td> <td>≧ Φ16</td> <td>15,000</td> </tr> </table>	Capacitance change	≦ ±20% of the initial value	Size	Life time (hours)	Dissipation factor(tanδ)	≦ 200% of the specified value	≧ Φ10-12.5	12,000	Leakage current	≦ specified value	≧ Φ16	15,000		
Capacitance change	≦ ±20% of the initial value	Size	Life time (hours)												
Dissipation factor(tanδ)	≦ 200% of the specified value	≧ Φ10-12.5	12,000												
Leakage current	≦ specified value	≧ Φ16	15,000												
Shelf Life	The following requirements shall be satisfied when the capacitor are restored to 25°C after exposing them for 1,000 hours at 105°C without voltage applied. <table border="1"> <tr> <td>Capacitance change</td> <td>≦ ±20% of the initial value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≦ 200% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≦ 500% of the specified value</td> </tr> </table>	Capacitance change	≦ ±20% of the initial value	Dissipation factor(tanδ)	≦ 200% of the specified value	Leakage current	≦ 500% of the specified value								
Capacitance change	≦ ±20% of the initial value														
Dissipation factor(tanδ)	≦ 200% of the specified value														
Leakage current	≦ 500% of the specified value														
Others	Conforms to JIS-C-5101-4 (1998)														

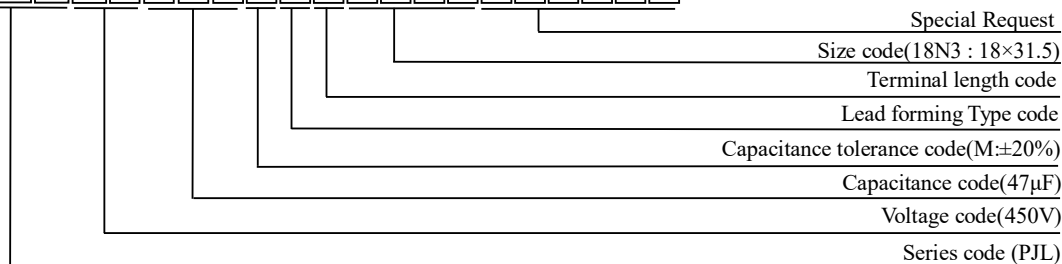
◆ DIMENSIONS (mm)



ΦD	10	12.5	16	18
ΦD	ΦD +0.5 Max			
Φd	0.6	0.6	0.8	0.8
F	5.0	5.0	7.5	7.5
a	L+1.5 Max	≦ 35 L+1.5Max ≧ 40 L+2.0 Max	L+1.5 Max	

◆ PART NUMBER SYSTEM(Example : 450V 47μF)

P J L 2 W 4 7 0 M N N 1 8 N 3





PJL Series

STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	Rated Ripple current (mA rms/ 105°C, 120Hz)	Part Number
160 (2C)	10	10×16	160	PJL2C100MNN1016
	22	10×16	225	PJL2C220MNN1016
	33	10×16	240	PJL2C330MNN1016
	39	10×16	245	PJL2C390MNN1016
	47	10×20	350	PJL2C470MNN1020
	56	10×20	315	PJL2C560MNN1020
	68	10×25	390	PJL2C680MNN1025
	82	10×25	415	PJL2C820MNN1025
	82	10×30	445	PJL2C820MNN1030
	100	12.5×20	575	PJL2C101MNN1220
	120	10×35	570	PJL2C121MNN1035
	120	14.5×20	675	PJL2C121MNN1420
	150	10×40	665	PJL2C151MNN1040
	150	10×45	695	PJL2C151MNN1045
	150	12.5×25	765	PJL2C151MNN1225
	180	10×50	785	PJL2C181MNN1050
	180	12.5×30	885	PJL2C181MNN1230
	180	14.5×25	890	PJL2C181MNN1425
	180	16×20	855	PJL2C181MNN1620
	220	16×25	1020	PJL2C221MNN1625
	220	18×20	990	PJL2C221MNN1820
	270	12.5×40	1190	PJL2C271MNN1240W
	270	12.5×45	1230	PJL2C271MNN1245W
	270	14.5×31.5	1170	PJL2C271MNN14N3
	270	14.5×35.5	1210	PJL2C271MNN14P1
	330	12.5×50	1400	PJL2C331MNN1250W
	330	14.5×40	1385	PJL2C331MNN1440
	330	16×31.5	1350	PJL2C331MNN16N3
	330	18×25	1290	PJL2C331MNN1825
	390	14.5×45	1545	PJL2C391MNN1445
	390	16×35.5	1500	PJL2C391MNN16P1
	470	14.5×50	1735	PJL2C471MNN1450
470	16×40	1700	PJL2C471MNN1640	
470	18×31.5	1660	PJL2C471MNN18N3	
470	18×35.5	1715	PJL2C471MNN18P1	
560	16×50	1920	PJL2C561MNN1650	
560	18×40	1905	PJL2C561MNN1840	
680	18×45	2130	PJL2C681MNN1845	
680	18×50	2145	PJL2C681MNN1850	
200 (2D)	10	10×16	160	PJL2D100MNN1016
	22	10×16	190	PJL2D220MNN1016
	27	10×16	200	PJL2D270MNN1016
	33	10×20	270	PJL2D330MNN1020
	47	10×20	290	PJL2D470MNN1020
	56	10×25	345	PJL2D560MNN1025
	68	10×30	405	PJL2D680MNN1030
	82	12.5×20	520	PJL2D820MNN1220
	100	10×35	520	PJL2D101MNN1035
	100	12.5×25	625	PJL2D101MNN1225
	100	14.5×20	615	PJL2D101MNN1420
	120	10×40	595	PJL2D121MNN1040
	120	10×45	620	PJL2D121MNN1045
	120	12.5×30	725	PJL2D121MNN1230
	120	16×20	695	PJL2D121MNN1620
	150	10×50	720	PJL2D151MNN1050
	150	12.5×35	860	PJL2D151MNN1235W
	150	14.5×25	810	PJL2D151MNN1425
	150	16×25	830	PJL2D151MNN1625
	180	14.5×31.5	955	PJL2D181MNN14N3
	180	16×25	925	PJL2D181MNN1625
	180	18×20	895	PJL2D181MNN1820

WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	Rated Ripple current (mA rms/ 105°C, 120Hz)	Part Number	
200 (2D)	220	12.5×40	1075	PJL2D221MNN1240W	
	220	12.5×45	1110	PJL2D221MNN1245W	
	220	14.5×35.5	1095	PJL2D221MNN14P1	
	220	18×25	1050	PJL2D221MNN1825	
	270	12.5×50	1265	PJL2D271MNN1250W	
	270	14.5×40	1250	PJL2D271MNN1440	
	270	14.5×45	1290	PJL2D271MNN1445	
	270	16×31.5	1220	PJL2D271MNN16N3	
	270	16×35.5	1250	PJL2D271MNN16P1	
	330	14.5×50	1450	PJL2D331MNN1450	
	330	16×40	1425	PJL2D331MNN1640	
	330	18×31.5	1395	PJL2D331MNN18N3	
	390	16×45	1575	PJL2D391MNN1645	
	390	18×35.5	1565	PJL2D391MNN18P1	
	470	16×50	1755	PJL2D471MNN1650	
	470	18×40	1745	PJL2D471MNN1840	
	470	18×45	1770	PJL2D471MNN1845	
	560	18×50	1945	PJL2D561MNN1850	
	220 (2P)	27	10×16	200	PJL2P270MNN1016
		39	10×20	265	PJL2P390MNN1020
		56	10×25	345	PJL2P560MNN1025
		56	10×30	370	PJL2P560MNN1030
		68	12.5×20	475	PJL2P680MNN1220
		82	10×35	470	PJL2P820MNN1035
82		14.5×20	555	PJL2P820MNN1420	
100		10×40	545	PJL2P101MNN1040	
100		10×45	565	PJL2P101MNN1045	
100		12.5×25	625	PJL2P101MNN1225	
120		10×50	645	PJL2P121MNN1050	
120		12.5×30	725	PJL2P121MNN1230	
120		14.5×25	725	PJL2P121MNN1425	
120		16×20	695	PJL2P121MNN1620	
150		12.5×35	860	PJL2P151MNN1235W	
150		16×25	845	PJL2P151MNN1625	
150		18×20	815	PJL2P151MNN1820	
180		12.5×40	975	PJL2P181MNN1240W	
180		12.5×45	1005	PJL2P181MNN1245W	
180		14.5×31.5	955	PJL2P181MNN14N3	
220		12.5×50	1145	PJL2P221MNN1250W	
220		14.5×35.5	1095	PJL2P221MNN14P1	
220		14.5×40	1130	PJL2P221MNN1440	
220		16×31.5	1100	PJL2P221MNN16N3	
220	18×25	1050	PJL2P221MNN1825		
270	14.5×45	1285	PJL2P271MNN1445		
270	14.5×50	1315	PJL2P271MNN1450		
270	16×35.5	1245	PJL2P271MNN16P1		
270	18×31.5	1260	PJL2P271MNN18N3		
330	16×40	1425	PJL2P331MNN1640		
330	16×45	1450	PJL2P331MNN1645		
330	18×35.5	1440	PJL2P331MNN18P1		
390	16×50	1600	PJL2P391MNN1650		
390	18×40	1590	PJL2P391MNN1840		
390	18×45	1620	PJL2P391MNN1845		
470	18×50	1785	PJL2P471MNN1850		
250 (2E)	10	10×16	150	PJL2E100MNN1016	
	22	10×16	185	PJL2E220MNN1016	
	33	10×20	240	PJL2E330MNN1020	
	47	10×25	315	PJL2E470MNN1025	
	47	10×30	340	PJL2E470MNN1030	
	56	12.5×20	430	PJL2E560MNN1220	
	68	10×35	430	PJL2E680MNN1035	

ALUMINUM ELECTROLYTIC CAPACITORS



PJL Series

STANDARD RATINGS

WV (Vdc)	Cap (µF)	Case Size (mm) ΦD×L	Rated Ripple current (mA rms/ 105°C, 120Hz)	Part Number
250 (2E)	68	14.5×20	505	PJL2E680MNN1420
	82	10×40	495	PJL2E820MNN1040
	82	10×45	515	PJL2E820MNN1045
	82	12.5×25	565	PJL2E820MNN1225
	82	16×20	565	PJL2E820MNN1620
	100	10×50	585	PJL2E101MNN1050
	100	12.5×30	660	PJL2E101MNN1230
	100	14.5×25	665	PJL2E101MNN1425
	100	16×20	635	PJL2E101MNN1620
	100	18×31.5	740	PJL2E101MNN18N3
	150	12.5×35	860	PJL2E151MNN1235W
	150	16×25	845	PJL2E151MNN1625
	150	18×20	815	PJL2E151MNN1820
	180	12.5×40	975	PJL2E181MNN1240W
	180	12.5×45	1005	PJL2E181MNN1245W
	180	14.5×31.5	955	PJL2E181MNN14N3
	220	12.5×50	1145	PJL2E221MNN1250W
	220	14.5×35.5	1095	PJL2E221MNN14P1
	220	14.5×40	1130	PJL2E221MNN1440
	220	16×31.5	1100	PJL2E221MNN16N3
	220	18×25	1050	PJL2E221MNN1825
	270	14.5×45	1285	PJL2E271MNN1445
	270	14.5×50	1315	PJL2E271MNN1450
	270	16×35.5	1245	PJL2E271MNN16P1
	270	18×31.5	1260	PJL2E271MNN18N3
	330	16×40	1425	PJL2E331MNN1640
	330	16×45	1450	PJL2E331MNN1645
	330	18×35.5	1440	PJL2E331MNN18P1
	390	16×50	1600	PJL2E391MNN1650
	390	18×40	1590	PJL2E391MNN1840
	390	18×45	1620	PJL2E391MNN1845
	470	18×50	1785	PJL2E471MNN1850
350 (2V)	12	10×16	135	PJL2V120MNN1016
	22	10×20	200	PJL2V220MNN1020
	27	10×25	240	PJL2V270MNN1025
	27	10×30	255	PJL2V270MNN1030
	33	12.5×20	330	PJL2V330MNN1220
	39	10×35	325	PJL2V390MNN1035
	47	10×40	375	PJL2V470MNN1040
	47	12.5×25	425	PJL2V470MNN1225
	47	14.5×20	420	PJL2V470MNN1420
	56	10×45	425	PJL2V560MNN1045
	56	12.5×30	495	PJL2V560MNN1230
	56	16×20	475	PJL2V560MNN1620
	68	10×50	485	PJL2V680MNN1050
	68	12.5×35	580	PJL2V680MNN1235W
	68	14.5×25	545	PJL2V680MNN1425
	68	18×20	550	PJL2V680MNN1820
	82	12.5×40	655	PJL2V820MNN1240W
	82	14.5×31.5	645	PJL2V820MNN14N3
	82	16×25	625	PJL2V820MNN1625
	100	12.5×45	750	PJL2V101MNN1245W
	100	12.5×50	770	PJL2V101MNN1250W
	100	14.5×35.5	740	PJL2V101MNN14P1
	100	16×31.5	740	PJL2V101MNN16N3
	100	18×25	710	PJL2V101MNN1825
	120	14.5×40	835	PJL2V121MNN1440
	120	14.5×45	860	PJL2V121MNN1445
	120	16×35.5	830	PJL2V121MNN16P1
	150	14.5×50	980	PJL2V151MNN1450
	150	16×40	960	PJL2V151MNN1640

WV (Vdc)	Cap (µF)	Case Size (mm) ΦD×L	Rated Ripple current (mA rms/ 105°C, 120Hz)	Part Number	
350 (2V)	150	16×45	975	PJL2V151MNN1645	
	150	18×31.5	940	PJL2V151MNN18N3	
	180	16×50	1090	PJL2V181MNN1650	
	180	18×35.5	1065	PJL2V181MNN18P1	
	180	18×40	1080	PJL2V181MNN1840	
	220	18×45	1210	PJL2V221MNN1845	
	220	18×50	1220	PJL2V221MNN1850	
	400 (2G)	6.8	10×16	150	PJL2G6R8MNN1016
		10	10×16	125	PJL2G100MNN1016
		15	10×20	150	PJL2G150MNN1020
		18	10×20	180	PJL2G180MNN1020
		22	12.5×20	210	PJL2G220MNN1220
27		10×30	255	PJL2G270MNN1030	
27		12.5×20	300	PJL2G270MNN1220	
33		10×35	300	PJL2G330MNN1035	
33		12.5×25	300	PJL2G330MNN1225	
39		10×40	340	PJL2G390MNN1040	
39		10×45	355	PJL2G390MNN1045	
39		12.5×25	390	PJL2G390MNN1225	
39		14.5×20	385	PJL2G390MNN1420	
47		12.5×30	455	PJL2G470MNN1230	
47		16×20	435	PJL2G470MNN1620	
56		10×50	440	PJL2G560MNN1050	
56		14.5×25	495	PJL2G560MNN1425	
56		18×20	500	PJL2G560MNN1820	
68	12.5×40	600	PJL2G680MNN1240W		
68	14.5×31.5	585	PJL2G680MNN14N3		
68	16×25	570	PJL2G680MNN1625		
82	12.5×45	680	PJL2G820MNN1245W		
82	12.5×50	700	PJL2G820MNN1250W		
82	14.5×35.5	670	PJL2G820MNN14P1		
82	16×31.5	670	PJL2G820MNN16N3		
82	18×25	640	PJL2G820MNN1825		
100	14.5×40	760	PJL2G101MNN1440		
100	14.5×45	785	PJL2G101MNN1445		
100	16×35.5	760	PJL2G101MNN16P1		
100	18×31.5	780	PJL2G101MNN18N3		
120	14.5×50	875	PJL2G121MNN1450		
120	16×40	860	PJL2G121MNN1640		
120	16×45	875	PJL2G121MNN1645		
120	18×31.5	840	PJL2G121MNN18N3		
120	18×35.5	870	PJL2G121MNN18P1		
150	16×50	995	PJL2G151MNN1650		
150	18×40	985	PJL2G151MNN1840		
150	18×45	1095	PJL2G151MNN1845		
220	18×50	1220	PJL2G221MNN1850		
420 (2S)	6.8	10×16	150	PJL2S6R8MNN1016	
	10	10×20	160	PJL2S100MNN1020	
	12	10×20	150	PJL2S120MNN1020	
	15	10×25	185	PJL2S150MNN1025	
	15	12.5×20	265	PJL2S150MNN1220	
	18	10×30	215	PJL2S180MNN1030	
	22	12.5×20	285	PJL2S220MNN1220	
	27	10×35	275	PJL2S270MNN1035	
	27	10×40	290	PJL2S270MNN1040	
	27	12.5×25	340	PJL2S270MNN1225	
	27	14.5×20	335	PJL2S270MNN1420	
	33	10×45	335	PJL2S330MNN1045	
	33	12.5×30	400	PJL2S330MNN1230	
	33	16×20	420	PJL2S330MNN1620	
	39	10×50	375	PJL2S390MNN1050	

ALUMINUM ELECTROLYTIC CAPACITORS



PJL Series

◆ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	Rated Ripple current (mA rms/ 105°C, 120Hz)	Part Number
420 (2S)	39	14.5×25	435	PJL2S390MNN1425
	47	12.5×35	505	PJL2S470MNN1235W
	47	16×25	500	PJL2S470MNN1625
	47	18×20	480	PJL2S470MNN1820
	56	12.5×40	570	PJL2S560MNN1240W
	56	12.5×45	590	PJL2S560MNN1245W
	56	14.5×31.5	590	PJL2S560MNN14N3
	68	12.5×50	670	PJL2S680MNN1250W
	68	14.5×35.5	640	PJL2S680MNN14P1
	68	14.5×40	660	PJL2S680MNN1440
	68	16×31.5	645	PJL2S680MNN16N3
	68	18×25	615	PJL2S680MNN1825
	82	18×31.5	730	PJL2S820MNN18N3
	100	14.5×50	845	PJL2S101MNN1450
	100	16×40	825	PJL2S101MNN1640
	100	16×45	840	PJL2S101MNN1645
	100	18×35.5	835	PJL2S101MNN18P1
	120	16×50	935	PJL2S121MNN1650
	120	18×40	930	PJL2S121MNN1840
	120	18×45	945	PJL2S121MNN1845
150	18×50	1060	PJL2S151MNN1850	
450 (2W)	6.8	10×16	105	PJL2W6R8MNN1016
	10	10×20	140	PJL2W100MNN1020
	12	10×20	150	PJL2W120MNN1020
	15	10×25	185	PJL2W150MNN1025
	15	12.5×20	200	PJL2W150MNN1220
	18	10×30	215	PJL2W180MNN1030
	18	12.5×20	255	PJL2W180MNN1220
	22	10×35	250	PJL2W220MNN1035
	22	12.5×20	250	PJL2W220MNN1220
	27	10×40	290	PJL2W270MNN1040

WV (Vdc)	Cap (μF)	Case Size (mm) ΦD×L	Rated Ripple current (mA rms/ 105°C, 120Hz)	Part Number
450 (2W)	27	10×45	305	PJL2W270MNN1045
	27	12.5×25	340	PJL2W270MNN1225
	27	14.5×20	335	PJL2W270MNN1420
	33	12.5×30	400	PJL2W330MNN1230
	33	14.5×25	400	PJL2W330MNN1425
	33	16×20	385	PJL2W330MNN1620
	39	10×50	375	PJL2W390MNN1050
	39	12.5×35	460	PJL2W390MNN1235W
	39	18×20	440	PJL2W390MNN1820
	47	12.5×40	525	PJL2W470MNN1240W
	47	14.5×31.5	515	PJL2W470MNN14N3
	47	16×25	500	PJL2W470MNN1625
	47	18×20	530	PJL2W470MNN1820
	56	12.5×45	590	PJL2W560MNN1245W
	56	14.5×35.5	580	PJL2W560MNN14P1
	56	16×31.5	585	PJL2W560MNN16N3
	56	18×25	560	PJL2W560MNN1825
	68	12.5×50	670	PJL2W680MNN1250
	68	14.5×40	660	PJL2W680MNN1440
	68	14.5×45	680	PJL2W680MNN1445
	68	16×35.5	660	PJL2W680MNN16P1
	68	18×31.5	680	PJL2W680MNN18N3
	82	16×40	750	PJL2W820MNN1640
	82	16×45	760	PJL2W820MNN1645
	82	18×31.5	730	PJL2W820MNN18N3
	100	16×50	855	PJL2W101MNN1650
	100	18×35.5	835	PJL2W101MNN18P1
	120	18×45	930	PJL2W121MNN1845
	120	18×45	945	PJL2W121MNN1845
	150	18×50	1060	PJL2W151MNN1850

◆ RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

Cap(μF)	Frequency (Hz)			
	120	1K	10K	100K
<100	1.00	1.75	2.25	2.50
≥100	1.00	1.67	2.05	2.25