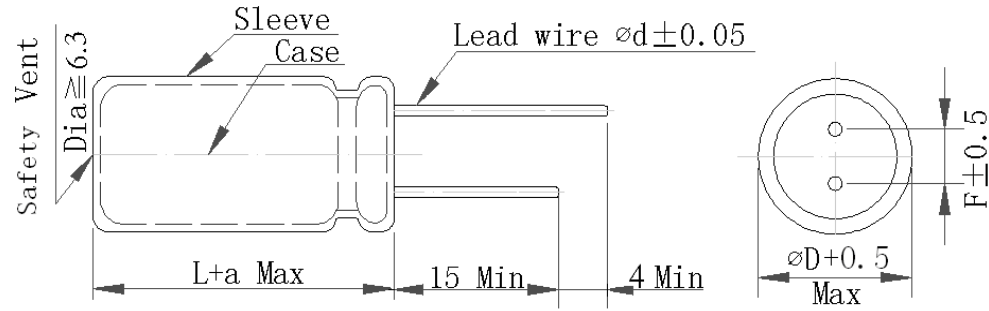




Aluminum Electrolytic Capacitor

Customer	SEMIC	SERIES	PY	NO.:521-790377	PUBLISH DATE	2017-9-27
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No.	ELITE Part No.	Customer Part No.	Capacitance (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp. Range (°C)	Tan δ @25°C (120 Hz) (Max)	Leakage Current (uA) (2min.)	Rated Ripple Current (mA rms) @125°C 100KHz	Endurance @ 125°C (Hours)	Dimensions (mm)					Appearance Drawing No
												ΦD	L	a	Φd	F	
1	PY1V471MNN1220R		470	± 20	35	44	-40 ~ +125	0.12	164.5	1480	2000	12.5	20	1.5	0.6	5.0	---

※ Test leakage current before testing dissipation factor and capacitance during the electric characteristic test.

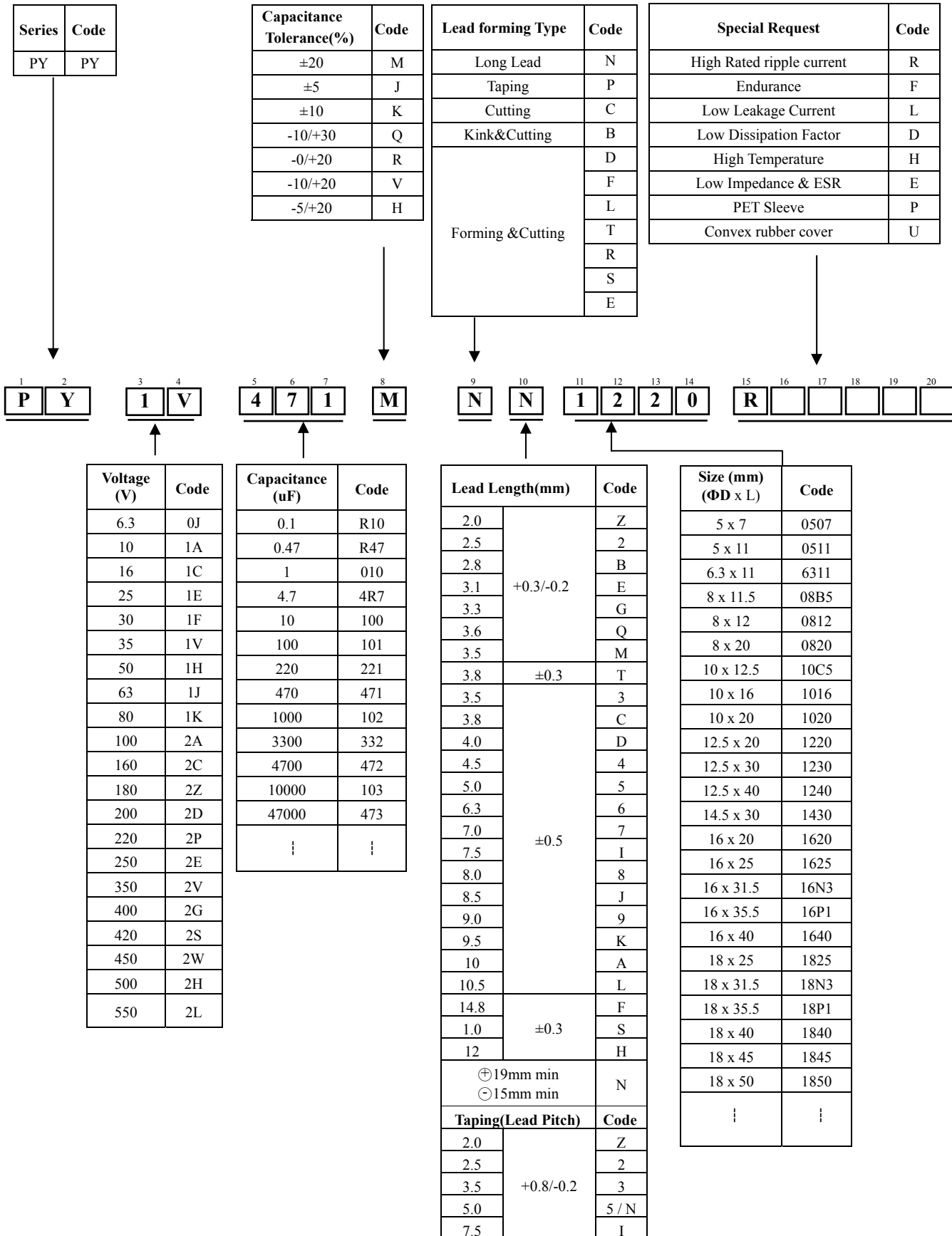
REMARKS:	APPROVED BY	CHECKED BY	PREPARED BY

Precautions in using Aluminum Electrolytic Capacitors

1. Standard DC electrolytic capacitors have polarity, which are indicated on the capacitors. They should not be used with polarity in reverse, if the polarity in circuit diagram is unknown, use non-polarised capacitors.
2. The capacitors should not be used at any temperature exceeding the range of the specified operating temperature.
3. If the capacitors are stored or left for a long time, aging should be conducted at the rated working voltage before application.
4. The capacitors are not suitable for circuits where sudden charge and discharge are frequently repeated.
5. Use the capacitors within the permissible ripple current range.
6. Do not impress voltage exceeding the capacitor's working voltage rating.
7. Be careful not to apply excessive force to the lead wires or terminals, which is subjected to the requirements of JIS-C-5101-4.
8. Soldering irons should be kept away from the sleeves of capacitors to avoid causing it to break.
9. Dip of flow soldering of the capacitors should be limited to 10 seconds at 260 degrees Celsius.
10. Take care when cleaning the circuit boards after soldering as some solvents that contain halogenated hydrocarbon solvents may have adverse effects on the capacitors.
11. When soldering lead wires or terminals of adjacent components, take care as if contacted, the capacitor sleeve may tear. Mount carefully so as not to bring adjacent components lead wires or terminals in contact with the sleeve, particularly when mounting on through-hole circuit boards.
12. The specification of products is followed by the characteristic (W) of JIS-C-5101-4. For methods of processing and testing, refer to JIS-C-5101-1.

PART NUMBER SYSTEM (RADIAL LEAD TYPE)

◆ Example: PY Series 470 uF 35V Φ 12.5 x 20 L



Marking

Each capacitor shall be marked with the following information.
(The Front)

(The Black)

PY(M) 125°C → Series & Tolerance & Max Operating Temperature

(C) 13 17 → Date Code

PET → Polyethylene terephthalate PET

 → Week of Manufacture

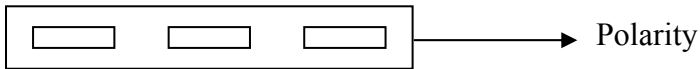
 → Year of Manufacture

 → Place of Manufacture

A:Taiwan

B:Thaland

C:China



Elite → Brand Name

470uF → Rated Capacitance

35V → Rated DC Working Voltage

PY SERIES

Test Item	Test Condition			Acceptance Criteria	
Temperature Cycle		Temperature (°C)	Dwell Time (Minutes)	1. No appearance defect 2. Capacitance change within $\pm 5\%$ 3. D.F. smaller than specification value 4. Leakage current smaller than specification value	
	One Cycle	Rated low category temperature ± 3	30 ± 3		
		+25°C	3MAX		
		Rated high category temperature ± 2	30 ± 3		
		+25°C	3MAX		
Total number of cycles: 5					
Resistance to Soldering Heat	Warm up time: 120 ± 2 seconds to reach 120 ± 2 °C Solder bath temperature: 260 ± 5 °C Solder bath composition: Sn - 96.5% Ag - 3.0% Cu - 0.5% Immersion depth : 1.5 to 2.0 mm Immersion duration : 10 ± 1 seconds			1. No appearance defect 2. Capacitance change within $\pm 10\%$ 3. D.F. smaller than specification value 4. Leakage current smaller than specification value	
Solder Ability	Solder bath temperature: 235 ± 5 °C Solder bath composition: Sn - 96.5% Ag - 3.0% Cu - 0.5% Immersion depth: 1.5 to 2.0 mm Immersion duration: 2 ± 0.5 seconds			A minimum of 95% of the immersed surface is to be coated with the new solder	
High Humidity Storage	Temperature: 40 ± 2 °C Relative humidity: 90 to 95% Duration: 240 ± 8 hours			1. No appearance defect 2. Capacitance change within $\pm 10\%$ 3. D.F. change within 120% of the specified value 4. Leakage current smaller than specification value	
Surge	Temperature: 15 to 35°C Applied voltage: See specification "ON" position: 30 seconds "OFF" position: 5 minutes 30 seconds Duration: 1000 cycles			1. No electrical or mechanical damage 2. Capacitance change within $\pm 15\%$ 3. D.F. smaller than specification value 4. Leakage current smaller than specification value	
Low Temperature Characteristics (Max. Impedance Ratio)	Working Voltage(V)	10	16~100	160~250	350~450
	Impedance Z-25°C /+20°C	---	---	3	6
	Impedance Z-40°C /+20°C	6	4	---	---

Test Item	Test Condition	Acceptance Criteria									
Vent	Conduct under normal lighting conditions for lab work	There shall be no explosion, flash, flame, spark or fire from the capacitor during or after the test, nor shall there be expulsion of any metal from the casing.									
	<table border="1"> <thead> <tr> <th>Capacitor diameter</th> <th>Applied Current(A)</th> <th>Minutes</th> </tr> </thead> <tbody> <tr> <td>Less than 22.4 mm</td> <td>1</td> <td rowspan="2">Within 30</td> </tr> <tr> <td>More than 22.5mm</td> <td>10</td> </tr> </tbody> </table>		Capacitor diameter	Applied Current(A)	Minutes	Less than 22.4 mm	1	Within 30	More than 22.5mm	10	
	Capacitor diameter		Applied Current(A)	Minutes							
Less than 22.4 mm	1	Within 30									
More than 22.5mm	10										
Vibration	Frequency range: 10 Hz to 55 Hz Amplitude: 1.5 mm Cycle definition: 10 Hz to 55 Hz and back to 10 Hz Cycle duration: 1 minute Duration: 2 hours per direction (3 directions)	1. No electrical or mechanical damage 2. No appearance damage									
Terminal Pull	<table border="1"> <thead> <tr> <th>Terminal type & diameter (mm)</th> <th>Load (Kg)</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Radial</td> <td>0.5</td> <td>0.5</td> </tr> <tr> <td>0.6 to 0.8</td> <td>1.0</td> </tr> <tr> <td>0.8</td> <td>1.5</td> </tr> </tbody> </table>	Terminal type & diameter (mm)	Load (Kg)	Radial	0.5	0.5	0.6 to 0.8	1.0	0.8	1.5	1. No electrical or mechanical damage 2. No appearance damage
	Terminal type & diameter (mm)	Load (Kg)									
	Radial	0.5	0.5								
0.6 to 0.8		1.0									
0.8		1.5									
Endurance	Capacitors are placed in an oven and applied with rated voltage for 2,000 hours at 125°C. After being restored to 25°C, capacitors shall meet the specifications	1. Capacitance change within $\pm 25\%$ of the initial value 2. D.F. change within $\pm 200\%$ of the specified value 3. Leakage current smaller than specification value									
Shelf Life	Capacitors are placed in an oven for 1,000 hours at 125 °C without applying rated working voltage. After being restored to 25°C, capacitors shall meet the specifications.	After test:UR to be applied for 30 minutes,24 to 48 hours before measurement. 1. Capacitance change within $\pm 25\%$ of the initial value 2. D.F. change within $\pm 200\%$ of the specified value 3. Leakage current within $\pm 200\%$ of specification value									
Maximum permissible ripple current	Temperature : 125 \pm 2°C Voltage : DC. Voltage+peak ripple voltage \leq Rated voltage										
Ripple current multipliers	Frequency Multipliers										
	WV(V)	Cap(μ F)	Frequency(Hz)								
			50(60)	120	1K	\geq 10K	\geq 50K				
10 ~ 35	< 100	0.75	1.00	1.57	2.00	--					
	100~470	0.80	1.00	1.34	1.50	--					
	> 470	0.85	1.00	1.10	1.15	--					
50~ 100	--	0.95	1.00	1.0	1.08(10K)	1.08					