Multilayer Polymer Aluminum Electrolytic Capacitors

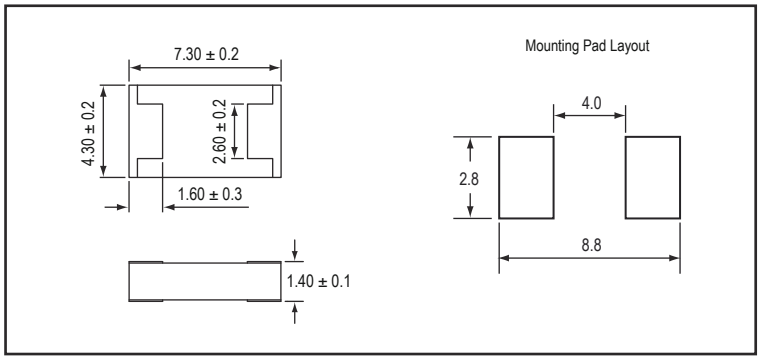
ZPCT002M471S

1. FEATURES

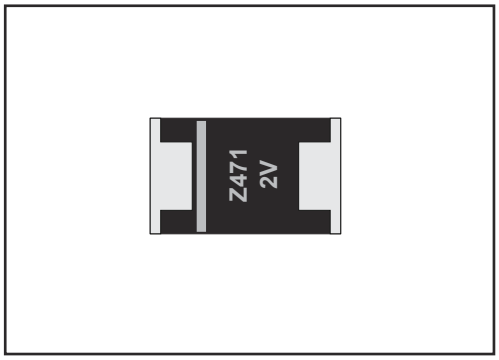
* Stable Temperature Characteristics
* No Voltage Derating
* Surface Mount Process (SMT)
* Low Profile
* High Capacitance
* RoHS Compliant
* Temperature Range: -55 to +105℃

2. OUTLINE DIMENSIONS & PAD LAYOUT

Unit : mm



3. MARKING



4. SPECIFICATIONS

Items	Characteristics		
Nominal Capacitance	470 μF		
Rated Voltage	2V		
Capacitance Tolerance	M = ±20% (120Hz / +20℃)		
Operating Temperature Range	-55 ~ +105℃		
Capacitance Range	376 μF ~ 564 μF +20℃, 120Hz		
Leakage Current (L.C.)	94 μA (max.) +20℃, after 2 minutes		
Dissipation Factor (Tan δ)	0.06 (max.) +20℃, 120Hz		
Equivalent Series Resistance	9mΩ (max.) +20℃, 100kHz		
Surge Voltage	1.25 x rated working voltage		
Damp Heat, Steady State	60 ± 2℃ 90% ~ 95% RH un-loaded 500 hours	Capacitance change	+70% / -20% of initial measured value
		Dissipation factor (Tan δ)	200% of initial specified value
		Leakage Current (L.C.)	Within the initial specified value
Endurance	105 ± 3℃ 2000 hours Rated Voltage	Capacitance change	±20% of initial measured value
		Dissipation factor (Tan δ)	200% of initial specified value
		Leakage Current (L.C.)	300% of Initial specified value

5. PRODUCT LIST

Item	Rated Volatage (Vdc)	Rated Capacitance 120Hz / +20℃ (μF)	Tan δ 120Hz / +20℃ Max.	Leakage Current (L.C.) Max. (uA)	ESR 100kHz / +20℃ Max. (mΩ)	Rated Ripple Current 100kHz / 45℃ Max. (mA)
ZPCT002M471S	2	470	0.06	94	9	6300

Temperature Compensation Multipliers for Ripple Current

Rated Volatage (Vdc)	T≦45℃	45℃＜T≦85℃	85℃＜T≦105℃
2V	1	0.70	0.25

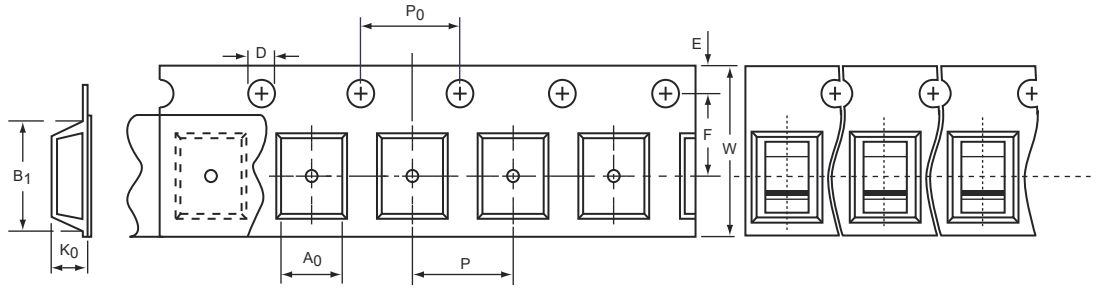
＊ Ripple current should be controlled so that surface temperature of capacitor does not exceed the category temperature.

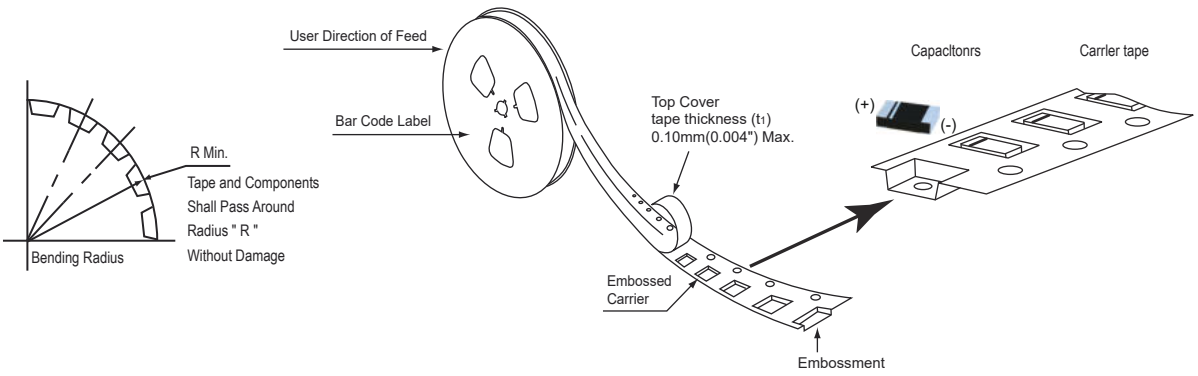
Multilayer Polymer Aluminum Electrolytic Capacitors

6. REEL PACKING

REEL SIZE	REEL (PCS)	CARTON (PCS)	CARTON SIZE (m/m)
7"	1,200	21,600	400 * 207 * 240

7. SURFACE TAPE MOUNT PACKAGING





Dimensions in millimeters and (inches)

TAPE SIZE	D	E	P0	A0	K0	Constant Dimensions
12 mm	1.50 ± 0.1 (0.059 ±0.004)	1.75 ± 0.1 (0.069 ± 0.004)	4.0 ± 0.1 (0.157 ± 0.004)	4.6 ± 0.2 (0.181 ± 0.008)	1.5 ± 0.1 (0.059 ± 0.004)	

Dimensions in millimeters and (inches)

REEL SIZE	TAPE SIZE	B1	F	P	W	R Min
7"	12 mm	7.60 ± 0.2 (0.217 ± 0.008)	5.50 ± 0.10 (0.217 ± 0.004)	8.00 ± 0.10 (0.315 ± 0.004)	12.00 ± 0.20 (0.472 ± 0.008)	30 (1.181)

8. Application Guidelines

To ensure the stable quality of the capacitor, and make full use of its capability, please read following guidelines before use:

8.1. Polarity

This polymer aluminum electrolytic capacitor has polarity. Polarity must be identified before use. if the polarity is reversed, the leakage current of this capacitor will increase rapidly, even more it will make the circuit short.

8.2. Voltage

The application of over-voltage will increase the leakage current, so that the capacitor will be damaged because of the rise of its interior temperature. The sum of DC voltage and ripple voltage should not exceed the rated voltage.

8.3. Temperature

The capacitor must be used in or under the rated temperature. Operation at temperatures exceeding specifications will cause large changes in electrical properties. The potential deterioration will also lead to the failure of the capacitor. When thinking about the operating temperature of the capacitor, be sure to include not only the ambient temperature but also interior heat coming from the components.

8.4. Ripple current

Use the capacitor in permitted ripple current. When excessive ripple current is applied to the capacitor, it will cause the increasement of leakage current, short circuits and decreasing in life.

8.5. Storage of capacitor

Capacitors should be stored in a moisture proof and without direct sunlight environment. The prefer temperature is 5℃ ~ 30℃, relative humidity is lower than 60% RH.

Moisture Sensitivity Level: Level 3.

To maintain good mounting capability, please keep the capacitors in the state as delivered. Products should be all used within the storage term after opening the package. Please put the remaining products back into the packaging bag and seal the unsealed part with adhesive tape.

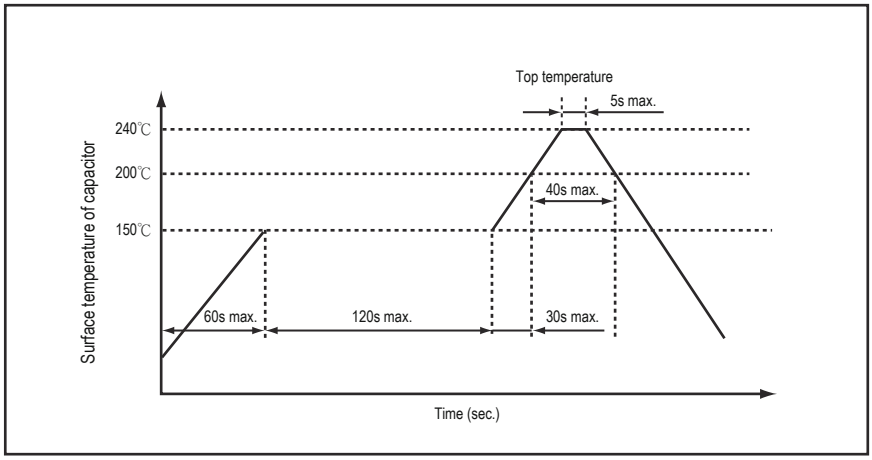
Storage term of the products: 24 months after manufactured (before opening the package), 7 days after opening. After the storage limit, drying treatment is necessary, condition: 50℃ ± 2℃, 100h to 200h.

8.6. Capacitor measurement

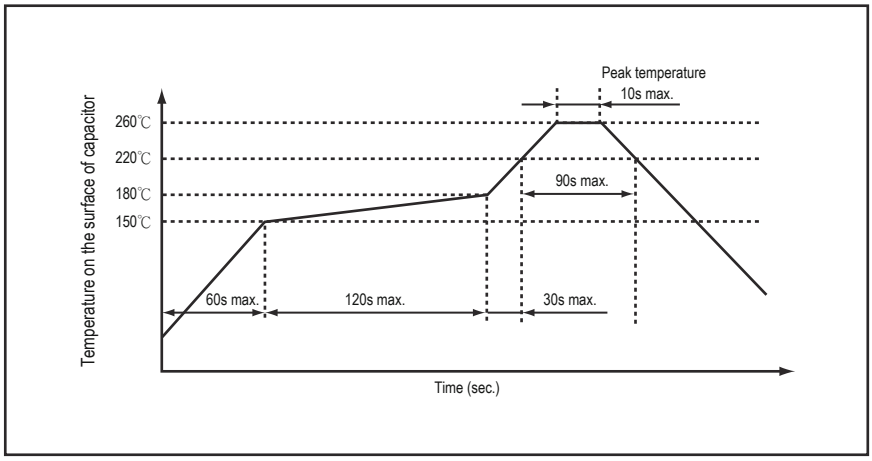
Excessive impact current resulted from charge and discharge hastily will cause the increasement of leakage current, even short circuit. Therefore the capacitor should be serially attached to a 1kΩ protective resistor, and the applied voltage should be gradually increased to be equal to the rated voltage during the leakage current measurement. Before measuring other parameters, 1kΩ resistor should be connected in series to make the capacitor discharge fully.

8.7. Assembly solder profile

This is suit to Re-flow soldering, recommended curve for soldering is as following.



Recommended curve for lead free soldering is as following.



When using the electric iron. the electric soldering bit should not touch the case. Make sure that the soldering temperature is no more than 350℃ and the time is shorter than 3 seconds.

Before mounting, please confirm whether the lead size is suit to the designed dimensions of the circuit board. Do not distort and apply strong force to the capacitor during mounting, otherwise the electrical performance of the capacitor will be affected greatly, even damaged. After it is soldered on PCB board, do not remove it with strong force.

In addition, Re-flow soldering should be no more than three times.

8.8. Capacitors cannot be used in the following environments:

a) Contact directly with water, salt water or oil.

b) Full of deleterious chemically active gases.

c) Exposed to direct sunlight.