

# Conductive Polymer Aluminum Solid Capacitor –Radial Type

PE Series

MERITEK

## FEATURE

- Rated voltage: 2.5 ~ 16VDC
- Endurance 2000hours at 105°C
- Super Low ESR, High ripple current capability
- Suitable for DC-DC converters, voltage regulators applications
- RoHS Compliant



## PART NUMBERING SYSTEM



PE   6R3   471   M   0809  
 (1)   (2)   (3)   (4)   (5)

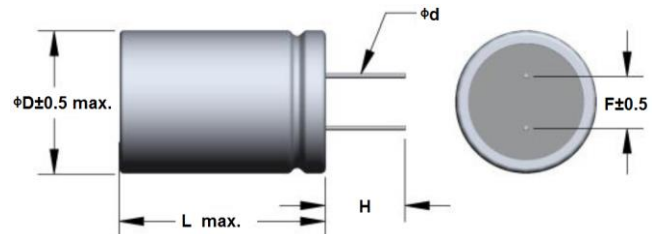
No	Item	Digit	Description	Series Reference
(1)	Meritek Series	PE	Conductive Polymer Aluminum Solid Cap	Radial Type
(2)	Rated Voltage	6R3	6R3: 6.3VDC	2R5: 2.5VDC, 16V: 16VDC
(3)	Capacitance	471	471: 470μF	561: 560μF, 152: 1500μF, 222: 2200μF
(4)	Tolerance	M	M: ±20%	-20% ~ +20%
(5)	Size Code	0809	Diameter X Length: 8.0X9.0 mm	0609, 0812, 1012

## ELECTRICAL SPECIFICATIONS

Item	Characteristics		
Operating Temperature Range	-55°C ~ +105°C		
Rated Working Voltage	2.5VDC ~ 16VDC		
Capacitance	270μF ~ 2200μF		
Capacitance Tolerance	-20% ~ +20% (M)		
Leakage Current	Shall not exceed values shown in electrical characteristics.		
Dissipation Factor (tanδ)	≤ 0.1 (Max.) at 20°C, 120Hz		
Impedance at high & Low Temperature	Impedance at 100kHz at -55±3°C or 105±2°C shall meet the values listed on the right	Z(-55°C)/Z(+20°C)	≤1.25
		Z(105°C)/Z(+20°C)	≤1.25

## DIMENSION

Size (mm)	φD±0.5	L max.	φd±0.5	F±0.4	H±0.3
0609	6.3	9.0	0.6	2.5	3.2
0809	8.0	9.0	0.6	3.5	3.2
0812	8.0	12.0	0.6	3.5	3.2
1012	10.0	12.0	0.6	5.0	3.2



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## ELECTRICAL CHARACTERISTICS

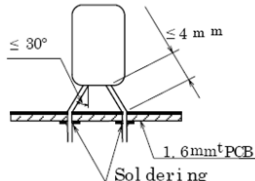
WV/SV (VDC)	Part No.	Cap (μF)@120Hz	Case Size Code	Leakage Current Max. (μA)	ESR Max. (mΩ) @100kHz	Ripple Current (A r.m.s) @100kHz
2.5/2.9	PE2R5561M0609	560	0609	500	7	5,000
	PE2R5561M0809	560	0809	500	7	6,100
	PE2R5821M0609	820	0609	500	7	5,000
	PE2R5821M0809	820	0809	500	7	6,100
	PE2R5102M0809	1,000	0809	500	7	6,100
	PE2R5122M0809	1,200	0809	600	7	6,100
	PE2R5152M0812	1,500	0812	750	7	6,100
	PE2R5152M1012	1,500	1012	750	7	6,640
	PE2R5222M1012	2,200	1012	1,100	7	6,640
4/4.6	PE4R0561M0809	560	0809	500	7	6,100
	PE4R0122M0809	1,200	0809	960	7	6,100
6.3/7.2	PE6R3471M0609	470	0609	592	8	4,700
	PE6R3471M0809	470	0809	592	8	5,700
	PE6R3561M0609	560	0609	705	8	4,700
	PE6R3561M0809	560	0809	705	8	5,700
	PE6R3821M0609	820	0609	1,033	8	4,700
	PE6R3821M0809	820	0809	1,033	8	5,700
	PE6R3102M1012	1,000	1012	1,260	7	6,640
	PE6R3152M1012	1,500	1012	1,890	7	6,640
16/18.4	PE16V271M0809	270	0809	864	10	5,000
	PE16V271M0812	270	0812	864	10	5,230
	PE16V331M0809	330	0809	1,056	10	5,000
	PE16V471M0812	470	0812	1,505	10	5,230
	PE16V681M1012	680	1012	2,176	10	6,100
	PE16V821M1012	820	1012	2,624	10	6,100
	PE16V102M1012	1000	1012	3,200	12	5,400

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## RELIABILITY

Item	Characteristics			
Endurance	Appearance	No significant damage		105°C, 2000 hours, rated voltage applied
	Capacitance Change	≤ ±20% of the initial value		
	Dissipation Factor	≤ 150% of the initial specified value		
	ESR	≤ 150% of the initial specified value		
	Leakage Current	≤ The initial specified value		
Damp Heat, Steady State	Appearance	No significant damage		60°C, 90 to 95%RH, 1000 hours No Voltage applied
	Capacitance Change	≤ ±20% of the initial value		
	Dissipation Factor	≤ 150% of the initial specified value		
	ESR	≤ 150% of the initial specified value		
	Leakage Current	≤ The initial specified value		
Surge Voltage	Appearance	No significant damage		The capacitors shall be subjected to 1000 cycles each consisting of charge with the surge voltages at 105±2°C
	Capacitance Change	≤ ±20% of the initial value		
	Dissipation Factor	≤ 150% of the initial specified value		
	ESR	≤ 150% of the initial specified value		
	Leakage Current	≤ The initial specified value		
Pull strength	Gradually up to the specified value list below and held for 10±1 s.			No significant damage
	Case Diameter (mm)	Load Strength (N)	Load Strength (kg)	
	4	2.5	0.255	
	6.3	5	0.51	
	8	10	1.0	
Bending strength	Bending strength load listed below will be hung at the end of the lead wire termination, and the body of a capacitor shall be bent 90° and return to its original position. For 2 to 3 seconds.			No significant damage
	Case Diameter (mm)	Load Strength (N)	Load Strength (kg)	
	4	1.25	0.218	
	6.3	2.5	0.255	
	8	5	0.51	
Vibration	Vibration cycle should vary from 10 to 55Hz with total amplitude of 1.5mm and return to 10Hz in about 1 minute. Vibration applied to a capacitor should be three directions, which each perpendicular to the other two as longitudinal axis of capacitor set as z axis, and last for 2 hours in each direction.			No significant damage
				
Solderability	Time: 2±0.5s, Temperature: 235±5°C, Up to 1.5 to 2.0mm from body		at least 95% should be covered	
Resistance to soldering heat	Capacitance Change	≤ ±5% of the initial value		Time: 10±1s, Temperature: 260±5°C, Up to 1.5 to 2.0mm from body
	Dissipation Factor	≤ The initial specified value		
	Leakage Current	≤ The initial specified value		
Resistance to solvent	A Capacitor will be immersed for 30±5 seconds in isopropylalcohol at 20°C to 25°C and then pull it out.		No significant damage	

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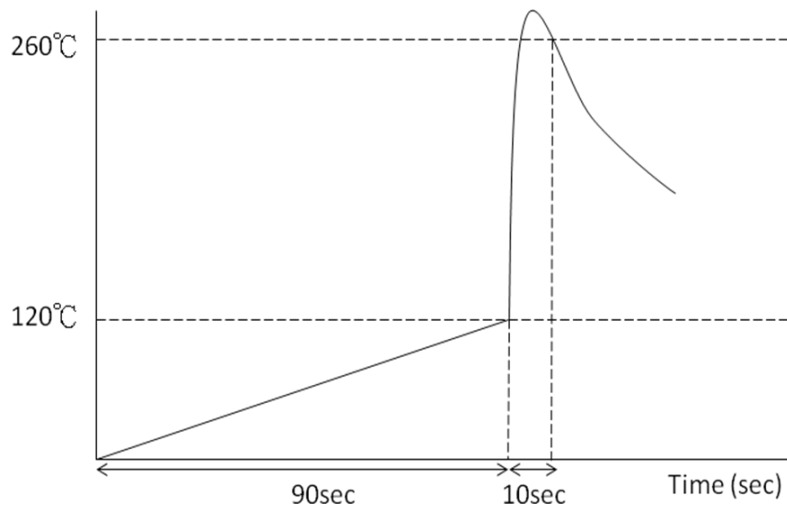
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## RELIABILITY (CONTINUED)

Item	Characteristics		
Rapid Temperature Change	Appearance	No significant damage	Temperature cycle: -55°C: 30±5mins -55°C to 105°C: ≤3mins 105°C:30±5mins 105°C to -55°C: ≤3mins Cycles numbers: 5 cycles
	Capacitance Change	≤ ±10% of the initial value	
	Dissipation Factor	≤ The initial specified value	
	ESR	≤ The initial specified value	
	Leakage Current	≤ The initial specified value	

## SOLDERING RECOMMENDATION



Solder capacitors under the soldering conditions as follows.

- (a) Pre-heat condition: atmosphere temperature 120°C or less for up to 90 seconds
- (b) Soldering condition: solder temperature 260°C or less for up to 10 seconds.

## PACKAGING SPECIFICATION

Case size	PE bag	inner box	outer box
0609	500 PCS	8 bags (4,000 PCS)	5 inner boxes (20,000 PCS)
0809	500 PCS	6 bags (3,000 PCS)	5 inner boxes (15,000 PCS)
0812	500 PCS	4 bags (2,000 PCS)	5 inner boxes (10,000 PCS)
1012	500 PCS	4 bags (2,000 PCS)	5 inner boxes (10,000 PCS)