

Conductive Polymer Aluminum Solid Capacitor –Radial Type

PE5K Series

MERITEK

FEATURE

- Rated voltage: 2.5 ~ 25VDC
- Endurance 5000hours at 105°C
- Low ESR, High ripple current capability
- Suitable for DC-DC converters, voltage regulators applications
- RoHS Compliant



PART NUMBERING SYSTEM

PE5K 2R5 821 M 0809
 (1) (2) (3) (4) (5)



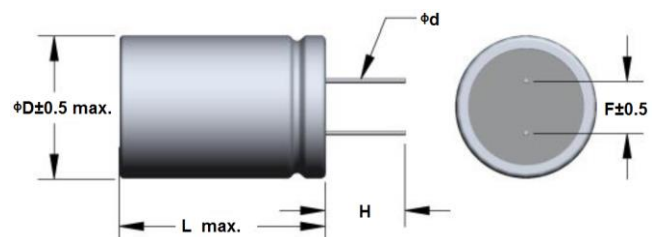
No	Item	Digit	Description	Series Reference
(1)	Meritek Series	PE5K	Conductive Polymer Aluminum Solid Cap	Radial Type
(2)	Rated Voltage	2R5	2R5: 2.5VDC	3R0: 3.0VDC, 10V: 10VDC
(3)	Capacitance	821	821: 820μF	391: 390μF, 561: 560μF, 102: 1000μF
(4)	Tolerance	M	M: ±20%	-20% ~ +20%
(5)	Size Code	0809	Diameter X Length: 8.0X9.0 mm	0406, 0509, 0606, 0609, 0809, 0812

ELECTRICAL SPECIFICATIONS

Item	Characteristics		
Operating Temperature Range	-55°C ~ +105°C		
Rated Working Voltage	2.5VDC ~ 25VDC		
Capacitance	10μF ~ 1000μF		
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
0406	4.0	6.0	0.45	1.5	3.2
0508	5.0	8.0	0.50	2.0	3.2
0509	5.0	9.0	0.50	2.0	3.2
0606	6.3	6.0	0.45	2.5	3.2
0609	6.3	9.0	0.60	2.5	3.2
0807	8.0	7.0	0.60	3.5	3.2
0809	8.0	9.0	0.60	3.5	3.2
0812	8.0	12.0	0.60	3.5	3.2
1012	10.0	12.0	0.60	5.0	3.2



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ELECTRICAL CHARACTERISTICS

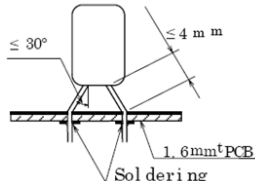
WV/SV (VDC)	Part No.	Cap (μ F)@120Hz	Case Size Code	Leakage Current Max. (μ A)	ESR Max. (m Ω) @100kHz	Ripple Current (A r.m.s) @100kHz
2.5/2.9	PE5K2R5391M0509	390	0509	500	7	4,180
	PE5K2R5561M0509	560	0509	500	7	4,180
	PE5K2R5561M0606	560	0606	500	10	3,900
	PE5K2R5561M0609	560	0609	500	7	5,000
	PE5K2R5561M0809	560	0809	500	7	6,100
	PE5K2R5681M0809	680	0807	500	8	4,900
	PE5K2R5821M0609	820	0609	500	7	5,000
	PE5K2R5821M0809	820	0809	500	7	6,100
	PE5K2R5102M0809	1000	0809	500	7	6,100
3.0/3.4	PE5K3R0821M0609	820	0609	500	7	5,000
4.0/4.6	PE5K4R0561M0609	560	0609	500	24	2,400
6.3/7.2	PE5K6R3101M0606	100	0606	126	35	2,100
	PE5K6R3471M0609	470	0609	592	8	4,700
	PE5K6R3471M0809	470	0809	592	8	5,700
	PE5K6R3561M0609	560	0609	705	8	4,700
	PE5K6R3561M0809	560	0809	705	8	5,700
	PE5K6R3821M0609	820	0609	1033	8	4,700
	PE5K6R3821M0809	820	0809	1033	8	5,700
10/11.5	PE5K10V100M0406	10	0406	300	80	700
16/18.4	PE5K16V101M0606	100	0606	320	24	2,490
	PE5K16V101M0609	100	0609	320	25	2,820
	PE5K16V271M0609	270	0609	864	10	5,000
	PE5K16V271M0809	270	0809	864	10	5,000
	PE5K16V271M0812	270	0812	864	10	5,230
	PE5K16V331M0809	330	0809	1,056	13	4,700
	PE5K16V471M0812	470	0812	1,505	10	5,230
	PE5K16V102M1012	1000	1012	3,200	12	5,400
25/28.8	PE5K25V560M0606	56	0606	280	30	2,800
	PE5K25V680M0809	68	0809	340	24	3,380
	PE5K25V820M0609	82	0609	410	28	2,780
	PE5K25V101M0812	100	0812	500	22	3,600

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RELIABILITY

Item	Characteristics			
Endurance	Appearance	No significant damage		105°C, 5000 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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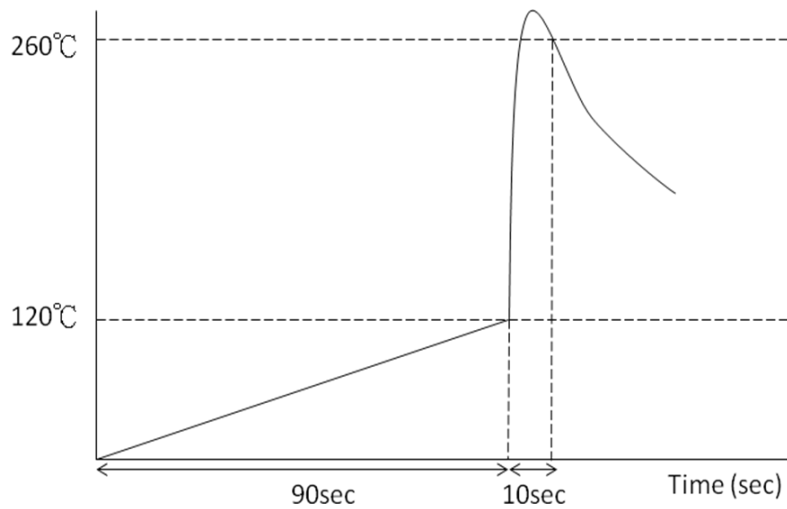
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RELIABILITY (CONTINUED)

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
0406	1,000 PCS	24 bags (24,000 PCS)	5 inner boxes (120,000 PCS)
0508/0509	500 PCS	8 bags (4,000 PCS)	5 inner boxes (20,000 PCS)
0606	500 PCS	12 bags (6,000 PCS)	5 inner boxes (30,000 PCS)
0609	500 PCS	8 bags (4,000 PCS)	5 inner boxes (20,000 PCS)
0807	500 PCS	6 bags (3,000 PCS)	5 inner boxes (15,000 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)