

Conductive Polymer Aluminum Solid Capacitor –Radial Type

PEEP Series

MERITEK

FEATURE

- Rated voltage: 6.3 ~ 20VDC
- Endurance 3000hours at 105°C
- Super Low ESR, High ripple current capability
- Suitable for AC-DC converters, voltage regulators applications
- RoHS Compliant



PART NUMBERING SYSTEM

PEEP 6R3 471 M 0609
 (1) (2) (3) (4) (5)



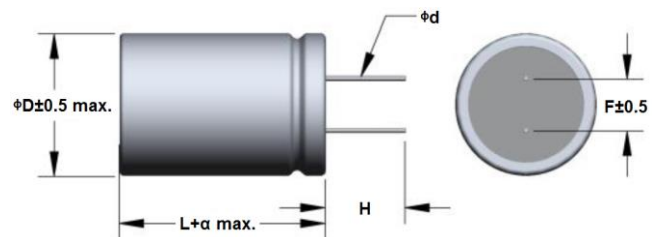
No	Item	Digit	Description	Series Reference
(1)	Meritek Series	PEEP	Conductive Polymer Aluminum Solid Cap	Radial Type
(2)	Rated Voltage	6R3	6R3: 6.3VDC	7R5: 7.5VDC, 16V: 16VDC
(3)	Capacitance	471	471: 470 μ F	561: 560 μ F, 152: 1500 μ F, 222: 2200 μ F
(4)	Tolerance	M	M: \pm 20%	-20% ~ +20%
(5)	Size Code	0609	Diameter X Length: 6.0X9.0 mm	0809, 0812, 1012

ELECTRICAL SPECIFICATIONS

Item	Characteristics		
Operating Temperature Range	-55°C ~ +105°C		
Rated Working Voltage	6.3VDC ~ 20VDC		
Capacitance	100 μ F ~ 2200 μ F		
Capacitance Tolerance	-20% ~ +20% (M)		
Leakage Current	Shall not exceed values shown in electrical characteristics.		
Dissipation Factor (tan δ)	\leq 0.1 (Max.) at 20°C, 120Hz		
Impedance at high & Low Temperature	Impedance at 100kHz at -55 \pm 3°C or 105 \pm 2°C shall meet the values listed on the right	Z(-55°C)/Z(+20°C)	\leq 1.25
		Z(105°C)/Z(+20°C)	\leq 1.25

DIMENSION

Size(mm)	ϕ D \pm 0.5	L	α	ϕ d \pm 0.5	F \pm 0.4	H \pm 0.3
0405	4	5	1	0.45	1.5	3.2
0506	5	6	1	0.5	2	3.2
0507	5	7	1	0.5	2	3.2
0508	5	8	1	0.5	2	3.2
0509	5	9	1	0.5	2	3.2
0521	5	11	1	0.5	2	3.2
0605	6.3	5	1	0.45	2.5	3.2
0607	6.3	7	1	0.6	2.5	3.2
0608	6.3	8	1	0.6	2.5	3.2
0609	6.3	9	1	0.6	2.5	3.2
0610	6.3	10	1	0.6	2.5	3.2



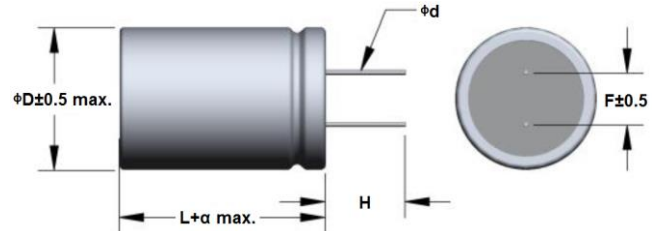
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DIMENSION (CONTINUED)

Size(mm)	$\phi D \pm 0.5$	L	α	$\phi d \pm 0.5$	$F \pm 0.4$	$H \pm 0.3$
0611	6.3	11	1	0.6	2.5	3.2
0806	8	6	1	0.6	3.5	3.2
0808	8	8	1	0.6	3.5	3.2
0810	8	10	1.5	0.6	3.5	3.2
0812	8	11.5	1.5	0.6	3.5	3.2
0816	8	16	1.5	0.6	3.5	3.2
0820	8	20	1.5	0.6	3.5	3.2
1007	10	7	1	0.6	5	3.2
1010	10	10	1	0.6	5	3.2
1012	10	11.5	1.5	0.6	5	3.2
1013	10	12.5	1.5	0.6	5	3.2
1016	10	16	1.5	0.6	5	3.2
1020	10	20	1.5	0.6	5	3.2



ELECTRICAL CHARACTERISTICS

WV/SV (VDC)	Part No.	Cap (μF)@120Hz	Case Size Code	Leakage Current Max. (μA)	ESR Max. ($\text{m}\Omega$) @100kHz	Ripple Current (A r.m.s) @100kHz
6.3/7.2	PEEP6R3271M0507	270	0507	340	12	3,500
	PEEP6R3331M0508	330	0508	500	8	4,050
	PEEP6R3331M0605	330	0605	500	17	3,390
	PEEP6R3331M0608	330	0608	500	8	4,700
	PEEP6R3471M0508	470	0508	592	8	4,050
	PEEP6R3471M0608	470	0608	592	8	4,700
	PEEP6R3561M0608	560	0608	705	8	4,700
	PEEP6R3561M0808	560	0808	705	7	6,100
	PEEP6R3681M0608	680	0608	857	8	4,700
	PEEP6R3821M0608	820	0608	1,033	8	4,700
	PEEP6R3821M0610	820	0610	1,033	8	4,700
	PEEP6R3102M0610	1000	0610	1,260	8	4,700
	PEEP6R3102M0812	1000	0812	1,260	7	6,100
	PEEP6R3152M0812	1500	0812	1,890	7	6,100
PEEP6R3152M1010	1500	1010	1,890	12	5,025	
PEEP6R3222M1012	2200	1012	2,772	7	6,640	
6.8/7.8	PEEP6R3391M0508	390	0508	530	8	3,200
	PEEP6R3821M0608	820	0608	1,115	8	5,500
	PEEP6R3102M0610	1000	0610	1,360	8	5,500
7.5/7.8	PEEP6R3501M0508	500	0508	750	12	3,500
	PEEP6R3681M0608	680	0608	1,020	12	4,780
10/11.5	PEEP6R3471M0610	470	0610	940	10	4,700
	PEEP6R3471M0808	470	0808	940	12	4,700
	PEEP6R3561M0610	560	0610	1,120	10	4,700
	PEEP6R3681M0808	680	0808	1,360	9	5,510
	PEEP6R3102M0812	1000	0812	2,000	8	6,100
16/18.4	PEEP6R3101M0605	100	0605	320	24	2,490
	PEEP6R3271M0808	270	0808	864	10	5,000
	PEEP6R3271M0812	270	0812	864	10	5,230
	PEEP6R3331M0610	330	0610	1,056	16	4,000
	PEEP6R3331M0808	330	0808	1,056	10	5,000

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ELECTRICAL CHARACTERISTICS (CONTINUED)

VV/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
16/18.4	PEEP6R3331M0812	330	0812	1,056	10	5,230
	PEEP6R3471M0808	470	0808	1,505	16	4,000
	PEEP6R3471M0812	470	0812	1,505	10	5,230
	PEEP6R3471M1010	470	1010	1,505	10	4,350
	PEEP6R3471M1012	470	1012	1,505	8	6,100
	PEEP6R3561M0812	560	0812	1,792	14	4,950
	PEEP6R3681M0812	680	0812	2,176	10	5,230
	PEEP6R3821M0812	820	0812	2,624	10	5,230
	PEEP6R3821M1012	820	1012	2,624	10	6,100
	PEEP6R3102M1012	1000	1012	3,200	12	5,400
	PEEP6R3122M0820	1200	0820	3,840	11	7,500
	PEEP6R3222M1010	2200	1020	7,040	8	8,100
20/23	PEEP6R3391M0810	390	0810	1,560	14	4,970
	PEEP6R3471M0812	470	0812	1,880	14	4,970
	PEEP6R3681M1012	680	1012	2,720	12	5,400

RELIABILITY

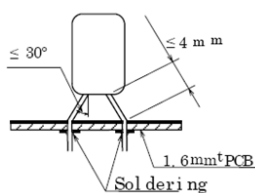
Item	Characteristics			
Endurance	Appearance	No significant damage		105°C, 3000 hours, rated voltage applied
	Capacitance Change	≤ ±20% of the initial value		
	Dissipation Factor	≤ 150% of the initial specified value		
	ESR	≤ 150% of the initial specified value		
	Leakage Current	≤ The initial specified 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	
	10	5	0.51	

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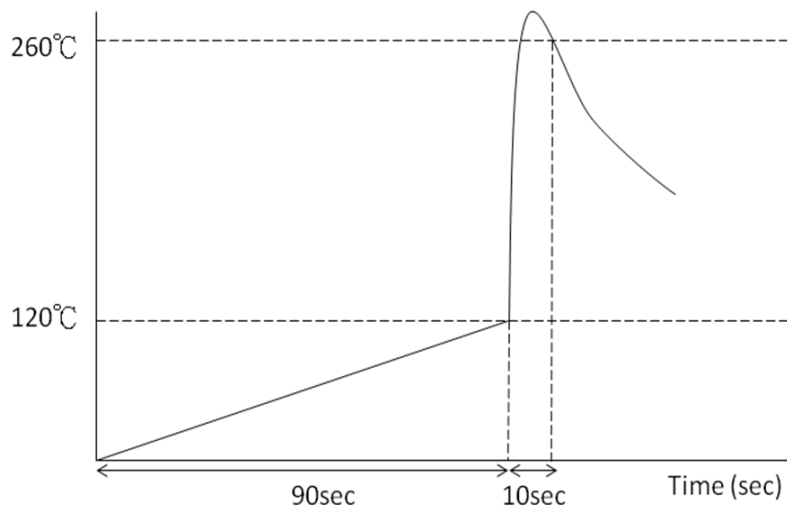
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RELIABILITY (CONTINUED)

Item	Characteristics	
Vibration	<p>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.</p> 	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
	Dissipation Factor	≤ The initial specified value
	Leakage Current	≤ The initial specified value
		Time: 10±1s, Temperature: 260±5°C, Up to 1.5 to 2.0mm from body
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
Rapid Temperature Change	Appearance	No significant damage
	Capacitance Change	≤ ±10% of the initial value
	Dissipation Factor	≤ The initial specified value
	ESR	≤ The initial specified value
	Leakage Current	≤ The initial specified value
		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

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.