Conductive Polymer Aluminum Solid Capacitor –Radial Type

PEVA Series

MERITEK

FEATURE

- Rated voltage: 2.5 ~ 25VDC
- Endurance 2000hours at 105°C
- Low ESR, High ripple current capability
- Suitable for DC-DC converters, voltage regulators applications
- RoHS Compliant

PART NUMBERING SYSTEM

PEVA **16V** **101** **M** **0506**
(1) (2) (3) (4) (5)

RoHS

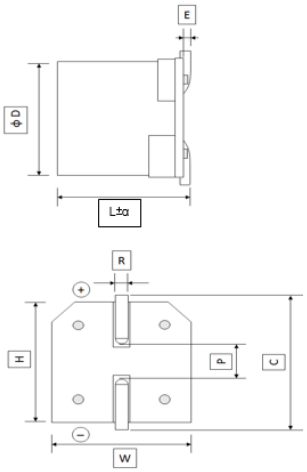
No	Item	Digit	Description	Series Reference
(1)	**Meritek Series**	PEVA	Conductive Polymer Aluminum Solid Cap	Radial Type
(2)	**Rated Voltage**	16V	16V: 16VDC	2R5: 2.5VDC, 6R3: 6.3VDC
(3)	**Capacitance**	101	101: 100µF	331: 330µF, 220: 22µF, 561: 560µF
(4)	**Tolerance**	M	M: ±20%	-20% ~ +20%
(5)	**Size Code**	0506	Diameter X Length: 5.0X6.0 mm	0545, 0506, 0645, 0606 ,0608, 0812

ELECTRICAL SPECIFICATIONS

Item	Characteristics		
Operating Temperature Range	-55°C ~ +105°C		
Rated Working Voltage	2.5VDC ~ 25VDC		
Capacitance	15µF ~ 1000µF		
Capacitance Tolerance	-20% ~ +20% (M)		
Leakage Current	Shall not exceed values shown in electrical characteristics.		
Dissipation Factor (tanδ)	≤ 0.12 (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	α	E Max.	W ±0.2	H ±0.2	C ±0.2	R	P ±0.3
0545	5	4.2	+0.4~-0.3	0.00~0.20	5.3	5.3	6	0.5~0.8	1.4
0506	5	5.8	0.2	0.00~0.20	5.3	5.3	6	0.5~0.8	1.4
0645	6.3	4.3	0.2	0.00~0.20	6.6	6.6	7.3	0.5~0.8	2.1
0606	6.3	5.8	0.2	0.00~0.20	6.6	6.6	7.3	0.5~0.8	2.1
0608	6.3	7.5	0.5	0.00~0.20	6.6	6.6	7.3	0.5~0.8	2.1
0610	6.3	9.7	0.3	0.00~0.20	6.6	6.6	7.3	0.6~0.9	2.1
0807	8	6.8	0.2	0.00~0.20	8.3	8.3	9	0.8~1.1	2.9
0810	8	9.7	0.3	0.00~0.20	8.3	8.3	9	0.8~1.1	2.9
0812	8	11.7	0.3	0.00~0.20	8.3	8.3	9	0.8~1.1	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	PEVA2R5331M0506	330	0506	165	21	2670
	PEVA2R5331M0645	330	0645	700	17	2300
	PEVA2R5331M0606	330	0606	413	15	3160
	PEVA2R5391M0506	390	0506	700	10	3900
	PEVA2R5391M0606	390	0606	292	10	3900
	PEVA2R5561M0610	560	0606	700	10	3900
	PEVA2R5821M0810	820	0610	500	9	4500
	PEVA2R5821M0606	820	0810	500	9	5380
4/4.6	PEVA4R0221M0606	220	0606	440	25	2500
	PEVA4R0331M0807	330	0606	660	15	3160
	PEVA4R0561M0810	560	0807	500	22	3220
	PEVA4R0561M0812	560	0810	500	9	5380
	PEVA4R0561M0645	560	0812	500	9	5380
6.3/7.2	PEVA6R3101M0606	100	0645	315	19	2300
	PEVA6R3101M0606	100	0606	315	27	2400
	PEVA6R3151M0645	150	0606	473	15	2700
	PEVA6R3151M0506	150	0645	472	19	2780
	PEVA6R3221M0645	220	0506	500	15	3150
	PEVA6R3221M0606	220	0645	700	17	2300
	PEVA6R3221M0606	220	0606	277	15	3160
	PEVA6R3331M0807	330	0606	416	17	3390
	PEVA6R3471M0810	470	0807	592	10	4300
	PEVA6R3561M0810	560	0810	705	10	4500
	PEVA6R3821M0810	820	0810	1033	12	5440
	PEVA6R3102M0810	1000	0810	1260	10	5440
10/11.5	PEVA10V121M0606	120	0606	600	25	2530
	PEVA10V221M0606	220	0606	440	25	2530
	PEVA10V331M0810	330	0810	660	17	3950
16/18.4	PEVA16V470M0606	47	0606	376	25	2500
	PEVA16V680M0606	68	0606	300	25	2440
	PEVA16V820M0506	82	0506	262	27	3000
	PEVA16V101M0506	100	0506	320	27	3000
	PEVA16V101M0606	100	0606	320	24	2490
	PEVA16V121M0807	120	0807	384	24	3010
	PEVA16V151M0807	150	0807	500	22	3220
	PEVA16V221M0810	220	0810	704	18	3890
	PEVA16V271M0807	270	0807	864	22	3300
	PEVA16V271M0810	270	0810	864	16	4070
	PEVA16V331M0810	330	0810	1056	22	3150
20/23	PEVA20V560M0506	56	0506	224	30	2800
	PEVA20V121M0606	120	0606	480	25	3200
25/28.8	PEVA25V150M0645	15	0645	300	55	1650
	PEVA25V220M0645	22	0645	275	45	2350
	PEVA25V270M0606	27	0606	135	40	2100
	PEVA25V470M0606	47	0606	235	30	2500

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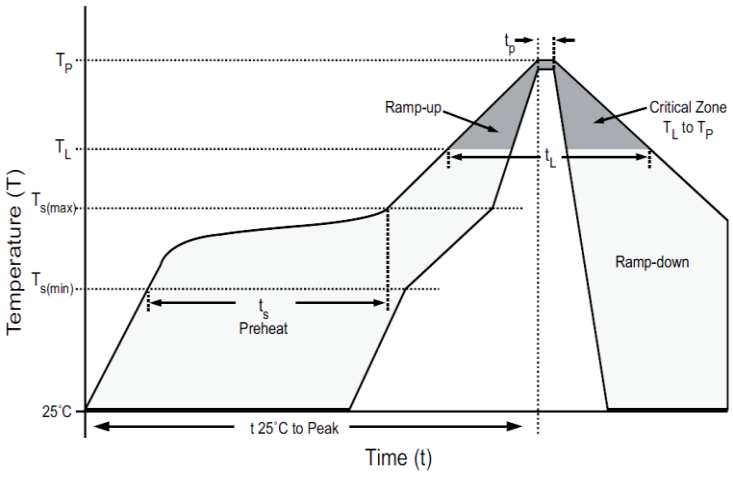
RELIBILITY

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 satisfied when the capacitors are restored to +20°C after the surge voltage is applied at a cycle of 360 seconds which consists charge for 30±5 seconds through a protective resistor of 1kΩ and discharge for 330 seconds, for 1000 cycles 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	
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. Capacitance change shall be within ±10% of the initial measured value.		No significant damage
Solderability	Time: 2±0.5s, Temperature: 235±5°C, Up to 1.5 to 2.0mm from body		at least 75% should be covered

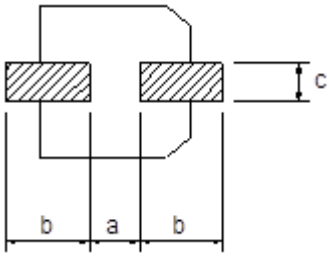
RECOMMENDED SOLDERING PROFILES

Reflow Condition		
Average Ramp-up Rate T_L to T_P		3°C/second max.
Pre Heat	**Temp. Min $T_{s(min)}$**	140°C
	Tempe. Max $T_{s(max)}$	160°C
	Time (min. to max.) (t_s)	60-120 seconds
Ramp-up Rate $T_{s(max)}$ to T_L		3°C/second max.
Reflow	**Temp. (T_L)**	217°C
	Time (t_L)	90 seconds
Peak Temperature (T_P)		$260^{-0/+5}$ °C
Time within 5°C of actual peak Temperature (t_p)		10 seconds
Ramp-down Rate		1~4°C/second



Soldering Pad Dimensions

Size code	a	b	c
⌀5	1.4	3	1.6
⌀6	2.1	3.5	1.6
⌀8	2.8	4.2	1.9



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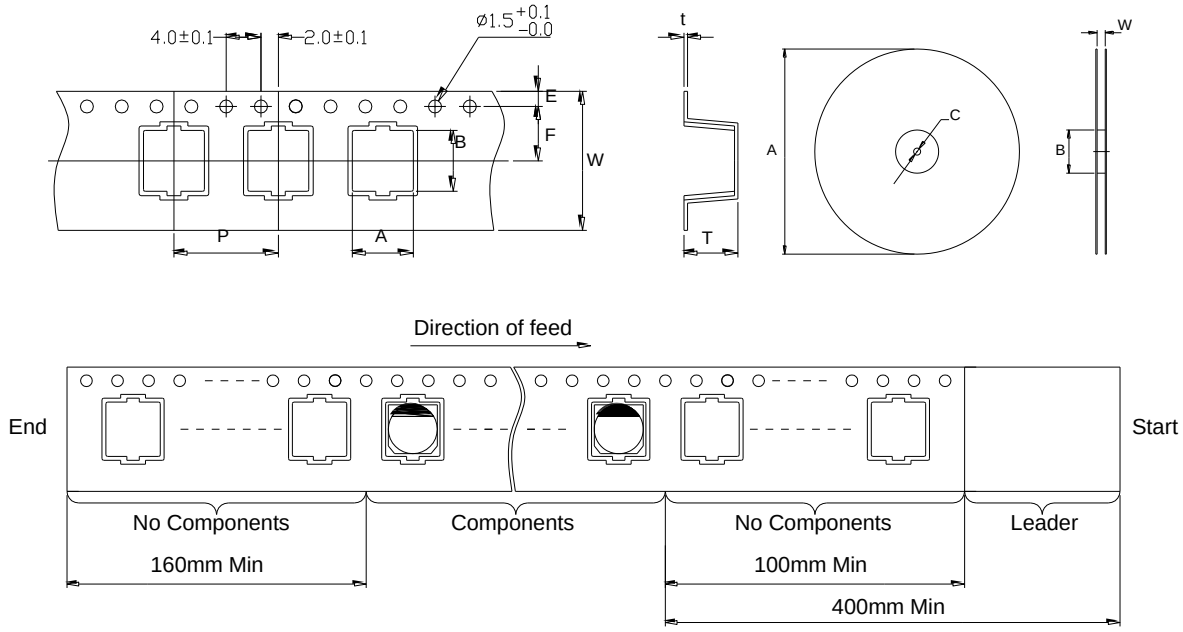
PACKAGING SPECIFICATION



Carrier tape dimensions

Size code	W±0.3 (mm)	A±0.2 (mm)	B±0.2 (mm)	F±0.1 (mm)	E±0.1 (mm)	P±0.1 (mm)	T±0.2 (mm)	t ±0.05 (mm)
0545	12	5.7	5.7	*5.5*	*1.75*	*12*	*4.8*	0.4
0506	12	5.7	5.7	*5.5*	*1.75*	*12*	*6.2*	0.4
0645	16	7	7	*7.5*	*1.75*	*12*	*4.8*	0.4
0606	16	7	7	7.5	1.75	12	6.3	0.4
0608	16	7	7	7.5	1.75	12	8.2	0.5
0610	16	7	7	7.5	1.75	12	10	0.5
0807	24	8.7	8.7	11.5	1.75	16	7.2	0.4
0810	24	8.7	8.7	11.5	1.75	16	10	0.5
0812	24	8.7	8.7	11.5	1.75	16	12	0.5

Reel Dimensions

Size code	A ± 2 (mm)	B ± 0.5 (mm)	C±0.5 (mm)	W±0.8 (mm)	T±0.3 (mm)
⌀5	381	100	13	13.5	2.5
⌀6	381	100	13	16.5	2.5
⌀8	381	100	13	25	2.5

Quantity of package

Case size	1 Reel	1 Box
0545	1.5K pcs	9K pcs(6 reels)
0506	1.2K pcs	7.2K pcs(6 reels)
0645	1.5K pcs	9K pcs(6 reels)
0606	1.2k pcs	7.2K pcs(6 reels)
0608	900 pcs	5.4K pcs(6 reels)
0610	750 pcs	4.5K pcs(6 reels)
0807	1K pcs	5K pcs(5 reels)
0810	500 pcs	2.5K pcs(5 reels)
0812	400 pcs	2K pcs(5 reels)