

# Conductive Polymer Aluminum Solid Capacitor – V Chip Type

PEV5 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

PEV5   6R3   561   M   0610  
 (1)   (2)   (3)   (4)   (5)



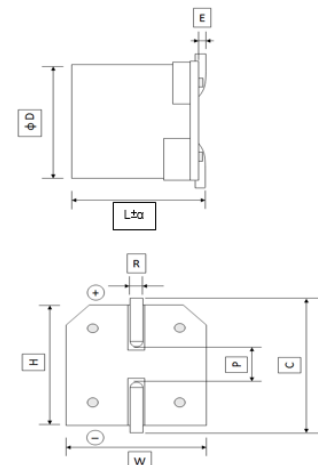
No	Item	Digit	Description	Series Reference
(1)	Meritek Series	PEV5	Conductive Polymer Aluminum Solid Cap	V Chip, Surface Mount Type
(2)	Rated Voltage	6R3	6R3: 6.3VDC	2R5: 2.5VDC, 16V: 16VDC
(3)	Capacitance	561	561: 560μF	331: 330μF, 101: 100μF, 220: 22μF
(4)	Tolerance	M	M: ±20%	-20% ~ +20%
(5)	Size Code	0610	Diameter X Length: 6.0X10.0 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	22μF ~ 820μF		
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	α	E Max.	W ±0.2	H ±0.2	C ±0.2	R	P ±0.3
0545	5	4.2	+0.4~-0.3	0.20	5.3	5.3	6	0.5~0.8	1.4
0506	5	5.8	0.2	0.20	5.3	5.3	6	0.5~0.8	1.4
0645	6.3	4.3	0.2	0.20	6.6	6.6	7.3	0.5~0.8	2.1
0606	6.3	5.8	0.2	0.20	6.6	6.6	7.3	0.5~0.8	2.1
0608	6.3	7.5	0.5	0.20	6.6	6.6	7.3	0.5~0.8	2.1
0610	6.3	9.7	0.3	0.20	6.6	6.6	7.3	0.6~0.9	2.1
0807	8	6.8	0.2	0.20	8.3	8.3	9	0.8~1.1	2.9
0810	8	9.7	0.3	0.20	8.3	8.3	9	0.8~1.1	2.9
0812	8	11.7	0.3	0.20	8.3	8.3	9	0.8~1.1	3.2



# Conductive Polymer Aluminum Solid Capacitor – V Chip Type

PEV5 Series

MERITEK

## 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	PEV52R5331M0645	330	0645	700	16	3,180
	PEV52R5391M0606	390	0606	413	10	3,900
	PEV52R5561M0606	560	0606	700	10	3,900
	PEV52R5561M0608	560	0608	420	9	4,200
	PEV52R5821M0608	820	0608	700	10	4,200
	PEV52R5821M0610	820	0610	700	10	4,300
	PEV52R5821M0810	820	0810	700	9	5,380
6.3/7.2	PEV56R3101M0645	100	0645	315	19	2,300
	PEV56R3221M0645	220	0645	700	17	2,300
	PEV56R3221M0606	220	0606	277	15	3,160
	PEV56R3221M0807	220	0807	277	22	3,220
	PEV56R3331M0606	330	0606	416	17	3,390
	PEV56R3561M0610	560	0610	705	10	4,500
16/18.4 V5	PEV516V101M0506	100	0506	320	26	3,000
	PEV516V101M0606	100	0606	320	24	2,490
	PEV516V181M0606	180	0606	576	21	3,300
	PEV516V271M0610	270	0610	864	16	3,500
	PEV516V271M0807	270	0807	864	22	3,300
	PEV516V271M0810	270	0810	864	16	4,400
	PEV516V331M0810	330	0810	1,056	13	4,700
	PEV516V471M0810	470	0810	1,504	12	4,700
	PEV516V561M0812	560	0812	1,792	14	4,950
25/2V5 8.8	PEV525V220M0645	22	0645	275	45	2,500
	PEV525V270M0606	27	0606	338	40	2,100
	PEV525V470M0606	47	0606	235	30	2,500

# Conductive Polymer Aluminum Solid Capacitor – V Chip Type

PEV5 Series

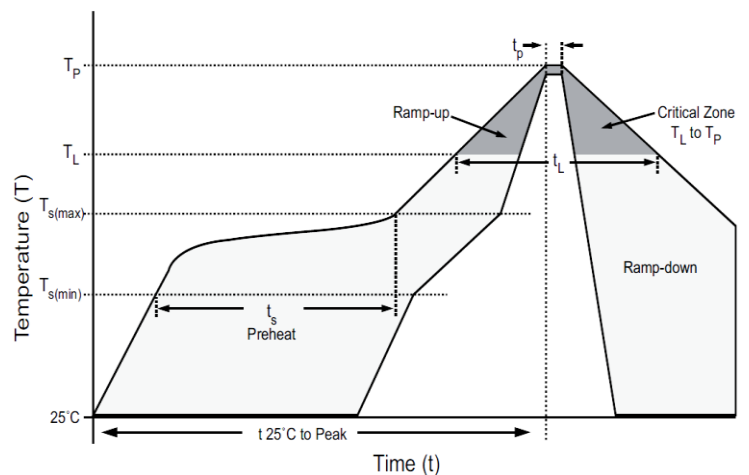
MERITEK

## 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 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

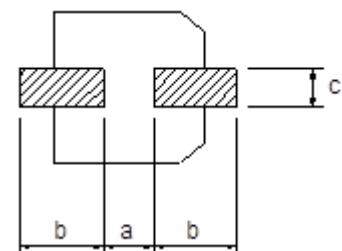
## RECOMMENDED SOLDERING PROFILES

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 <sup>-0/+5</sup> °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
∅10	4.3	4.4	1.9

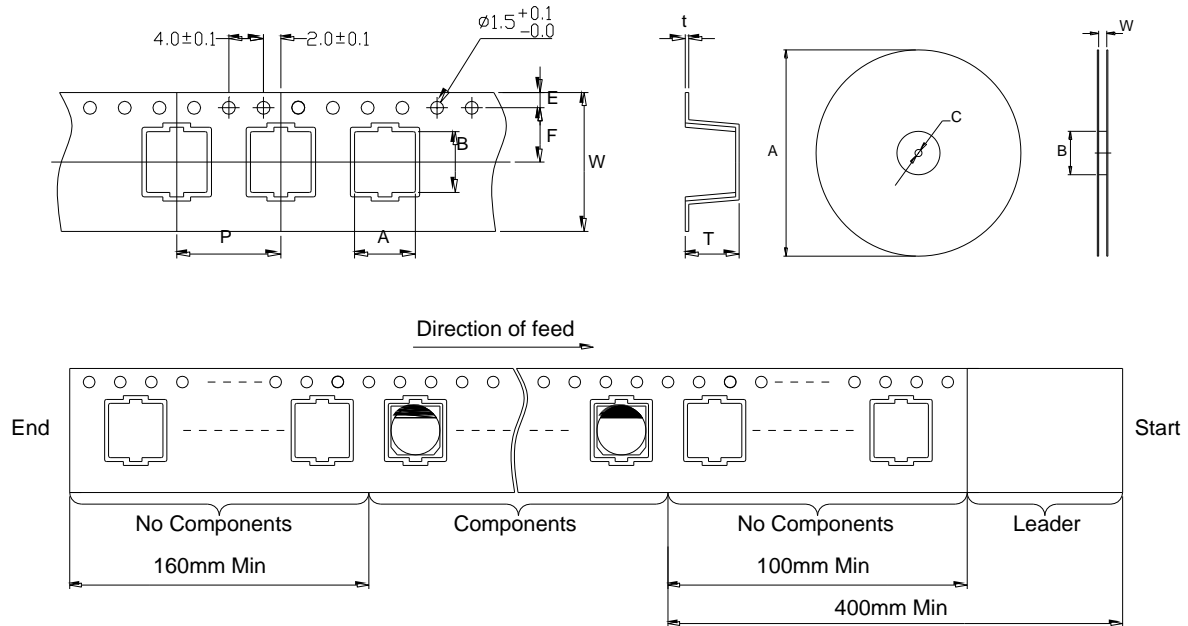


# Conductive Polymer Aluminum Solid Capacitor – V Chip Type

PEV5 Series

MERITEK

## 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)
ø5	381	100	13	13.5	2.5
ø6	381	100	13	16.5	2.5
ø8	381	100	13	25	2.5
ø10	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)