# Conductive Polymer Aluminum Solid Capacitor –Radial Type

PEEA Series

MERITEK

## FEATURE

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

## PART NUMBERING SYSTEM

PEEA (1) 6R3 (2) 331 (3) M (4) 0606 (5)

RoHS

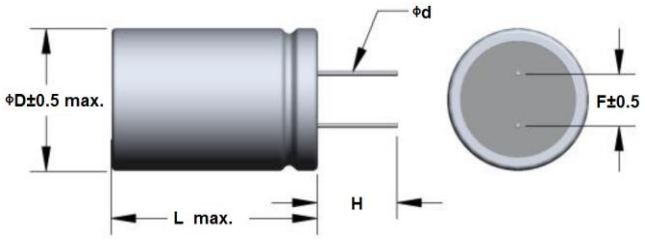
| No | Item | Digit | Description | Series Reference |
|---|---|---|---|---|
| (1) | **Meritek Series** | PEEA | Conductive Polymer Aluminum Solid Cap | Radial Type |
| (2) | **Rated Voltage** | 6R3 | 6R3: 6.3VDC | 2R5: 2.5VDC, 16V: 16VDC |
| (3) | **Capacitance** | 331 | 331: 330µF | 221: 220µF, 561: 560µF, 101: 100µF |
| (4) | **Tolerance** | M | M: ±20% | -20% ~ +20% |
| (5) | **Size Code** | 0606 | Diameter X Length: 6.0X6.0 mm | 0609, 0812 |

## ELECTRICAL SPECIFICATIONS

| Item | Characteristics | | |
|---|---|---|---|
| **Operating Temperature Range** | -55°C ~ +105°C | | |
| **Rated Working Voltage** | 2.5VDC ~ 25VDC | | |
| **Capacitance** | 27µF ~ 560µF | | |
| **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 max. | Φd±0.5 | F±0.4 | H±0.3 |
|---|---|---|---|---|---|
| 0606 | 6.3 | 6.0 | 0.45 | 2.5 | 3.2 |
| 0609 | 6.3 | 9.0 | 0.6 | 2.5 | 3.2 |
| 0812 | 8.0 | 12.0 | 0.6 | 3.5 | 3.2 |



# Conductive Polymer Aluminum Solid Capacitor –Radial Type

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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 | PEEP2R5561M0606 | 560 | 0606 | 280 | 10 | 3,900 |
| 6.3/7.2 | PEEP6R3221M0606 | 220 | 0606 | 277 | 15 | 3,160 |
| | PEEP6R3331M0606 | 330 | 0606 | 416 | 17 | 3,390 |
| 16/18.4 | PEEP16V101M0606 | 100 | 0606 | 320 | 24 | 2,490 |
| | PEEP16V101M0609 | 100 | 0609 | 320 | 25 | 2,820 |
| 25/28.8 | PEEP25V270M0606 | 27 | 0606 | 135 | 40 | 2,100 |
| | PEEP25V330M0606 | 33 | 0606 | 165 | 60 | 1,700 |
| | PEEP25V470M0606 | 47 | 0606 | 235 | 30 | 2,500 |
| | PEEP25V680M0812 | 68 | 0812 | 340 | 24 | 3,380 |
| | PEEP25V101M0812 | 100 | 0812 | 500 | 22 | 3,600 |

## RELIBILITY

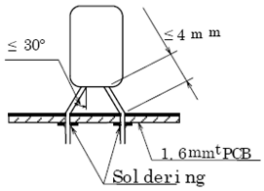
| Item | Characteristics | | |
|---|---|---|---|
| Endurance | Appearance | No significant damage | 105°C, 2000 hours, rated voltage applied |
| | Capacitance Change | ≤ ±20% of the initial value | |
| | Dissipation Factor | ≤ 150% of the initial specified value | |
| | ESR | ≤ 150% of the initial specified 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 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 |
| 10 | 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 |

## RELIBILITY (CONTINUED)

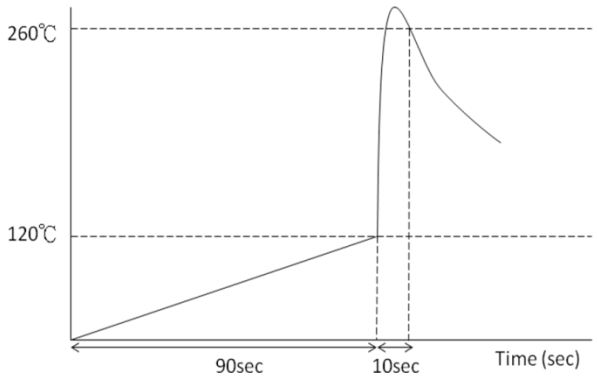
| Item | Characteristics | | |
|---|---|---|---|
| **Vibration** | Vibration cycle should vary from 10 to 55Hz with total amplitude of 1.5mm and return to 10Hz in about 1 minute. Vibration applied to a capacitor should be three directions, which each perpendicular to the other two as longitudinal axis 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 | | 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 |
| **Rapid Temperature Change** | Appearance | No significant damage | Temperature cycle:<br>-55°C: 30±5mins<br>-55°C to 105°C: ≤3mins<br>105°C:30±5mins<br>105°C to -55°C: ≤3mins<br>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 |
|---|---|---|---|
| 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) |
| 0812 | 500 PCS | 4 bags (2,000 PCS) | 5 inner boxes (10,000 PCS) |