ISOA Thick Film Power Resistor

High Energy, Power Capabilities, and Thermal Monitoring for Applications Requiring Multi-Pulse Handling

ADVANTAGE
Competitive high power and high energy handling AEC-Q200 qualified resistor in a small SOT-227 package.

MARKETS AND APPLICATIONS

MOBILITY
• Active discharge, precharge, and passive discharge (DC-Link capacitor discharge during car switching OFF)

ENERGY SECTOR
• HVDC light

INDUSTRIAL
• Power conversion and snubber

KEY PRODUCT FEATURES
✓ AEC-Q200 qualification
✓ High energy capability up to 110 J / 0.1 s qualified pulse trains: 230 J / 670 ms for 3k cycles / 350 J / 1060 ms for 5k cycles
✓ Optional NTC thermistor integrated in the ISOA package available (two terminations for resistor / two terminations for NTC)

DID YOU KNOW...
The ISOA thick film power resistor with an optional NTC thermistor and PC-TIM simplifies designs, saves board space, and lowers costs.

RESOURCES
Order Samples  Product Page  Contact Us  Application Notes  Application Notes  3D Models
ADDITIONAL BENEFITS

- High power dissipation capability: ISOA can dissipate up to 120 W
- The ISOA can be delivered with pre-applied phase change thermal interface material in order to help streamline installation in production
- SOT-227 without metal tab is compact and low profile. The ISOA can include two resistors in one package

AEC-Q200 Testing for ISOA

<table>
<thead>
<tr>
<th>Tests</th>
<th>Conditions</th>
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<tbody>
<tr>
<td>High temperature exposure</td>
<td>MIL-STD-202 method 108 Condition: 1000 h at T = 155 °C. Unpowered</td>
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<tr>
<td>Temperature cycling</td>
<td>JESD22 method JA-104 1000 cycles (-55 °C to +125 °C)</td>
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<td>Biased humidity</td>
<td>MIL-STD-202 method 103 Condition: 1000 h 85 °C / 85 % RH, 10 % of operating power 10 W</td>
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<tr>
<td>Operational life</td>
<td>MIL-STD-202 method 108 Condition: D steady state TA = 85 °C of bottom case at rated power 120 W 90' On / 30' off / 1000 h</td>
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<tr>
<td>ESD</td>
<td>AEC-Q200-002 Condition: 6 kV to 25 kV</td>
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<tr>
<td>Vibration</td>
<td>MIL-STD-202 method 204 Condition B: 10 g’s for 20 min for 1 cycle, 12 cycles each of 3 orientations (total of 36). Test from 10 Hz to 2000 Hz</td>
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<tr>
<td>Mechanical shock</td>
<td>MIL-STD-202 method 213 Fig. 1 Condition C: 100 g’s/6 ms 3.75 m/s 3 shock/direction, 2 directions along 3 axes (18 shocks)</td>
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<tr>
<td>Terminal strength (leaded)</td>
<td>MIL-STD-202 method 211 Test leaded device lead integrity only. Conditions: A (2.27 kg)</td>
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Pulse capabilities

Multi-pulse testing and reliability is critical for long term safety.

Vishay can custom-build some tests if necessary. The ISOA has passed below pulse trains: 230 J / 670 ms for 3k cycles and 350 J / 1060 ms for 5k cycles.

Superior performance and options make the ISOA an ideal choice for critical automotive power applications that require long term stability and safety monitoring. Please contact us if you need R&D support on precharge / discharge applications.