DPAK Medium-Power Thick Film Resistor

KEY BENEFITS
- AEC-Q200 qualified
- High-power SMD, up to 3 W on PCB
- 25 W at 25 °C case temperature
- Surface-mount resistor – TO-252 (DPAK) style package
- Wide resistance range: 0.016 Ω to 700 kΩ
- Non inductive
- Resistor isolated from metal tab
- Solder reflow secure at 270 °C / 10 s, MSL = 1

APPLICATIONS
- Hybrid vehicles
- Electric vehicles
- Fuel cell vehicles
- Control boards
- UPS

RESOURCES
- Thermal Management Application: www.vishay.com/doc?52027
- For technical questions contact sferfixedresistor@vishay.com
- Material categorization: For definitions please see www.vishay.com/doc?99912
DPAK Medium-Power Thick Film Resistor

**DIMENSIONS** in millimeters

![Dimensions Diagram]

**Notes**
- For the assembly, we recommend the lead (Pb)-free thermal profile as per J-STD-020C.
- Power dissipation is 3 W at an ambient temperature of 25 °C when mounted on a double sided copper board using FR4 standard, 70 μm of copper, 39 mm x 30 mm x 1.6 mm.
- For other information about dissipation, see the Application Note 52027: “Thermal Management on SMD Thick Film Resistors (D2TO20, D2TO35, DTO25).”

### STANDARD ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>SIZE</th>
<th>RESISTANCE RANGE</th>
<th>RATED POWER</th>
<th>LIMITING ELEMENT VOLTAGE</th>
<th>TOLERANCE (%)</th>
<th>TEMPERATURE COEFFICIENT ppm/°C</th>
<th>CRITICAL RESISTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTO25</td>
<td>TO-252</td>
<td>0.016 to 700K</td>
<td>25</td>
<td>200</td>
<td>1, 2, 5, 10</td>
<td>150</td>
<td>1.8</td>
</tr>
</tbody>
</table>

### MECHANICAL SPECIFICATIONS

- **Mechanical Protection**: Molded
- **Resistive Element**: Thick film
- **Substrate**: Alumina
- **Connections**: Tinned copper, Ni under layer
- **Weight**: 2 g max.

### ENVIRONMENTAL SPECIFICATIONS

- **Temperature Range**: -55 °C to 150 °C
- **Climatic Category**: 55 / 150 / 56
- **Flammability**: IEC 60695-11-5 2 applications 30 s separated by 60 s

### SAP PART NUMBERING GUIDELINES

**GLOBAL MODEL**

- DTO

**SIZE**

- 025

**LEADS**

- C = surface mount

**OHMIC VALUE**

The first four digits are significant figures and the last digit specifies the number of zeros to follow. R designates decimal point.

- 48R70 = 48.7 Ω
- 48701 = 48,700 Ω
- 10002 = 100 000 Ω
- R0100 = 0.01 Ω
- R6800 = 0.68 Ω
- 27000 = 27,000 Ω = 2.7 MΩ

**TOLERANCE**

- F: ± 1%
- G: ± 2%
- J: ± 5%
- K: ± 10%

**PACKAGING**

- R = reel
- 500 pieces
- T = tube
- 50 pieces

**LEAD (Pb)-FREE**

- E3 = pure tin