

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 k Ω
- Non inductive
- Resistor isolated from metal tab
- Solder reflow secure at 270 °C / 10 s, MSL = 1

APPLICATIONS

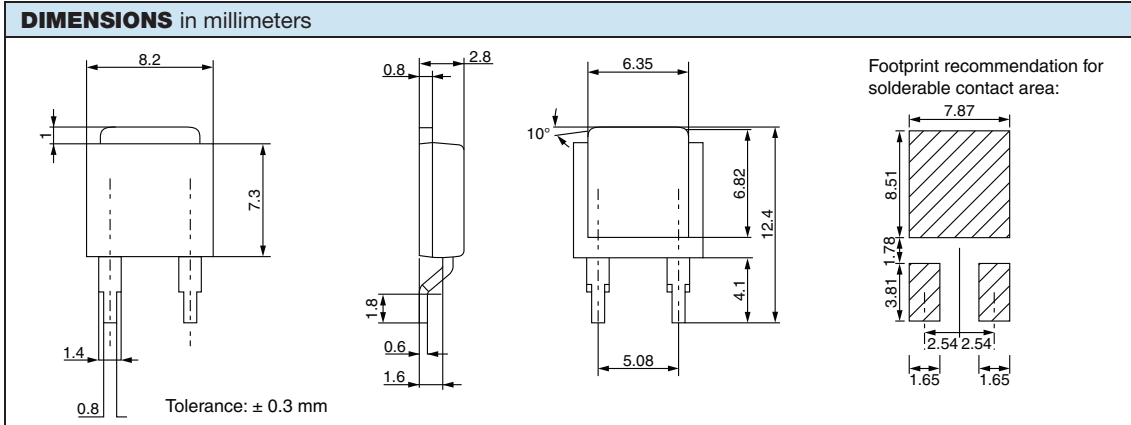
- Hybrid vehicles
- Electric vehicles
- Fuel cell vehicles
- Control boards
- UPS

RESOURCES

- Datasheet: DTO25 - www.vishay.com/doc?51054
- 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



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)".

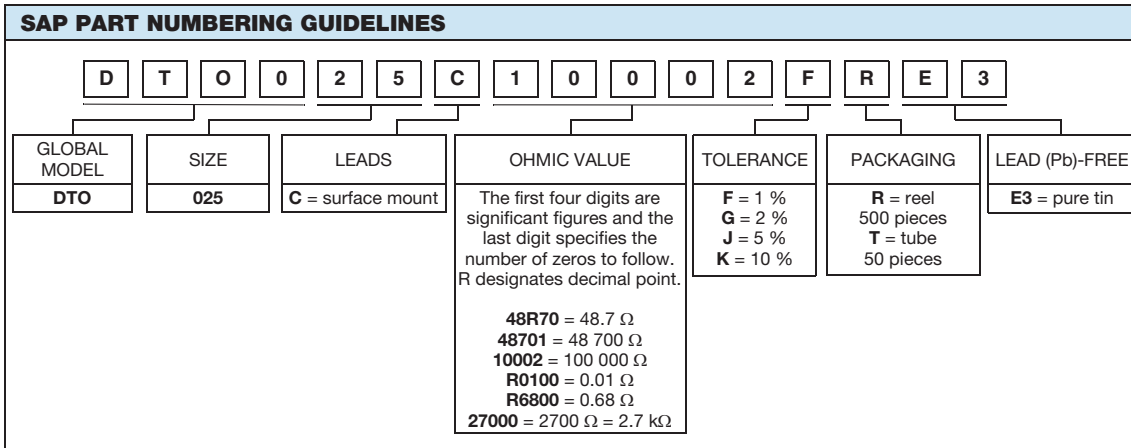
STANDARD ELECTRICAL SPECIFICATIONS							
MODEL	SIZE	RESISTANCE RANGE Ω	RATED POWER $P_{25\text{ }^\circ\text{C}}$ W	LIMITING ELEMENT VOLTAGE U_L V	TOLERANCE ± %	TEMPERATURE COEFFICIENT ± ppm/°C	CRITICAL RESISTANCE Ω
DTO25	TO-252 (DPAK)	0.016 to 700K	25	200	1, 2, 5, 10	150	1.6K

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

ELECTRICAL SPECIFICATIONS	
Tolerances	From 0.016 Ω to 0.047 Ω: ± 5 % and ± 10 % > 0.047 Ω to 0.1 Ω: ± 2 % to ± 10 % ≥ 0.1 Ω: ± 1 % to ± 10 %
Power Rating and Thermal Resistance	25 W at +25 °C case temperature $R_{TH(j-c)}$: 5 °C/W
Temperature Coefficient	See Special Feature table ± 150 ppm/°C
Dielectric Strength	1500 V_{RMS} - 1 min - 15 mA max. (between terminals and board)
Insulation Resistance	≥ 10 ⁴ MΩ
Inductance	≤ 0.1 µH

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

DIMENSIONS	
Standard Package	TO-252 style (DPAK)



Revision: 18-Dec-14