

Data Sheet

Customer: _____

Product: Power Resistor – TR50 Series _____

Size : TO-220 _____

Issued Date: 01-Jul.-2025 _____

Edition: Ver. 3 _____

Record of change

Date	Ver.	Description	page
30-Nov.-2017	1		
13-Jul.-2023	2	Parameters updated	1~2
01-Jul.-2025	3	Modify Features&Applications&Derating Curve&Dimensions&Part Numbering &Electrical Characteristics Specifications &Environmental Characteristics,Add Power Curve	1~3

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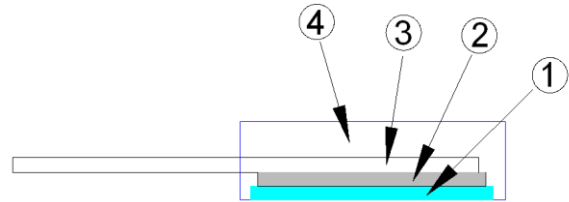
Prepared by	Checked by	Approved by	Accepted by (customer)
01-Jul.-2025	01-Jul.-2025	01-Jul.-2025	
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TO-220 Power Resistor

【TR50 Series】



Construction



① Alumina Substrate	③ Lead
② Resistor Layer	④ Molding

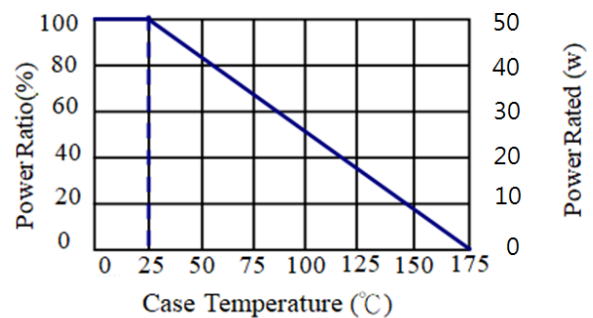
Features

- 50 watts at 25°C case temperature heat sink mounted
- TO-220 style power package
- Single screw mounting to heat sink
- Molded case for protection and easy to mount
- Electrically isolated case
- Non-Inductive design

Applications

- Gate Resistors in Power Supplies
- Snubbers
- Load and Dumping in Resistors in CRT Monitors
- Automated Machine Controller
- Terminal Resistance in RF Power Amplifiers
- Voltage Regulation
- Low Energy Pulse Loading
- UPS

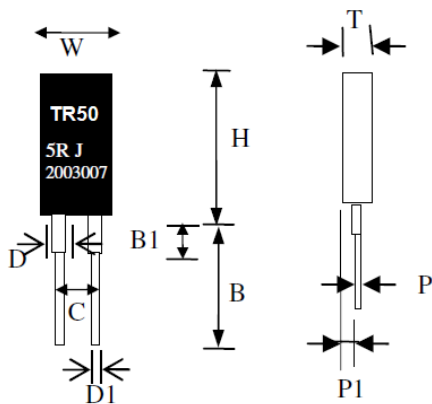
Derating Curve



Derating Curve Slope : 0.333W/°K

Thermal resistance : 3.00°K/W

Dimensions



Type	W (mm)	H (mm)	B (mm)	B1 (mm)	C (mm)	D (mm)	D1 (mm)	T (mm)	P (mm)	P1 (mm)	Weight (g) (1000pcs)	Packaging
												Tube
TR50	10.41 ±0.26	16.26 ±0.26	12.70 ±1.27	3.3 ±0.76	5.08 ±0.26	1.27 ±0.13	0.8 ±0.15	3.18 ±0.26	0.50 ±0.10	1.78 ±0.26	1290	50pcs

TO-220 Power Resistor

【TR50 Series】

Part Numbering

TR	50	J	U	D	1001
Product Type	Power	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Resistance
	50: 50 Watts	D: ±0.5% F: ±1% J: ±5% K: ±10%	U: Tube	D: ±50 E: ±100 F: ±200 G: ±300 - : No Specified (±300~±700)	R100: 0.1Ω 0100: 10Ω 4700: 470Ω 1001: 1000Ω 1002: 10000Ω

Electrical Characteristics Specifications

Type	Item	Resistance Range				TCR (PPM/°C)
		±0.5%	±1%	±5%	±10%	
TR50	-	-	0.05Ω - 0.1Ω		No Specified (±300~±700)	
	-	≥ 0.1Ω - 1Ω			±300	
	-	≥ 1Ω - 5Ω			±100 ±200 ±300	
	≥ 5Ω - 10Ω			±100 ±200 ±300		
	≥ 10Ω - 100KΩ			±50 ±100 ±200		

- Operating Voltage: 350V Max.
- Dielectric Strength: 1800VAC
- Insulation Resistance: 10GΩ min.
- Operating Temperature Range: -65°C to +175°C

Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	Referenced to 25°C, ΔR taken at +105°C
Short Time Overload	ΔR±0.3%	2 times rated power with applied voltage not to exceed 1.5 times maximum continuous operating voltage for 5 seconds
Load Life	ΔR±1.0%	2,000 hours at rated power
Damp Heat with Load	ΔR±0.5%	40±2°C, 90~95% R.H., RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Solderability	90% min. coverage	245±5°C for 3 seconds
Thermal Shock	ΔR±0.3%	-65°C ~150°C, 100 cycles
Terminal Strength	ΔR±0.2%	(Pull Test) 2.4N
Vibration, High Frequency	ΔR±0.2%	20g peak

- Lead Material: Tinned Copper
- Maximum Torque: 0.9 N·m
- When in Free Air at 25°C, the TR50 is Rated for 3W.
- The Case Temperature is to be used for the Definition of the Applied Power Limit.
- The Case Temperature Measurement must be made with a Thermocouple Contacting the Center of the Component mounted on the Designed Heat Sink.
- Thermal Grease Should be Applied Properly.
- Storage Temperature: 25±5°C; Humidity: < 75%RH
- Shelf life: 1 years Max

■ **Power Curve**

