Data Sheet

Customer:	
Product:	**TO-220 Power Resistor – TR50-H Series**
Size.:	**50W**
Issued Date:	**02-Oct-26**
Edition:	**REV.B3**

RoHS Compliant

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02-Oct-26	02-Oct-26	02-Oct-26	02-Oct-26	
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TO-220 Power Resistor

■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



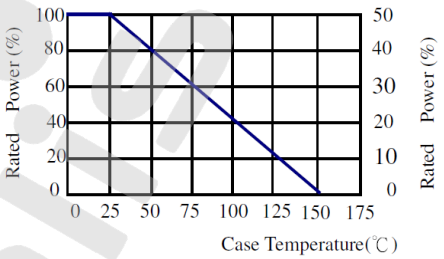


■Two styles (no round holes and two small round holes) side by side.

■Applications

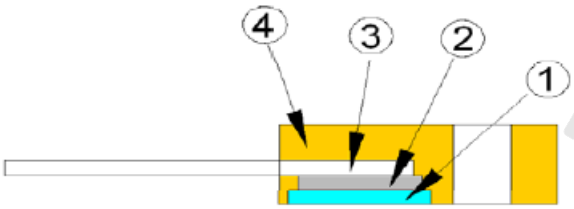
- Gate Resistors in Power Supplies
- Snubbers
- Load and Dumping in Resistors in CRT Monitors
- Automated Machine Controller
- Terminal Resistance in RF Power Amplifiers
- Low Energy Pulse Loading
- UPS
- Voltage Regulation

■Derating Curve



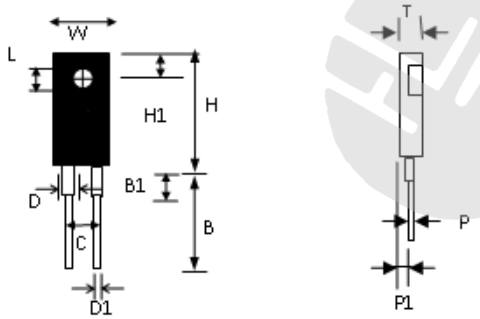
Derating Curve Slope：0.4W/°K ；Tthermal resistance：3.7°K/W

■Construction



①	Alumina Substrate	③	Lead
②	Resistor Layer	④	Molding

■Dimensions



Type	W (mm)	L (mm)	H (mm)	H1 (mm)	B (mm)	B1 (mm)	C (mm)	D (mm)	D1 (mm)	T (mm)	P (mm)	P1 (mm)	Weight (g) (1000pcs)	Packaging Tube
TR50	10.44 ±0.24	3.18 ±0.3	16.25 ±0.25	3.18 ±0.3	12.70 ±1.3	3.3 ±0.76	5.08 ±0.26	1.27 ±0.13	0.76 ±0.1	3.18 ±0.26	0.55 ±0.1	1.78 ±0.26	1290	50pcs

■Part Numbering

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

■Electrical Characteristics Specifications

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

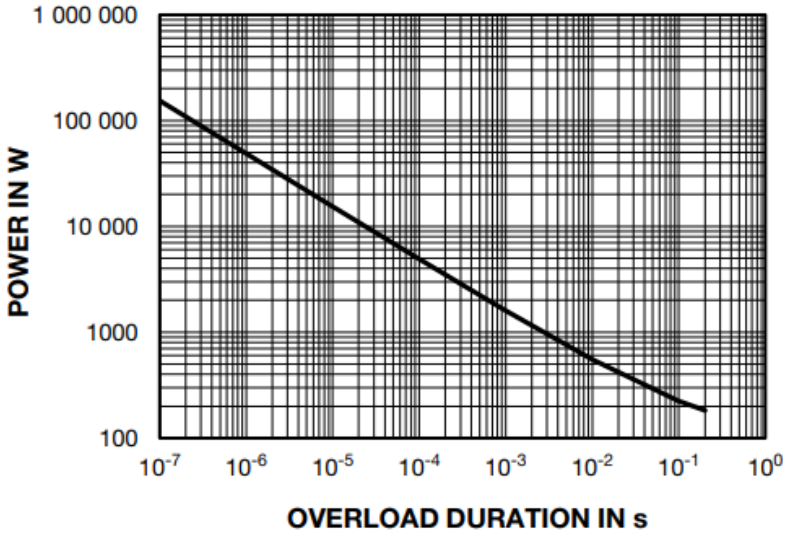
- Operating Voltage: 350V Max.
- Dielectric Strength: 2000VAC
- Insulation Resistance: 10GΩ min.
- Operating Temperature Range: -55°C to +150°C

■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: 0.9N-m
- When in Free Air at 25°C, the TR50-H is Rated for 2.25W.
- 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


1 000 000
100 000
10 000
1000
100
POWER IN W
10-7
10-6
10-5
10-4
10-3
10-2
10-1
100
OVERLOAD DURATION IN s

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version B	Mar 31 ,2025		-Add Shelf life.
Version B1	May 14 ,2025		-Modify the TCR specification for 0.05Ω – 0.1Ω from No Specified to No Specified (±300~±700) -Modify the TCR specification for ≥0.1Ω – 1Ω from No Specified to ±300 -Remove the TCR ±50 specification for both ≥1Ω – 5Ω and ≥5Ω – 10Ω ranges -Modify the Dielectric Strength from 1800VAC to 2000VAC. -Add Power Curve.
Version B2	Jun 03 ,2025		-Add product image (two small round holes). -Add TCR ±50 specification for both ≥1Ω – 5Ω and ≥5Ω – 10Ω ranges.
Version B3	Oct 02,2026		-Added dimensions L and H1