

Data Sheet

Customer: _____

Product: Power Resistors – TR50 Series _____

Size : TO-220 _____

Issued Date: 13-July-2023 _____

Edition: Ver. 2 _____

Record of change

Date	Ver.	Description	Page
30-Nov.-2017	1		
13-July-2023	2	Parameters updated	1 ~ 2

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13-July-2023	13-July-2023	13-July-2023	
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TO-220 Power Resistors

(TR50 Series)

■ Features

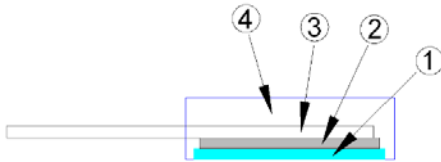
- 50 Watts at 25°C case temperature heat sink mounted
- To-220 style power package
- Molded case for protection and easy to mount
- Electrically isolated case
- Non-Inductive design

■ Applications

- Switching Power Supplies
- Non-inductive Design for High Frequency
- Pulsing Applications
- Voltage Regulation
- UPS



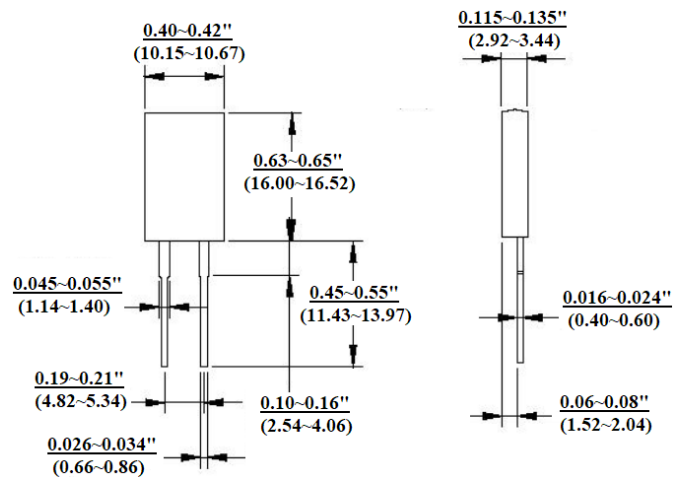
■ Construction



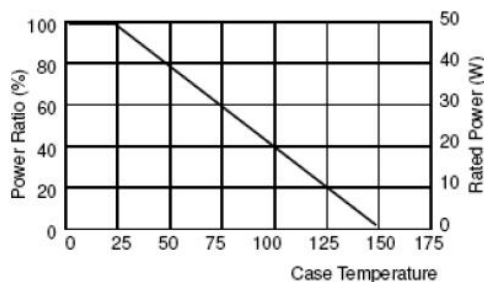
1	Alumina Substrate	3	Lead
2	Resistor Layer	4	Molding

■ Dimensions (Unit:mm)

Type	Weight(g) (1000pcs)	Packaging
		Tube
TR50	1290	50 pcs



■ Derating Curve



TO-220 Power Resistors

(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	R100:0.1Ω 0100:10Ω 4700:470Ω 1001:1000Ω 1002:10000Ω

Electrical Characteristics Specifications

Item Type	Resistance Range				TCR (ppm/°C)
	±0.5%	±1%	±5%	±10%	
TR50	-	1Ω	0.05Ω - 1Ω		No Specified
	-	> 1Ω - 3Ω			±300
	-	> 3Ω - 10Ω			±100 ±200
	-	> 10Ω - 100KΩ			±50 ±100 ±200

- ※Operating Voltage: 350V Max.
- ※Dielectric Strength: 1800VAC
- ※Insulation Resistance: 10GΩ Min.
- ※Operating Temperature Range: -65°C ~ +150°C
- ※Resistance Value < 1Ω is available

Environmental Characteristics

Test 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%	2times rated power with applied voltage not to exceed 1.5times 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 1.5hrs "ON" and 0.5hrs "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
- ※Without a Heat Sink, 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
- ※RCWV(Rated Continuous Working Voltage)=√(P*R) or Max. Operating Voltage whichever is lower.
- ※Storage Temperature: 25±5°C ; Humidity:<75% RH