

Data Sheet

Customer: _____

Product: POWER RESISTOR – TR20 Series _____

Size : TO-220 _____

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Record of change

Date	Ver.	Description	Page
30-Nov.-2017	1		

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30-Nov.-2017	30-Nov.-2017	30-Nov.-2017	
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TO-220 Power Resistor (TR20 Series)

■ Features

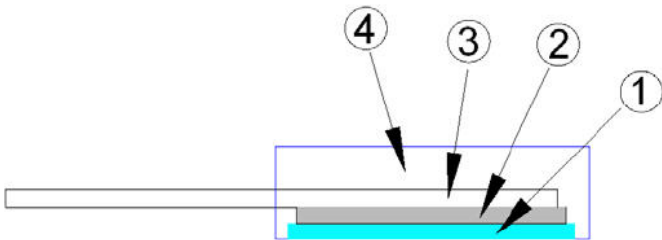
- 20 Watts at 25°C case temperature heat sink mounted
- To-220 style power package
- Molded case for protection and easy to mount
- Electrically isolated case
- Non-Inductive design

■ Applications

- High Speed Switching Power Supplies
- Snubber Circuits
- Load Resistor for Pulse Generators
- Voltage Regulation
- VHF Amplifiers



■ Construction

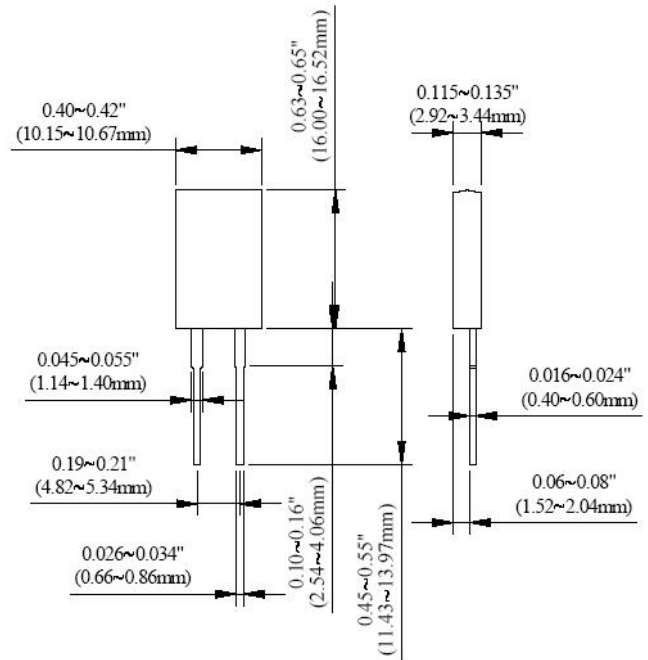


1	Alumina Substrate	3	Lead
2	Resistor Layer	4	Molding

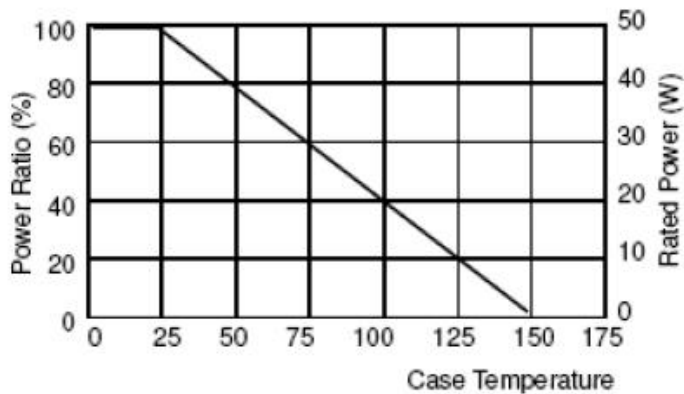
■ Dimensions

Unit:mm

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



■ Derating Curve



Part Numbering

TR	20	J	U	D	1001
Product Type	Power	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Resistance
	20:20 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%	
TR20	-	1Ω	0.1Ω -1Ω		No Specified
	-	>1Ω -3Ω			±300
	-	>3Ω -10Ω			±100 ±200
	>10Ω -10KΩ				±50 ±100 ±200

- Operating Voltage: 350V max.
- Dielectric Strength: 1800VAC
- Insulation Resistance: 10GΩmin
- Working Temperature Range:-65°C to +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%	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. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Solder ability	90% min. coverage	245±5°C for 3 seconds
Thermal Shock	ΔR±0.3%	-65°C~150°C, 100 cycles
Thermal 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 TR20 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