



LIEAN GIMN ENTERPRISE CO., LTD.

Data Sheet

Customer :

Product Type: TO-220 Power Resistors

Part No.: TR20 Series

Issued Date: 31-Oct-08

Document No TR20 Series REV.A7



Produced by (QC)	Checked (QC)	Approved by (QC)	Prepared by (Sales)	Accepted by (Customer)
31-Oct-08	31-Oct-08	31-Oct-08	31-Oct-08	
<i>Kris</i>	<i>Ann</i>	<i>Judy</i>		

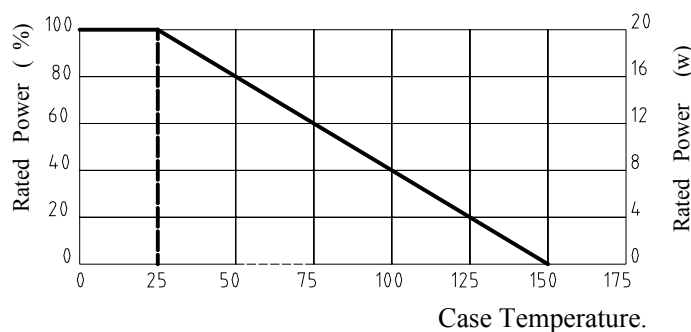
TO-220 Power Resistors (TR20 Series)

Features:

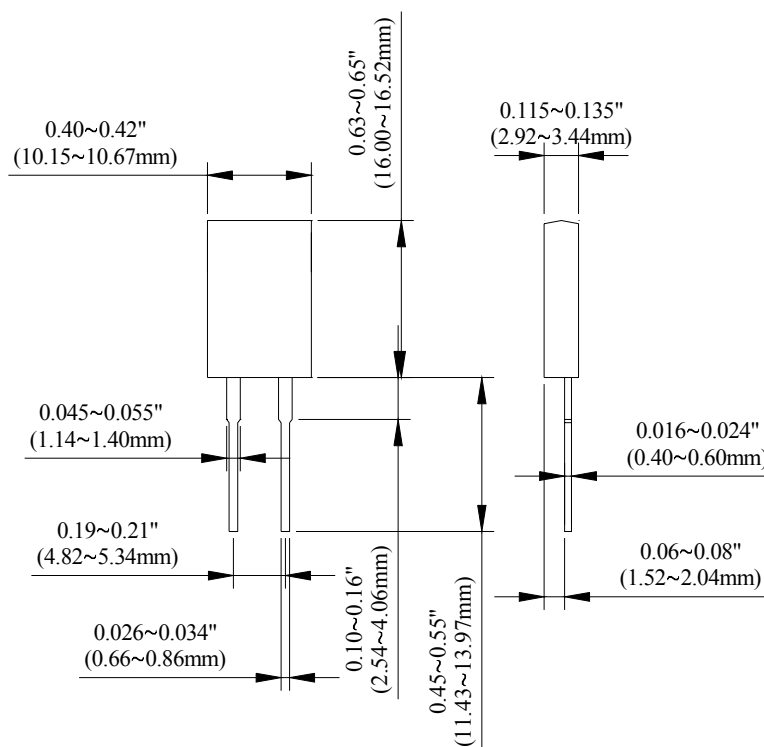
- 20 Watt at 25°C case temperature heat sink mounted
- TO-220 style power package
- Molded case for protection and easy to mount.
- Electrically-isolated case.
- Non-inductive design.

Applications:

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



Dimensions:



Ordering Information:

TR 20 J B D 1001

(1) (2) (3) (4) (5) (6)

(1)Type: TR=TO-220 Power Resistors

(2)Power : 20=20 Watts

(3)Tolerance: D=0.5%, F=1%, J=5%, K=10%

(4) Packaging Style: T=Tube, B=Bulk

(5)TCR: - =No specified, D=±50ppm/°C, E=±100ppm/°C, F=±200ppm/°C, G=±300ppm/°C

(6) Resistance: R050=0.050Ω, R100=0.100Ω, 1R00=1Ω, 1R10=1.1Ω

0100=10Ω, 4700=470Ω, 1001 =1KΩ, 1002=10K



Electrical Characteristics Specifications:

Resistance Range	Resistance Tolerance	TCR (PPM/°C)
0.05Ω ~ 0.1Ω	±5% ±10%	- (No Specified)
>0.1Ω ~ 1Ω	±5% ±10%	- (No Specified)
>1Ω ~ 3Ω	±1% ±5% ±10%	±300
>3Ω ~ 10Ω	±1% ±5% ±10%	±100 ±200
>10Ω ~ 10KΩ	±0.5% ±1% ±5% ±10%	±50 ±100 ±200

*** We are Capable of Manufacturing the Following Options Based on Customer's Requirement.:**

- 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	Specification	Test Method
Temperature Coefficient of Resistance	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 %	MIL-PRF-39009D, 4.8.13 Rated power, 2,000 hours
Humidity (Steady State)	ΔR ± 0.5 %	MIL-STD-202F, Method 103B 40°C, 90~95%RH, RCWV 1.5hours ON, 0.5hours OFF, total 1000~1048 hours
Thermal Shock	ΔR ± 0.3 %	MIL-STD-202F, Method 107G. -65°C ~ 150°C, 100 cycle
Terminal Strength	ΔR ± 0.2 %	MIL-STD-202F, Method 211, Cond. A (Pull Test) 2.4N,
Vibration, High Frequency	ΔR ± 0.2 %	MIL-STD-202F, Method 204, Cond. D,
Solderability	90% Min. Coverage	MIL-STD-202F Method 208H 245°C ± 5°C, 3 ± 0.5(sec)

- 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.