T0-220 POWER RESISTOR
- RTR50-H SERIES -

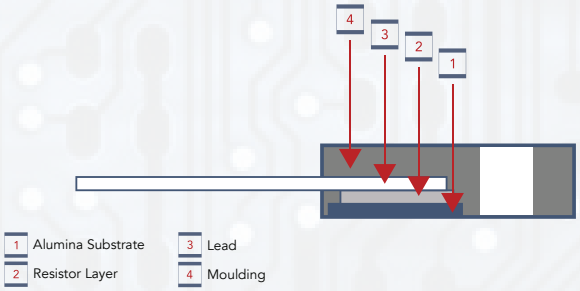
FEATURES

- 50 watts at 25°C case temperature.
- T0-220 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
- Low Energy Pulse Loading
- UPS
- Voltage Regulation

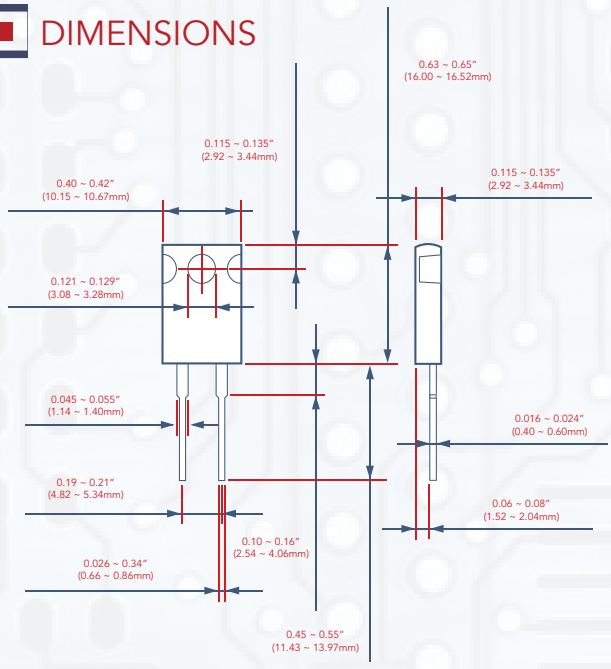
CONSTRUCTION



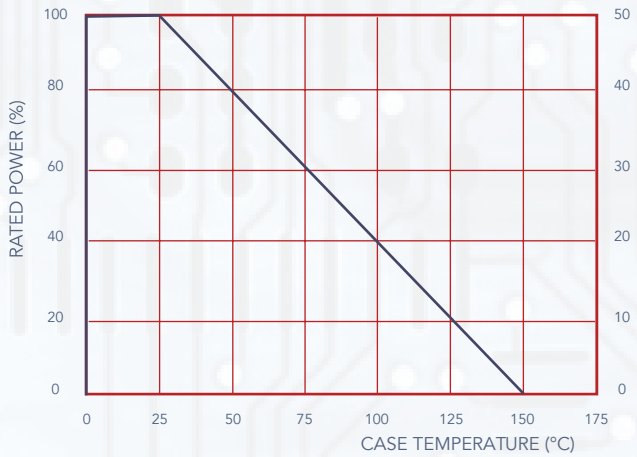
PART NUMBERING

RTR	50	J	D	D	1001	–	H
PRODUCT TYPE	POWER	RESISTANCE TOLERANE	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	R100: 0.1Ω 0100: 10Ω 4700: 470Ω 1001: 1KΩ 1002: 10KΩ		H: Hole

DIMENSIONS



DERATING CURVE



TYPE	WEIGHT (G) (1000 PCS)	PACKAGING TUBE
RTR050	1290	50 PCS

Cal-Chip Electronics Inc.
59 Steamwhistle Drive, Ivyland, PA 18974 | p. 215.942.8900 | www.calchip.com | quotes@calchip.com

ELECTRICAL CHARACTERISTICS SPECIFICATIONS

TYPE / ITEM	RESISTANCE RANGE ±0.5%	±1%	±5%	±10%	TCR (PPM/°C)
RTR050	-	0.05Ω - 1Ω			Not Specified
	-	> 1Ω - 3Ω			±300
	-	> 3Ω - 10Ω			±100 | ±200
	> 10Ω - 10KΩ				±50 | ±100 | ±200
	> 10KΩ - 1MΩ				±200 | ±300

- Operating Voltage: 420 V Max
- Dielectric Strength: 1800VAC
- Insulation Resistance: 10GΩ min.
- Operating Temperature Range: -65°C to +150°C

ENVIRONMENTAL CHARACTERISTICS

ITEM	REQUIREMENT	TEST METHOD
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	Referenced to 25°C, DR 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 RTR50-H 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

INSTALLATION INSTRUCTIONS

- There will be gaps in the fit between the plastic-encapsulated resistor and the heat sink. These voids will greatly degrade the performance of TO220 plastic package resistors. Therefore, it is important to fill these voids with a thermal interface material. Several materials reduce the thermal resistance between the resistor and the surface of the heat sink.

THERMAL GREASE

- Thermal grease is a combination of thermally conductive particles and liquid grease. Thermal greases usually contain silicone oil in their fluid, but there are much better "non-silicon" thermal greases available. Thermal grease has been used for many years and generally has the lowest thermal resistance of all available thermal materials.

INSTALLATION INSTRUCTIONS

THERMAL PADS

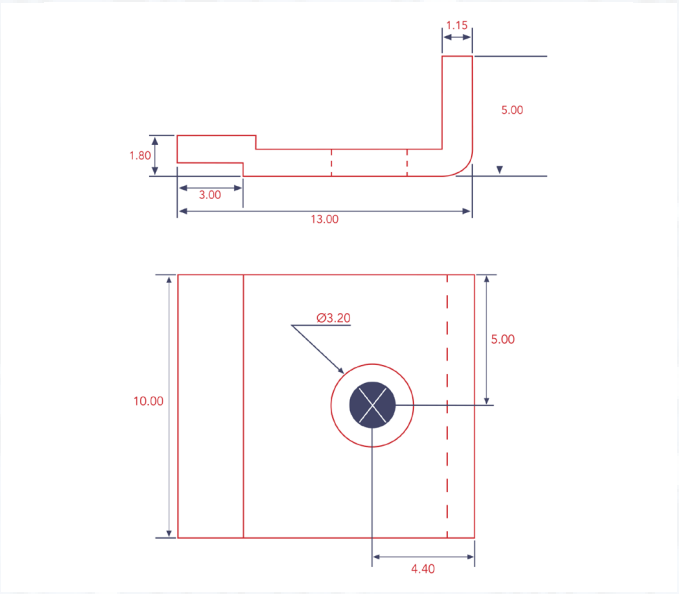
- Thermal pads, which can replace thermal paste, there are many thermal pad manufacturers on the market. These thermal pads are available as solid sheets or pre-cut in various standard design package shapes such as TO-220 and TO-247. When the thermal pad sponge material is mounted, the pressure needs to be consistent and even to effectively exert the performance of the thermal pad.

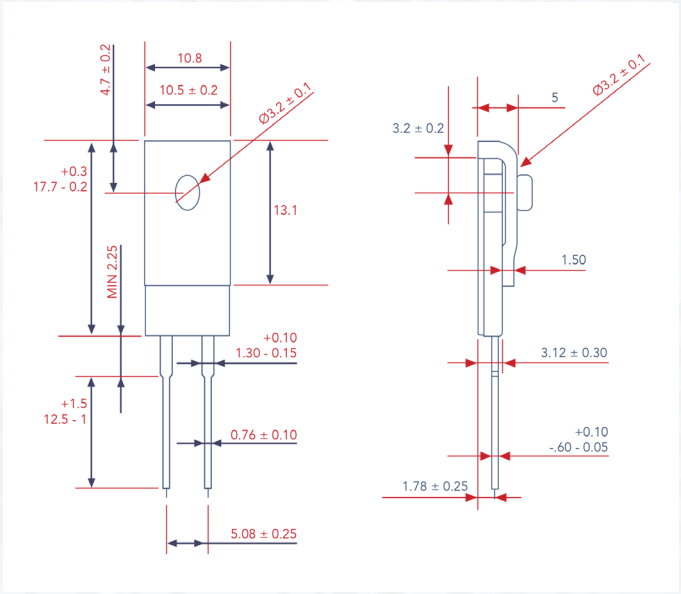
* Do not let the screw head touch the plastic resistor body. Use flat or tapered washers to evenly distribute force

* Avoid using flat head screws to avoid burrs with sharp edges on the screw heads that could damage the heat sink

* Do not over torque the screws. If the screw is over tightened, it may cause cracks or the screw head may slip. Air tools are not recommended.

SHEET METAL / CLIP DIMENSIONS





SHEET METAL / CLIP - PART NO: SMC001

- Mounting Clip is provided with the reisitor at no additional cost.
- Mounting screw and heatsink are not provided.
- Customer is responsible if resistor is damaged by other mounting methods.