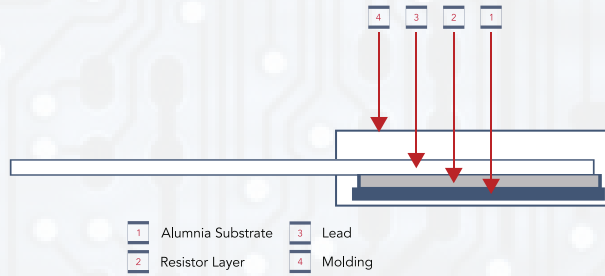# TO-220 POWER RESISTOR
- RTR50 SERIES -

■ 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
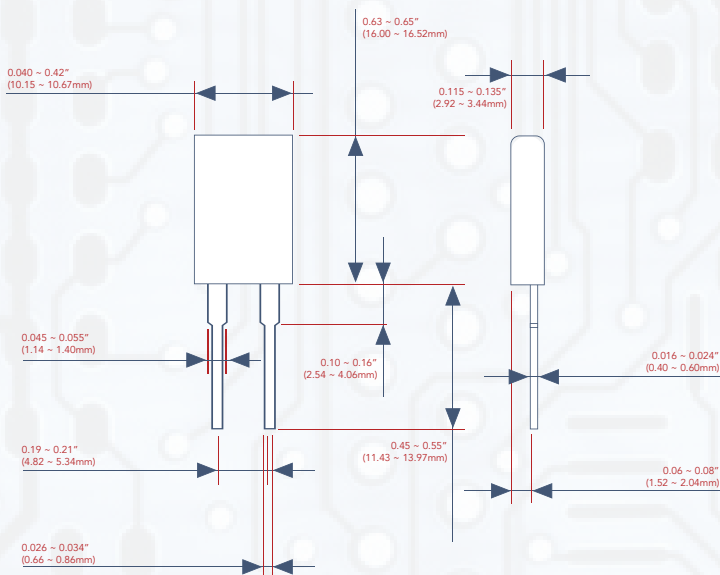- Pulsing Applications
- UPS
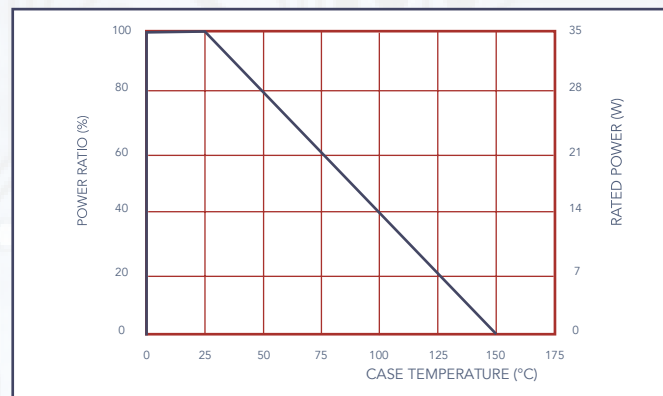- Voltage Regulation

■ CONSTRUCTION

1	Alumnia Substrate	3	Lead
2	Resistor Layer	4	Molding

■ PART NUMBERING

RTR	50	J	1001	B	50
PRODUCT TYPE	POWER	RESISTANCE TOLERANE	RESISTANCE	PACKING CODE	TCR (PPM / °C)
	50: 50 Watts	D: ±0.5% F: ±1% J: ±5% K: ±10%	R100: 0.1Ω 0100: 10Ω 4700: 470Ω 1001: 1KΩ 1002: 10KΩ	B: Bulk	50: ±50 100: ±100 200: ±200 300: ±300

■ DIMENSIONS

0.63 ~ 0.65"
(16.00 ~ 16.52mm)

0.040 ~ 0.42"
(10.15 ~ 10.67mm)

0.115 ~ 0.135"
(2.92 ~ 3.44mm)

0.045 ~ 0.055"
(1.14 ~ 1.40mm)

0.10 ~ 0.16"
(2.54 ~ 4.06mm)

0.016 ~ 0.024"
(0.40 ~ 0.60mm)

0.19 ~ 0.21"
(4.82 ~ 5.34mm)

0.45 ~ 0.55"
(11.43 ~ 13.97mm)

0.06 ~ 0.08"
(1.52 ~ 2.04mm)

0.026 ~ 0.034"
(0.66 ~ 0.86mm)

TYPE	WEIGHT (G) (1000 PCS)
RTR50	1290

■ DERATING CURVE

POWER RATIO (%) / RATED POWER (W) vs CASE TEMPERATURE (°C)

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RoHS   HF

■ ELECTRICAL CHARACTERISTICS SPECIFICATIONS

TYPE \ ITEM	RESISTANCE RANGE				TCR (PPM/°C)
	±0.5%	±1%	±5%	±10%	
RTR50	-	-	0.01Ω - 1Ω		Not Specified
	-	≥ 1Ω - 3Ω			± 300
	-	≥ 3Ω - 10Ω			±100 | ±200
	≥ 10Ω - 10KΩ				±50 | ±100 | ±200

- Operating Voltage: 350V Max
- Dielectric Strength: 1800VAC
- Insulation Resistance: 10GΩ min.

- Working Temperature Range: -65°C to +150°C
- Resistance Value <1Ω is available

■ 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

RCWV (Rated Continuous Working Voltage) $-\sqrt{(P*R)}$ or Max. Operating Voltage whichever is lower.

- Lead Material: Tinned Copper
- Without a Heat Sink, when in Free Air at 25°C, the RTR50 is Rated for 2.50W.
- 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.

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