

TO-220 Power Resistors – TR35 Series



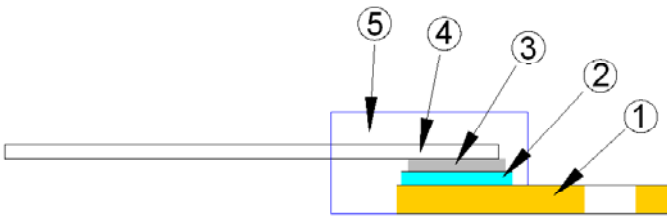
■ Features

- 35 watts at 25°C case temperature heat sink mounted
- TO-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

- Switching Power Supplies
- Snubbers Circuits
- Automated Machine Controller
- RF Power Amplifiers
- Low Energy Pulse Loading
- UPS
- Voltage Regulation

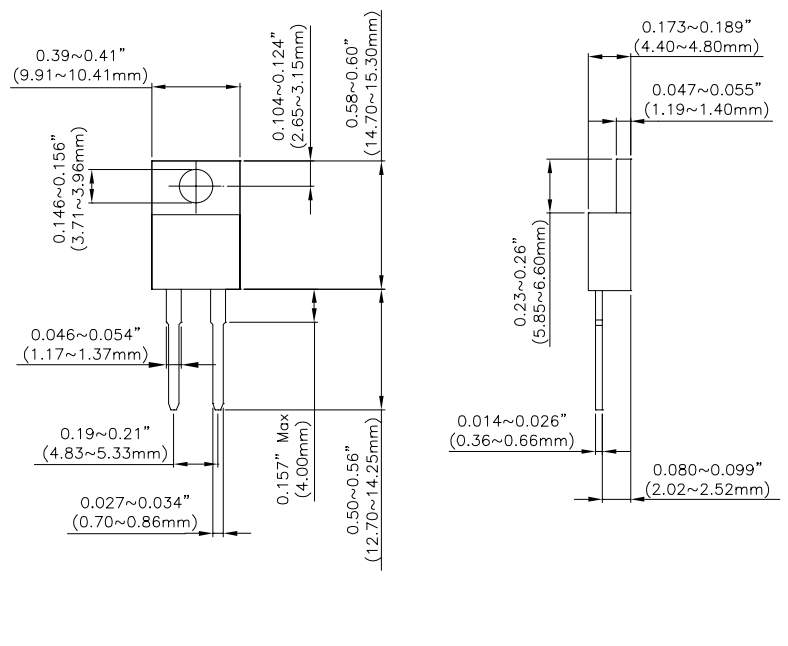
■ Construction



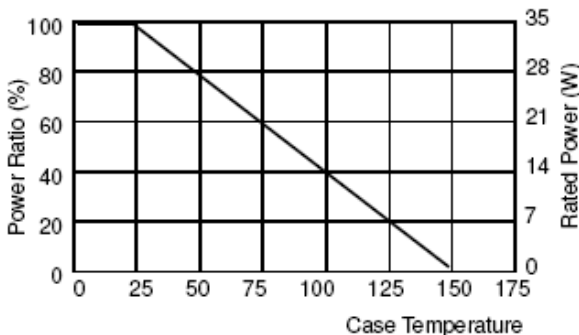
| | |
|---------------------|-----------|
| ① Flange | ④ Lead |
| ② Alumina Substrate | ⑤ Molding |
| ③ Resistor Layer | |

■ Dimensions

| Type | Weight (g) (1000pcs) |
|------|-------------------------|
| TR35 | 1902 |



■ Derating Curve



Part Numbering

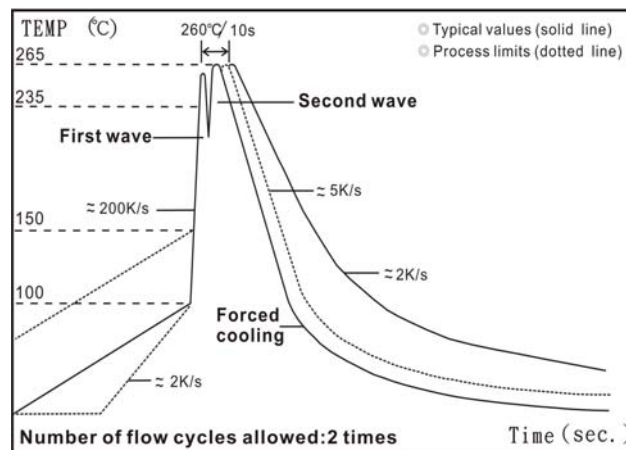
| | | | | | |
|--------------|--------------|---|--------------------|---|--|
| TR | 35 | J | B | D | 1001 |
| Product Type | Power | Resistance Tolerance | Packaging Code | TCR (PPM/°C) | Resistance |
| | 35: 35 Watts | D: ±0.5% F: ±1% J: ±5% K: ±10% | B: Bulk D: Tube | D: ±50 E: ±100 F: ±200 G: ±300 - : No Specified | R100: 0.1Ω 0100: 10Ω 4700: 470Ω 1001: 1KΩ 1002: 10KΩ |

Electrical Characteristics Specifications

| Item | Resistance Range | | | | TCR (PPM/°C) |
|------|------------------|-----|-----|------|---------------------|
| | ±0.5% | ±1% | ±5% | ±10% | |
| TR35 | 0.05Ω - 0.91Ω | | | | No Specified |
| | 1Ω - 2.7Ω | | | | ±100 ±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

Soldering Condition



Wave Soldering (Flow Soldering)

- (1) Time of wave soldering at maximum temperature point 260°C : 10s
- (2) Time of soldering iron at maximum temperature point 410°C : 5s

■ 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 hr "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: 0.9 N-m
- Without a Heat Sink, When in Free Air at 25°C, the TR35 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
- RCWV(Rated Continuous Working Voltage)= $\sqrt{P \cdot R}$ or Max. Operating Voltage whichever is lower.

REVISION HISTORY

| REVISION | DATE | CHANGE NOTIFICATION | DESCRIPTION |
|-----------------|-------------|----------------------------|--|
| Version B2 | Sep 30,2014 | ECN-14017 | Product's Dimensions Updated |
| Version B3 | Apr 30,2015 | - | - Increase Tube Package Code |
| Version B4 | Jul 15,2016 | - | - Resistance range 1Ω-2.7Ω increase TCR100 Specifications - Adjust the resistance range |

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