

APPROVAL SHEET

Product Name : TO-263 Power Resistor

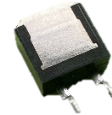
Part No. : TWPA

Description : TO263 - 35W

TO-263 Power Resistor_TWPA 35 Series

■ Features

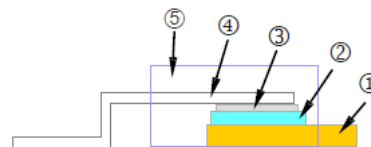
- 30~35 watts at 25°C case temperature heat sink mounted
- D2PAK style package provides high power dissipation.
- Electrically isolated case



■ Applications

- Snubbers Circuits
- Switching Power Supplies
- 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		

■ Parts Number Explanation

TWPA	35	F	B	D	1001
Product	Power	Tolerance	Packaging	TCR (PPM/°C)	Resistance
Power Resistor	35=35W	D= ±0.5% F= ±1% J= ±5% K= ±10%	D= Tube B= Bulk	D= ±50 E= ±100 F= ±200 G= ±300 “-“= No Specified	R100=100mΩ 10R0=10Ω 470R=470Ω 1001=1KΩ 1002=10KΩ

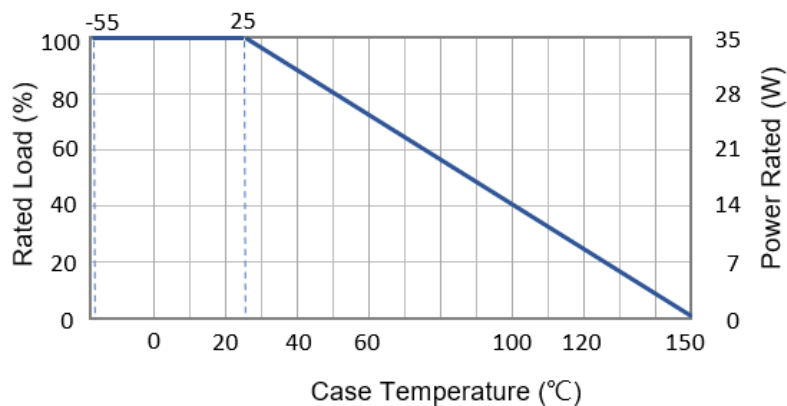
■ Electrical Characteristics Specifications

Type	Item	Resistance Range				TCR (PPM/°C)
		±0.5%	±1%	±5%	±10%	
TWPA 35	-	-	-	0.05Ω - 1Ω		No Specified
	-	-	-	≥ 0.1Ω - 1Ω		No Specified
	-	-	-	≥ 1Ω - 5Ω		±100 、±200 、±300
	-	-	-	≥ 5Ω - 10Ω		±100 、±200 、±300
	-	-	-	≥ 10Ω - 10KΩ		±50 、±100 、±200
	-	-	-	≥ 10KΩ - 100KΩ		±50 、±100 、±200

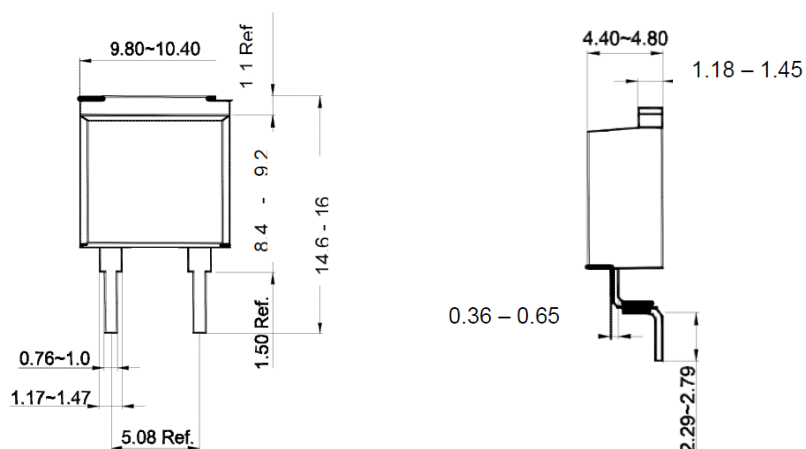
- Operating Voltage : 350V Max ;
- Dielectric Strength : 1,800VAC
- Insulation Resistance : 10GΩ min
- Working Temperature Range : -55°C to +150°C

■ Derating Curve

Operating Temperature Range: -55 to +150°C



■ Dimensions (Unit: mm)



■ Reliability Test and Requirement

Item	Requirement	Test Method
Temperature Coefficient of Resistance	As Spec.	At 25°C/-55°C and 25°C/+125°C/, 25°C is the reference temperature
Short Time Overload	$\Delta R < \pm 0.3\%$	2 times rated power with applied voltage not to exceed 1.5 times Maximum continuous operating voltage for 5 seconds
Operational Life	$\Delta R < \pm 1.0\%$	MIL-STD-202 Method 108 Condition D Steady State TA=125°C at rated power. Measurement at 24±4 hours after test conclusion. 1000 hr
Biased Humidity	$\Delta R < \pm 0.5\%$	MIL-STD-202 Method 103 1,000 hr 85°C/85% RH 10% of operating power.
High Temperature Exposure	$\Delta R < \pm 0.3\%$	MIL-STD-202 Method 108 at +125°C for 1000 hr
Solderability	95% min. Coverage	JIS-C-5201-1 4.17 、IEC-60115-1 4.17 245±5°C for 3 seconds
Resistance to Soldering Heat	$\Delta R < \pm 0.5\%$	JIS-C-5201-1 4.18 、IEC-60115-1 4.18 260±5°C for 10 seconds (Delta R)
Temperature Cycling	$\Delta R < \pm 0.5\%$	JESD22 Method JA-104 -55°C to +125°C, 1000 cycles
Mechanical Shock	$\Delta R < \pm 0.25\%$	MIL-STD-202 Method 213 Wave Form: Tolerance for half sine shock pulse. Peak value is 100g's. Normal duration (D) is 6.
Vibration	$\Delta R < \pm 0.25\%$	MIL-STD-202 Method 204 5 g's for 20 min., 12 cycles each of 3 orientations, 10-2000 Hz
ESD	$\Delta R < \pm 3 \%$	AEC-Q200 Human body model : 2KV
Flammability	Pass	UL-94V-0 are acceptable.

- Lead Material: Tinned Copper
- Without a Heat Sink, When in free air at 25°C, the SPRT35 is Rated for 2.5W
- 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.

■ Packaging

Tube Packaging Quantity :

Type	Packaging
	Tube
TWPA35	50 pcs