Data Sheet

Customer:	
Product:	**TO-263 SMD Power Resistors – STR50 Series**
Size:	**50W**
Issued Date:	**04-Jun-25**
Edition:	**REV.A3**

RoHS Compliant

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04-Jun-25	04-Jun-25	04-Jun-25	04-Jun-25	
Mandy Chang	***Ben Chang***	***Ben Chang***		

TO-263 SMD Power Resistors – STR50 Series



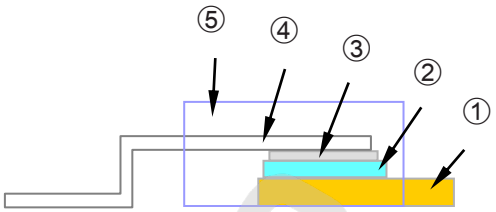
Features

- 50 watts at 25°C case temperature heat sink mounted
- Molded case for protection and easy to mount
- Resistor is electrically isolated from metal tab

Applications

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

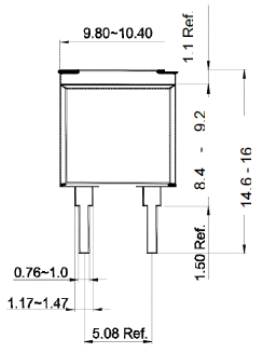
Construction

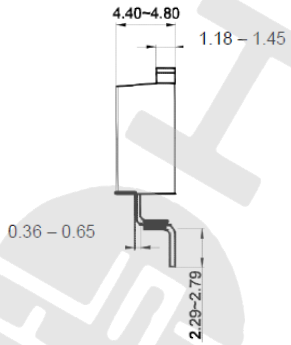


①	Flange	④	Lead
②	Alumina Substrate	⑤	Molding
③	Resistor Layer		

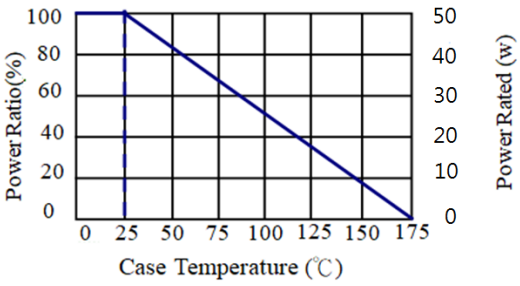
Dimensions

Unit: mm



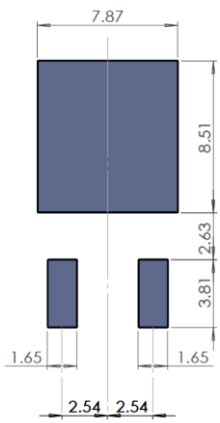


Derating Curve



Derating Curve Slope：0.333W/°K ; Thermal resistance：3.00°K/W

Recommended Pad Layout



■Part Numbering

STR	50	J	D	D	1001
Product Type	Power	Resistance Tolerance	Packaging Code	TCR (PPM/℃)	Resistance
	50: 50 Watts	D: ±0.5% F: ±1% J: ±5% K: ±10%	T:Taping Reel D:Tube	D: ±50 E: ±100 F: ±200 G: ±300 - : No Specified (±300~±700)	R100: 0.1Ω 0100: 10Ω 4700: 470Ω 1001: 1KΩ 1002: 10KΩ

■Electrical Characteristics Specifications

Item / Type	Resistance Range				TCR (PPM/℃)
	±0.5%	±1%	±5%	±10%	
STR50	-	-	0.05Ω - 0.1Ω		No Specified (±300~±700)
	-	≧ 0.1Ω - 1Ω			±300
	-	≧1Ω - 5Ω			±100 ±200 ±300
	≧ 5Ω - 10Ω				±100 ±200 ±300
	≧ 10Ω - 100KΩ				±50 ±100 ±200

- Operating Voltage: 350V Max.
- Dielectric Strength: 1800VAC
- Insulation Resistance: 10GΩ min.
- Operating Temperature Range: -65°C to +175°C

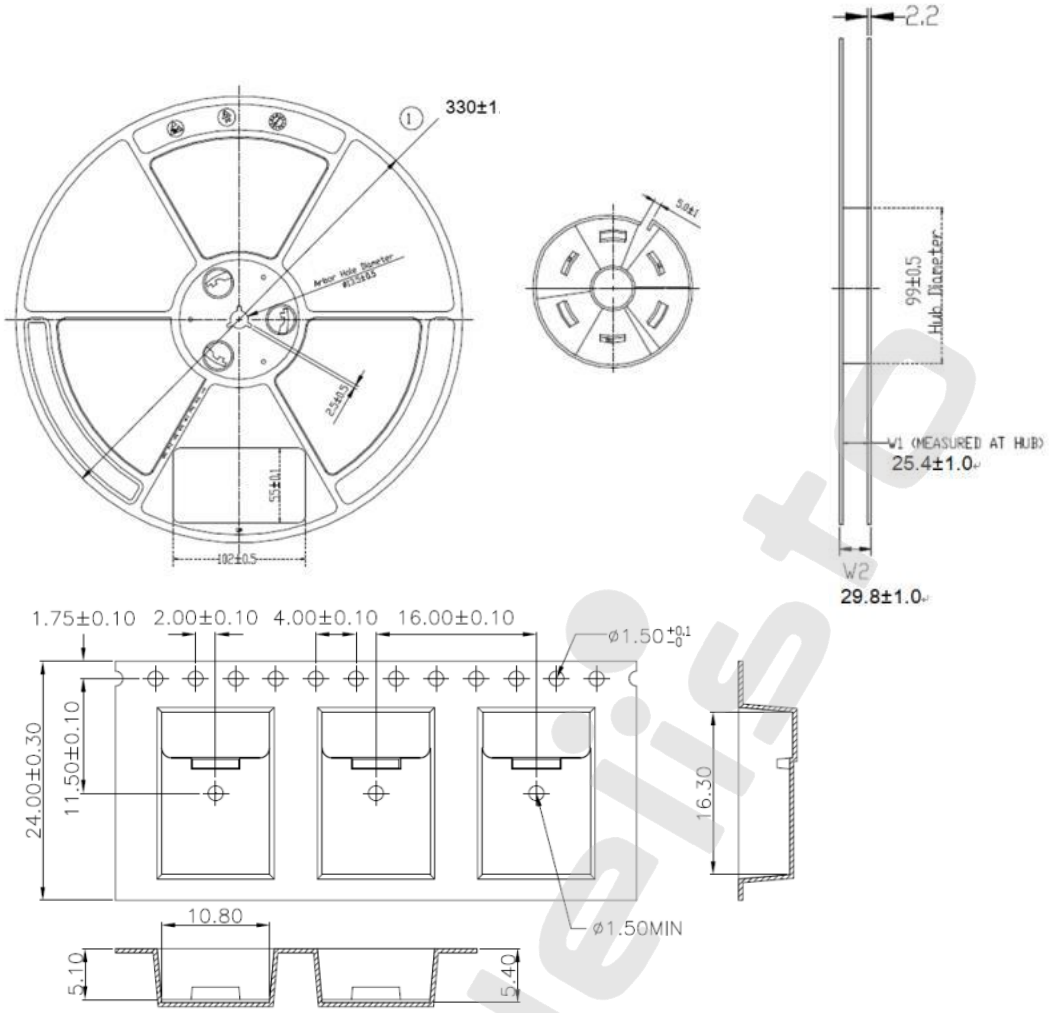
■Environmental Characteristics

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	270±5°C for 3 seconds
Temperature Cycling	ΔR±0.3%	-65℃~+150°C, 100 cycles
Terminal Strength	ΔR±0.2%	(Pull Test)2.4N
Vibration, High Frequency	ΔR±0.2%	20g peak

- Without a Heat Sink, When in Free Air at 25°C, the STR50 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.
- Storage Temperature: 25±5℃; Humidity: <75%RH
- Shelf life: 1 years Max

■Packaging

Tape and Reel specifications

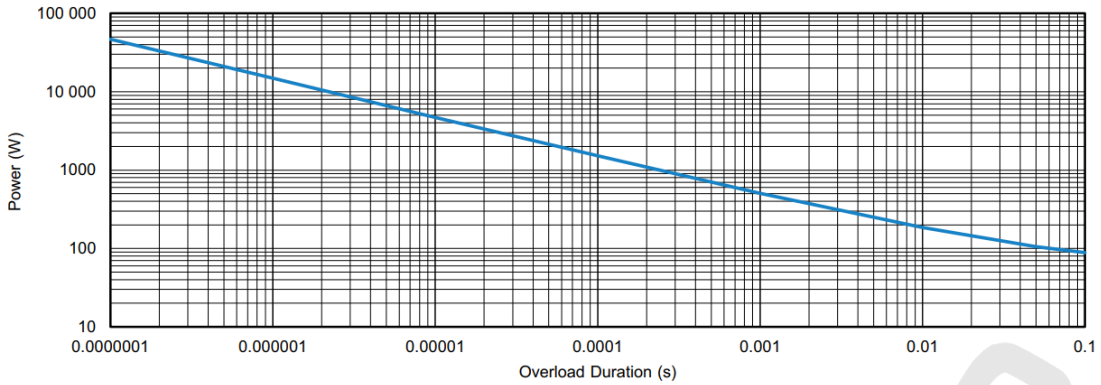


Type	Packaging Quantity
	Reel
STR50	500 pcs

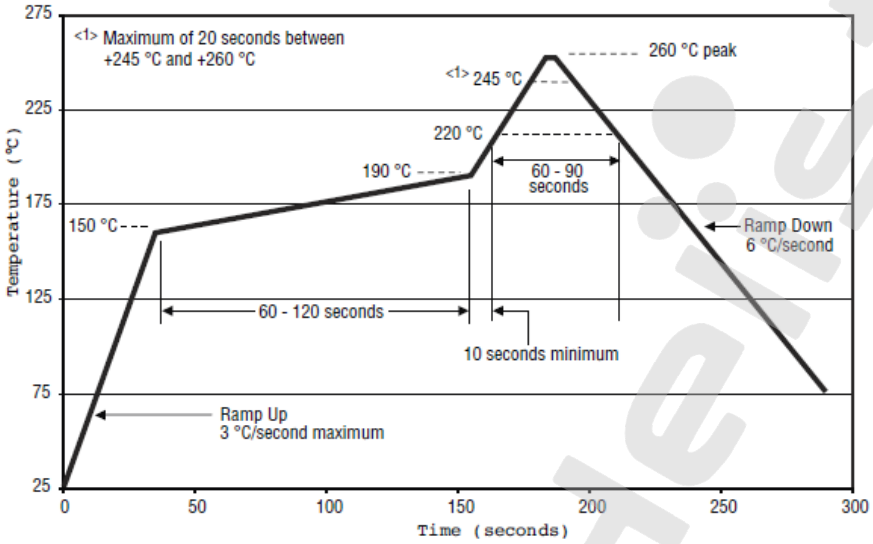
Tube Packaging Quantity

Type	Packaging
	Tube
STR50	50 pcs

■Power Curve



■Soldering Profile



REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version A1	Mar 31 ,2025		-Add Shelf life.
Version A2	May 14 ,2025		-Modify the TCR specification for 0.05Ω – 0.1Ω from No Specified to No Specified (±300~±700) -Modify the TCR specification for ≥0.1Ω – 1Ω from No Specified to ±300 -Modify the Derating Curve diagram. -Add the Recommended Pad Layout. -Modify the operating temperature range: -65˚C to +150˚C → -55˚C to +175˚C. -Modify the Environmental Characteristics section. -Modify the Packaging Specifications. -Add Power Curve and Soldering Profile.
Version A3	Jun 04 ,2025		-Modify the operating temperature range: -55˚C to +175˚C → -65˚C to +175˚C.