

## TR 20 Power Thick Film Resistor

Catalogue

Feature

Application

Construction

Dimensions

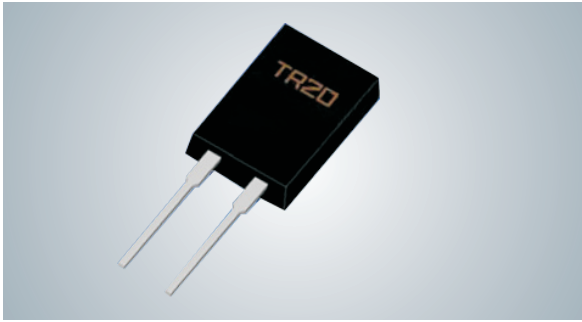
Reference Standards

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Derating Curve

Performance



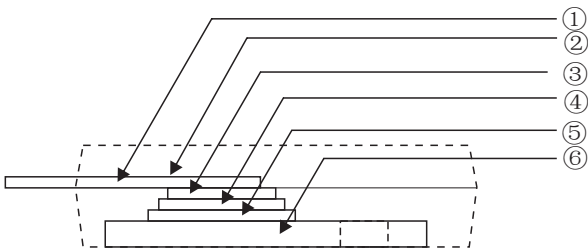
## Feature

- I At 25°C case temperature heat sink mounted
- II TO-220 style power package
- III Molded case for protection and easy to mount
- IV Electrically isolated case
- V Non-Inductive design

## Application

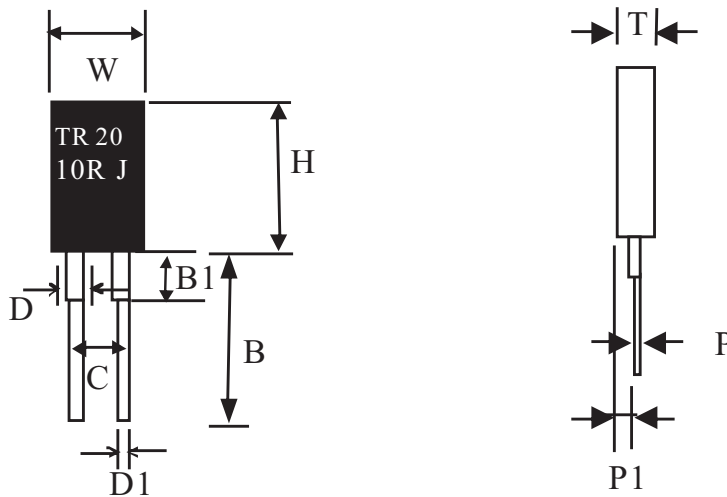
- I Switching Power Supplies
- II Snubbers Circuits
- III Automated Machine Controller
- IV RRF Power Amplifiers
- V Low Energy Pulse Loading
- VI UPS
- VII Voltage Regulation

## Construction



①	Leads, Tin plated Cu
②	Mold, epoxy, UL94-V0
③	Conductor, Cu
④	Resistor, NiCr or RuO
⑤	Substrate, Alumina
⑥	Flange, Ni plated Cu

## Dimensions



Type	Power	Dimensions(mm)									
TR 20	20W	W	H	B	B1	C	D	D1	T	P	P1
		10.44 ± 0.24	16.25 ± 0.25	12.7 ± 1.3	3.3 ± 0.76	5.08 ± 0.26	1.27 ± 0.13	0.76 ± 0.1	3.18 ± 0.26	0.55 ± 0.1	1.78 ± 0.26

## Reference Standards

JIS C 5201-1

## Ordering Information

Example:

TR	20	D	10R0	C2	B
(1)	(2)	(3)	(4)	(5)	(6)
Series Name	Power Rating	Resistance Tolerance	Resistance	T.C.R	Packaging

(1)Type:TR SERIES

(2)Power Rating: 20=20W

(3)Tolerance: D=±0.5%,F=±1%,J=±5%,K=±10%

(4)Resistance Value:10R0=10Ω

(5)T.C.R: C2=±50ppm/°C,C1=±100ppm/°C,C=±200ppm/°C or ±300ppm/°C

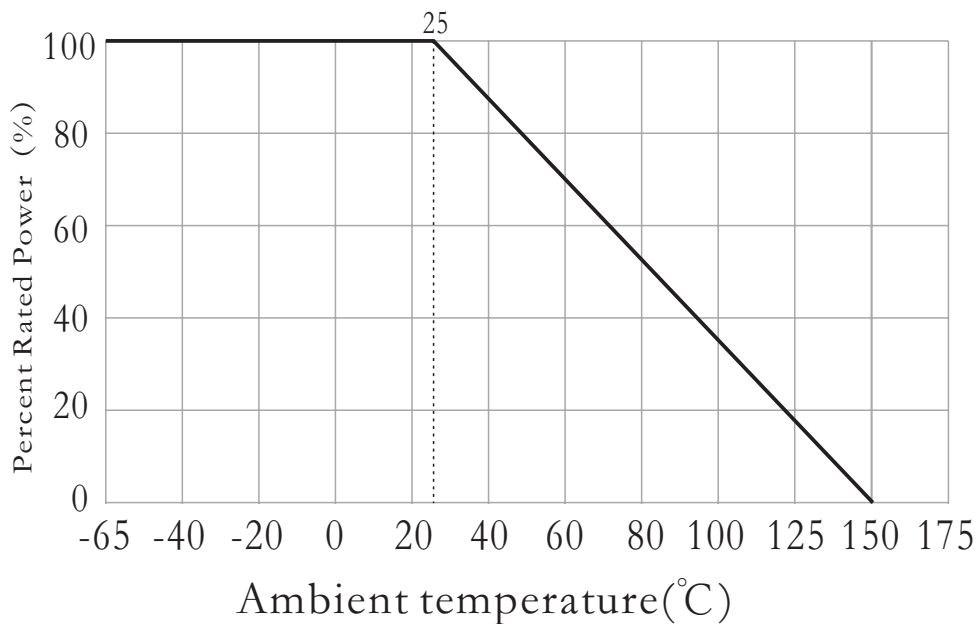
(6)Packaging:B=Box

Packaging : Plastic recloseablebags(MOQ : 100PCS)

## Applications And Ratings

Type	Power (25°C)	Thermal resistance (°C/W)	Resistance Range (Ω)	Tolerance	T.C.R	Max working Voltage (V)	Climatic category
TR 20	20	6.5	0.1~1MΩ	±0.5% ±1% ±5% ±10%	±50ppm/°C ±100ppm/°C ±200ppm/°C ±300ppm/°C	350V	55/125/56

## Derating Curve



## Performance

Test Items	Performance Requirements	Test Methods(JIS C 5201-1)
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	Referenced to 25°C, $\Delta R$ taken at +105°C
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
Load Life	$\Delta R \pm 1.0\%$	2,000 hours at rated power
Damp Heat with Load	$\Delta R \pm 0.5\%$	40 ± 2°C, 90~95% R.H. Max. working voltage 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	$\Delta R \pm 0.3\%$	-65°C~150°C, 100 cycles
Terminal Strength	$\Delta R \pm 0.2\%$	(Pull Test) 2.4N
Vibration, High Frequency	$\Delta R \pm 0.2\%$	20g peak