



VISHAY INTERTECHNOLOGY, INC.



THICK FILM POWER RESISTORS

1 W to 500 W

KEY BENEFITS

- New “Thick Film” technology
- Custom designs available
- Standard packages available (TO-220, TO-247, SOT-227, TO-263, and TO-252) for easy design
- Compact (high power dissipation to volume ratio)
- Wide resistance range from 0.01 Ω to 100 G Ω
- Low inductivity below 1 μ H

APPLICATIONS

- Power conversion
- High-speed switching
- RF applications
- Current sensing
- Industrial and medical power supplies
- Test equipment
- Railroad electrical traction
- Variable speed drives
- Snubbers
- Control devices

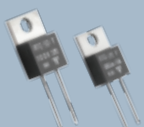


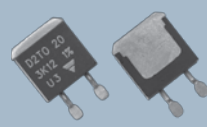



Thick Film Power Resistors

1 W to 500 W

	RCH	RPH	RPS	RTOP
Models				
Resistance Range	0.24 Ω to 1 M Ω	0.092 Ω to 1 M Ω	0.24 Ω to 1 M Ω	0.046 Ω to 1 M Ω
Power Rating Mounted (PR)	5 W to 50 W	100 W	250 W and 500 W	50 W to 200 W
Nominal Voltage	160 V to 1285 V RMS	1900 V RMS	5000 V RMS	500 V to 1500 V RMS
Temperature Range	- 55 $^{\circ}$ C to + 125 $^{\circ}$ C	- 55 $^{\circ}$ C to + 125 $^{\circ}$ C	- 55 $^{\circ}$ C to + 125 $^{\circ}$ C	- 55 $^{\circ}$ C to + 125 $^{\circ}$ C
TC ppm/ $^{\circ}$ C	\pm 150 ppm/ $^{\circ}$ C > 1 Ω	\pm 150 ppm/ $^{\circ}$ C > 1 Ω	\pm 150 ppm/ $^{\circ}$ C > 1 Ω	\pm 150 ppm/ $^{\circ}$ C > 1 Ω
Thermal Resistance	0.8 $^{\circ}$ C/W to 4.8 $^{\circ}$ C/W	0.55 $^{\circ}$ C/W	RPS250 = 0.22 $^{\circ}$ C/W RPS500 = 0.11 $^{\circ}$ C/W	0.5 $^{\circ}$ C/W to 1 $^{\circ}$ C/W
Inductance	\leq - 0.1 μ H	\leq - 0.1 μ H	< 50 nH	\leq - 0.1 μ H
Overload Capacity Short Duration (seconds)	2 PR/5 s	4 PR/5 s	RPS250 = 4 PR/10 s RPS500 = 2 PR/10 s	2.5 PR/5 s
Dielectric Strength	2000 V to 3500 V	5000 V	L: 7000 V H: 12000 V	2500 V
Package	N/A	N/A	N/A	SOT227B
Standard Tolerance and Available in	\pm 5 % (1 % to 10 %)	\pm 5 % (1 % to 10 %)	\pm 5 % (1 % to 10 %)	\pm 5 % (1 % to 10 %)
Features	<ul style="list-style-type: none"> • 4 models within range • Custom designs available • Connections: flat with hole; round lead; M2 screw • Lead (Pb)-free and RoHS available 	<ul style="list-style-type: none"> • Custom designs available • Connections: M4 screw • Lead (Pb)-free and RoHS available 	<ul style="list-style-type: none"> • 2 models within range • Custom designs available • Connections: M4 screw • Lead (Pb)-free and RoHS available 	<ul style="list-style-type: none"> • 4 models within range • Custom designs available • Connections: screw; shunt • Lead (Pb)-free and RoHS available

For technical questions, contact sfer@vishay.com

RTO	LTO	HTS	D2TO	DTO 25
				
0.010 Ω to 1 M Ω	0.010 Ω to 1 M Ω	1 k Ω to 100 G Ω	0.010 Ω to 500 k Ω	0.015 Ω to 700 k Ω
20 W & 50 W	30 W to 100 W	0.25 W to 5 W	20 W & 35 W	25 W
250 V to 300 V RMS	250 V RMS to 375 V RMS	0.5 kV to 50 kV RMS	250 V	200 V
- 55 $^{\circ}$ C to +155 $^{\circ}$ C	LTO 30-50: - 55 $^{\circ}$ C to + 150 $^{\circ}$ C LTO 100: - 55 $^{\circ}$ C to + 175 $^{\circ}$ C	- 55 $^{\circ}$ C to +155 $^{\circ}$ C	D2TO20: - 55 $^{\circ}$ C to + 155 $^{\circ}$ C D2TO35: - 55 $^{\circ}$ C to + 175 $^{\circ}$ C	- 55 $^{\circ}$ C to +150 $^{\circ}$ C
± 150 ppm/ $^{\circ}$ C > 0.5 Ω	± 150 ppm/ $^{\circ}$ C > 0.5 Ω	± 100 ppm/ $^{\circ}$ C	± 150 ppm/ $^{\circ}$ C > 0.5 Ω	± 150 ppm/ $^{\circ}$ C > 0.5 Ω
RTO20 = 6.5 $^{\circ}$ C/W RTO50 = 2.6 $^{\circ}$ C/W	4.2 $^{\circ}$ C/W to 1.5 $^{\circ}$ C/W	N/A	D2TO20: 6.5 $^{\circ}$ C/W D2TO35: 4.2 $^{\circ}$ C/W	5 $^{\circ}$ C/W
< 0.1 μ H	\leq 0.1 μ H	N/A	\leq 0.1 μ H	\leq 0.1 μ H
2 PR/5 s < 2 Ω 1.6 PR/5 s \geq 2 Ω	1.5 PR/5 s	N/A	D2TO20: 2 PR/5 s < 2 Ω 1.6 PR/5 s \geq 2 Ω D2TO35: 1.7 PR/5 s < 2 Ω 1.4 PR/5 s \geq 2 Ω	1.5 PR/5 s
2000 V	1500 V	N/A	2000 V	1500 V
TO220	TO220 and TO247	N/A	TO263 Style (D2 PAK)	TO252 Style (D PAK)
± 5 % (1 % to 10 %)	± 5 % (1 % to 10 %)	± 1 % (0.5 % to 10 %)	± 5 % (1 % to 10 %)	± 5 % (1 % to 10 %)
<ul style="list-style-type: none"> • 2 models within range • Custom designs available • Through hole and SMD • Lead (Pb)-free and RoHS available 	<ul style="list-style-type: none"> • 3 models within range • Direct mounting ceramic on heatsink • Lead (Pb)-free and RoHS compliant • Custom designs available 	<ul style="list-style-type: none"> • 12 models within range • Special matching tolerance 0.25 % • Special tracking in TCR: 25 ppm/$^{\circ}$C 	<ul style="list-style-type: none"> • 2 models within range • Standard package for SMD • Lead (Pb)-free and RoHS compliant • Solder reflow secure at 270 $^{\circ}$C/10s 	<ul style="list-style-type: none"> • Standard package for SMD • Lead (Pb)-free and RoHS compliant • Solder reflow secure at 270 $^{\circ}$C/10s



SEMICONDUCTORS:

Rectifiers • High-Power Diodes and Thyristors • Small-Signal Diodes • Zener and Suppressor Diodes
• FETs • RF Transistors • Optoelectronics • ICs • Modules and Assemblies

PASSIVE COMPONENTS:

Resistive Products • Magnetics • Capacitors • Strain Gage Transducers and Stress Analysis Systems

**One of the World's Largest
Manufacturers**
of Discrete Semiconductors and Passive Components

WORLDWIDE SALES CONTACTS

THE AMERICAS

UNITED STATES

VISHAY AMERICAS
ONE GREENWICH PLACE
SHELTON, CT 06484
UNITED STATES
PH: +1-402-563-6866
FAX: +1-402-563-6296

ASIA

SINGAPORE

VISHAY INTERTECHNOLOGY
ASIA PTE LTD.
25 TAMPINES STREET 92
KEPPEL BUILDING #02-00
SINGAPORE 528877
PH: +65-6788-6668
FAX: +65-6788-0988

P.R. CHINA

VISHAY TRADING (SHANGHAI) CO., LTD.
15D, SUN TONG INFOPORT PLAZA
55 HUAI HAI WEST ROAD
SHANGHAI 200030
P.R. CHINA
PH: +86-21-5258 5000
FAX: +86-21-5258 7979

JAPAN

VISHAY JAPAN CO., LTD.
MG IKENOHATA BLDG. 4F
1-2-18, IKENOHATA
TAITO-KU
TOKYO 110-0008
JAPAN
PH: +81-3-5832-6210
FAX: +81-3-5832-6260

EUROPE

GERMANY

VISHAY EUROPE SALES GMBH
GEHEIMRAT-ROSENTHAL-STR. 100
95100 SELB
GERMANY
PH: +49-9287-71-0
FAX: +49-9287-70435

FRANCE

VISHAY S.A.
199, BLVD DE LA MADELEINE
06003 NICE, CEDEX 1
FRANCE
PH: +33-4-9337-2920
FAX: +33-4-9337-2997

UNITED KINGDOM

VISHAY LTD.
PALLION INDUSTRIAL ESTATE
SUNDERLAND SR4 6SU
UNITED KINGDOM
PH: +44-191-514-4155
FAX: +44-191-567-8262