



THICK FILM POWER RESISTORS

1 W to 800 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, with 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	LPS	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	0.3 Ω to 900 k Ω	0.046 Ω to 1 M Ω
Power Rating Mounted (PR)	5 W to 50 W	100 W	250 W and 500 W	300 W, 600 W and 800 W	50 W to 200 W
Nominal Voltage	160 V to 1285 V _{RMS}	1900 V _{RMS}	5000 V _{RMS}	5000 V _{RMS}	500 V to 1500 V _{RMS}
Temperature Range	- 55 °C to + 125 °C	- 55 °C to + 125 °C	- 55 °C to + 125 °C	- 55 °C to 175 °C	- 55 °C to + 125 °C
TC ppm/°C	± 150 ppm/°C > 1 Ω	± 150 ppm/°C > 1 Ω	± 150 ppm/°C > 1 Ω	± 300 ppm/°C ≤ 10 Ω ± 150 ppm/°C > 10 Ω	± 150 ppm/°C > 1 Ω
Thermal Resistance	0.8 °C/W to 4.8 °C/W	0.55 °C/W	RPS250 = 0.22 °C/W RPS500 = 0.11 °C/W	0.112 °C/W	0.5 °C/W to 1 °C/W
Inductance	$\leq - 0.1$ μ H	$\leq - 0.1$ μ H	< 50 nH	≤ 0.1 μ H	$\leq - 0.1$ 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	LPS300 = 4 PR/10 s LPS600 = 2 PR/10 s LPS800 = 1.5 PR/10 s	2.5 PR/5 s
Dielectric Strength	2000 V to 3500 V	5000 V	L: 7000 V H: 12000 V	12000 V _{RMS}	2500 V
Package	N/A	N/A	N/A	N/A	SOT227B
Standard Tolerance and Available in	± 5 % (1 % to 10 %)	± 5 % (1 % to 10 %)	± 5 % (1 % to 10 %)	± 5 % (1 % to 10 %)	± 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"> • 3 models within range • Connections: M4 screw • RoHS compliant • Weight: 83 g 	<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

THICK FILM POWER RESISTORS

1 W to 500 W



	RTO	LTO	HTS	D2TO	DTO 25
Models					
Resistance Range	0.010 Ω to 1 MΩ	0.010 Ω to 1 MΩ	1 kΩ to 100 GΩ	0.010 Ω to 500 kΩ	0.015 Ω to 700 kΩ
Power Rating Mounted (PR)	20 W and 50 W	30 W to 100 W	0.25 W to 5 W	20 W and 35 W	25 W
Nominal Voltage	250 V to 300 V _{RMS}	250 V _{RMS} to 375 V _{RMS}	0.5 kV to 50 kV _{RMS}	250 V	200 V
Temperature Range	-55 °C to +155 °C	LTO 30-50: -55 °C to +150 °C LTO 100: -55 °C to +175 °C	-55 °C to +155 °C	D2TO20: -55 °C to +155 °C D2TO35: -55 °C to +175 °C	-55 °C to +150 °C
TC ppm/°C	± 150 ppm/°C > 0.5 Ω	± 150 ppm/°C > 0.5 Ω	± 100 ppm/°C	± 150 ppm/°C > 0.5 Ω	± 150 ppm/°C > 0.5 Ω
Thermal Resistance	RTO20 = 6.5 °C/W RTO50 = 2.6 °C/W	4.2 °C/W to 1.5 °C/W	N/A	D2TO20: 6.5 °C/W D2TO35: 4.2 °C/W	5 °C/W
Inductance	< 0.1 μH	≤ 0.1 μH	N/A	≤ 0.1 μH	≤ 0.1 μH
Overload Capacity Short Duration (seconds)	2 PR/5 s < 2 Ω 1.6 PR/5 s ≥ 2 Ω	1.5 PR/5 s	N/A	D2TO20: 2 PR/5 s < 2 Ω 1.6 PR/5 s ≥ 2 Ω D2TO35: 1.7 PR/5 s < 2 Ω 1.4 PR/5 s ≥ 2 Ω	1.5 PR/5 s
Dielectric Strength	2000 V	1500 V	N/A	2000 V	1500 V
Package	TO220	TO220 and TO247	N/A	TO263 Style (D ² PAK)	TO252 Style (D PAK)
Standard Tolerance and Available in	± 5 % (1 % to 10 %)	± 5 % (1 % to 10 %)	± 1 % (0.5 % to 10 %)	± 5 % (1 % to 10 %)	± 5 % (1 % to 10 %)
Features	<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/°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 °C/10 s 	<ul style="list-style-type: none"> • Standard package for SMD • Lead (Pb)-free and RoHS compliant • Solder reflow secure at 270 °C/10 s

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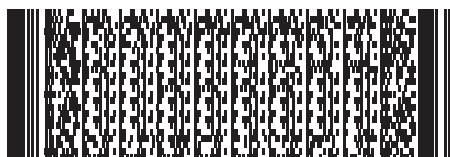
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