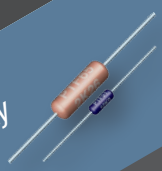
Vishay Intertechnology, Inc.

Leaded Film Resistors

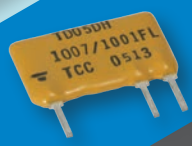
High Precision and Stability Resistor to **Precisely Balance** Circuits

PTF



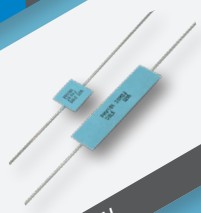
High Voltage Planar Divider Up to 30 kV

TD



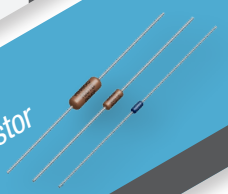
High Voltage Planar Resistor Up to 15 kV

FHV AXIAL



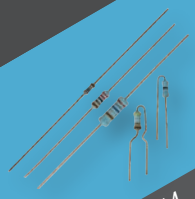
Widely Recognized Resistor in Military / Industrial / Custom Applications

RN



Advanced Thin Film **Technology**

MBA/SMA 0204, MBB/SMA 0207, MBE/SMA 0414

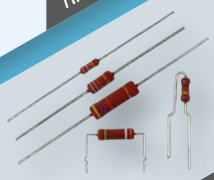


High Voltage Resistor, **Customizable** to Customer Specific Requirements

RNX

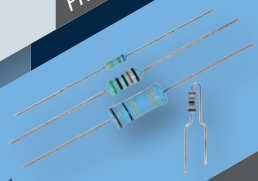
High Power in Small Packages, AEC-Q200 Qualified (PR01 and PR02)

PR01 / PR02 / PR03



High Voltage Metal Glaze Resistor

VR25 / VR37 / VR68

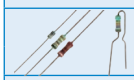
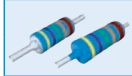


www.vishay.com

LEADED FILM RESISTORS

Focus Products

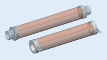
Metal Film Resistors

Series	Resistance Min. (Ω)	Resistance Max. (Ω)	Tolerance Min. (± %)	Tolerance Max. (± %)	TCR Min. (ppm/°C)	TCR Max. (ppm/°C)	Size	Power
 CMF Military	10	2.49 M	0.1	5	± 25	± 200	50 to 70	to 0.75 W
	Military-qualified resistor to MIL-R-10509 (RN) and MIL-PRF-22684 (RL)							
 CMF Industrial	0.1	50 M	0.1	5	± 25	± 200	50 to 70	to 1.75 W
	Low noise to 0.1 µV/V; flame retardant coating; customizable to customer requirements							
 CMF Non-magnetic	0.1	50 M	0.1	5	± 25	± 200	50 to 70	to 1.75 W
	Manufactured using non-magnetic materials							
 CMF Fusible	4	30 K	1	1	± 100	± 100	55 to 70	to 1.5 W
	Established fusing characteristics; flameproof coating meets EIA RS-325							
 CPF	0.1	150 K	0.1	5	± 25	± 200	1 to 3	to 3 W
	High power rating in a small package; high temperature; flameproof							
 PTF	15	1 M	0.01	1	± 5	± 15	51 to 65	to 0.25 W
	High precision and high stability							
 ERC Military	10	3.01 M	0.1	1	± 25	± 100	50 to 70	to 0.75 W
	Military-qualified established reliability resistor to MIL-PRF-55182 (RNC / RNR); M, P, R, and S level failure rates							
 ERL Military	1	10 M	1	2	± 100	± 100	05 to 32	to 1 W
	Military-qualified established reliability resistor to MIL-PRF-39017 (RLR); M, P, R, and S level failure rates; DSCC drawings to 22 MΩ							
 HDN Military	10	4.99 M	0.1	1	± 25	± 50	55 to 75	to 2 W
	Military-qualified established reliability resistor to MIL-PRF-55182 (RNR / RNN); M, P, R, and S level failure rates; hermetic enclosure impervious to harmful environments							
 SFR16S/ SFR25/SFR25H	0.22	10 M	1	5	± 100	± 250	DIN 0204; DIN 0207	Up to 0.5 W
	Low cost standard metal film resistor							
 MRS16/MRS25	4.99	10 M	1	-	± 50	-	DIN 0204; DIN 0207	Up to 0.6 W
	Professional thin film leaded resistor							
 MB /SMA Professional	0.22	22M	0.5	5	± 25	± 50	DIN 0204; DIN 0207; DIN 0414	Up to 1.0 W
	Advanced thin film technology; power dissipation rating up to 1 W; available in CECC version (IECQ-CECC approved according to EN 140101-806)							
 MB /SMA Precision	10	1.5 M	0.1	0.25	± 15	± 25	DIN 0204; DIN 0207; DIN 0414	Up to 0.65 W
	Advanced thin film technology; IECQ-CECC approved according to EN 140101-806; superior overall stability: class 0.05							
 MPR24	10	1 M	0.01	0.5	± 5	± 25	DIN 0207	Up to 0.25 W
	High precision thin film leaded resistors; high stability 0.05 %							
 UX High Precision	10	1 M	0.01	0.25	± 2	± 10	DIN 0204; DIN 0207; DIN 0414	Up to 0.5 W
	Superior thin film technology; exceptional low TCR: ± 2 ppm/K to ± 10 ppm/K; exceptional overall stability: class 0.02							
 MB VG06	1.0	21.5 M	0.1	1	± 15	± 50	DIN 0204; DIN 0207; DIN 0414	Up to 1.0 W
	Advanced thin film technology; IECQ-CECC approved to EN 140101-806, version E; established reliability, failure rate level E7; single lot date code							
 NFR25/NFR25H	0.22	15 K	5	-	± 100	± 200	DIN 0207	Up to 0.5 W
	Fusible leaded metal film resistor							
 HVR25/HVR37	100 K	10 M	1	5	± 200	-	DIN 0207; DIN 0309	Up to 0.5 W
	High voltage metal film resistor (up to 3.5 kV)							
 PR01/PR02/ PR03	0.22	1 M	1	5	± 250	-	DIN 0207; DIN 0411; DIN 0617	Up to 3.0 W
	High power in small packages (1 W / 0207 size to 3 W / 0617 size); AEC-Q200 qualified (PR01 and PR02)							
 PR02L/PR2.5L/ PR2.5LS	2 K	70 K	5	-	± 250	-	DIN 0207; DIN 0414	Up to 2.5 W
	High power in small packages (2 W / 0309, 2.5 W / 0414); suitable for high temperature operations							

LEADED FILM RESISTORS

Focus Products

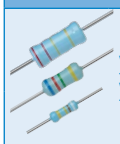
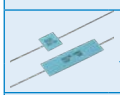
Metal Oxide Resistors

Series	Resistance Min. (Ω)	Resistance Max. (Ω)	Tolerance Min. (± %)	Tolerance Max. (± %)	TCR Min. (ppm/°C)	TCR Max. (ppm/°C)	Size	Power	Voltage
 RNX	100	2 G	0.5	10	± 50	± 200	025 to 200	to 5 W	to 8 kV
	High voltage resistor; non-inductive construction available								
 ROX	100	3 G	1	10	± 50	± 200	050 to 600	to 20 W	to 45 kV
	High voltage resistor; non-inductive and optional constructions available								
 RJU	1 K	1 G	1	10	± 100	± 200	040 to 400	to 400 W	to 125 kV
	High voltage; tab terminals or ferrule terminals available								
 WK/WR	0.22	1 M	1	5	± 50	± 200	DIN 0207; DIN 0414; DIN 0617; DIN 0922	Up to 4 W	Up to 750 V
	High power metal oxide leaded resistor up to 4 W								

Carbon Film Resistors

Series	Resistance Min. (Ω)	Resistance Max. (Ω)	Tolerance Min. (± %)	Tolerance Max. (± %)	TCR Min. (ppm/°C)	TCR Max. (ppm/°C)	Size	Power	Voltage
 MVW, HVW, HVX	1 K	50 M	5	20	-	-	1/2, 3/4	to 1.5 W	to 7.5 kV
	High voltage; coated or uncoated								
 B	50 K	500 M	5	20	-	-	-	to 10 W	to 40 kV
	High voltage; radial lugs or axial leads								
 D, G	50 K	500 M	5	20	-	-	-	to 100 W	to 125 kV
	High voltage; radial bands or ferrule terminals								
 SPW	50	50	2	5	-	-	-	to 120 W	
	High frequency load tubes; custom and water-cooled versions available								
 LCA	0.22	1 M	2	5	-200	Refer to LCA datasheet	DIN 0207; DIN 0414	Up to 0.6 W	500 V
	Standard carbon film resistor								
 CBB 0207	10	1.5 M	2	-	-250	Refer to CBB datasheet	DIN 0207	Up to 0.6 W	350 V
	Specialty product for EMC-sensitive applications; special carbon film technology for maximum heat stress capability; up to 6 kV or 140 W pulse load capability								

Metal Glaze Resistors

Series	Resistance Min. (Ω)	Resistance Max. (Ω)	Tolerance Min. (± %)	Tolerance Max. (± %)	TCR Min. (ppm/°C)	TCR Max. (ppm/°C)	Size	Power	Voltage
 VR25/ VR37/VR68	100 K	68 M	1	10	± 200	-	DIN 0207; DIN 0309; DIN 0718	Up to 1 W	Up to 10 kV
	High voltage metal glaze resistor with high pulse load capability up to 10 kV; VR25 and VR37 are AEC-Q200 qualified; VR37 and VR68 meet safety requirements of UL1676 (510 kΩ to 11 MΩ); DIN EN 60065, IEC 60065 clause 14.1.a); VDE 0860, clause 14.1.a), CQC								
 FHV Axial	10 K	10 G	1	10	± 100	± 200	026 to 501	4 W	Up to 15 kV
	Non-inductive design; matched sets available								
 TD	300 K	3 T	0.5	20	± 100	± 500		Up to 3 W	Up to 30 kV
	Thick film planar voltage divider (up to 30 kV) with TCR tracking (down to ± 25 ppm/°C) and tolerance matching (down to ± 0.5 %)								

Resistors Offer Robust, **Stable**, and **Predictable Performance** in Many Applications

Advantages of Vishay Leaded Film Resistors

- Broad range of styles, values, tolerances, TC, power, and voltages
- Custom options available
- Products for every end use market

For the Following **Applications**

- Avionics, military, and space (AMS)
- High end audio, medical, industrial, white goods
- Harsh environments and long-life operations
- Power and high voltage applications

Choose non-magnetic resistors for your medical applications

Using Vishay resistors is the smart choice for long-life applications

Useful **Links**

- Carbon Composition Cross Reference Guide
  www.vishay.com/doc?31049
- Vishay Metal Film Resistors Selector Guide
  www.vishay.com/doc?49311
- Ohm's Law Calculator
  www.vishay.com/resistors/ohms-law-calculator/

Approved to
EN 140101-806

AEC-Q200 Qualified

REG.-Nr. 40003697

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