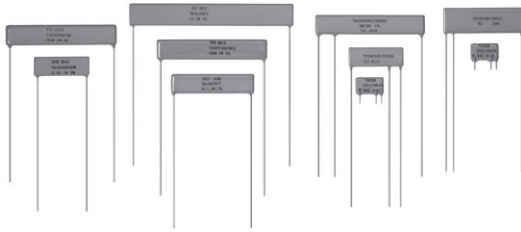


Thick Film Planar Resistors and Dividers, Through-Hole, High Voltage



APPLICATIONS

Applications include power supplies, transformers and any application requiring operation within an environment where high voltages are used.

FEATURES

- 30 000 V capability
- Very low voltage coefficient to less than 1 ppm/V
- Outstanding stability under adverse conditions
- Stable cermet resistive element bonded to a high-purity alumina substrate
- Tough epoxy-based coating and high voltage stability
- Designs built from customer supplied schematics
- Dividers available leaded or non-leaded
- Typical resistance ratios of 1000:1, 2000:1, etc.
- TCR tracking to ± 5 ppm/ $^{\circ}$ C depending on values
- TD series dividers available, contact factory
- Compliant to RoHS directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition



RoHS
COMPLIANT
HALOGEN
FREE

STANDARD ELECTRICAL SPECIFICATIONS					
GLOBAL MODEL/ SIZE	POWER RATING $P_{25^{\circ}\text{C}}$ W	MAXIMUM WORKING VOLTAGE ⁽¹⁾ V	RESISTANCE RANGE ⁽²⁾ Ω	TOLERANCE \pm %	TEMPERATURE COEFFICIENT \pm ppm/ $^{\circ}$ C
TR03C	0.25	0.8K	300 to 3M	1, 2, 5, 10, 20	100
TR03X			2.5K	300 to 25M	1, 2, 5, 10, 20
		25M to 250M		1, 2, 5, 10, 20	200, 300
				260M to 2G	5, 10, 20
			2.1G to 10G	5, 10, 20	⁽³⁾
TR05D	0.5	4K	500 to 25M	1, 2, 5, 10, 20	100
TR05X			5K	3K to 200M	1, 2, 5, 10, 20
				30M to 1G	1, 2, 5, 10, 20
				1.1G to 20G	5, 10, 20
			21G to 100G	5, 10, 20	⁽³⁾
TR10F	1	6.5K	1K to 16M	1, 2, 5, 10, 20	100
TR10X			10K	2K to 120M	1, 2, 5, 10, 20
				20M to 1G	1, 2, 5, 10, 20
				1.1G to 15G	5, 10, 20
			16G to 1T	5, 10, 20	⁽³⁾
TR15G	1.5	12.5K	1.5K to 45M	1, 2, 5, 10, 20	100
TR15X			15K	5K to 340M	1, 2, 5, 10, 20
				60M to 1G	1, 2, 5, 10, 20
				1.1G to 35G	5, 10, 20
			36G to 1.5T	5, 10, 20	⁽³⁾
TR20H	2	17.5K	2K to 64M	1, 2, 5, 10, 20	100
TR20X			20K	8K to 480M	1, 2, 5, 10, 20
				80M to 1G	1, 2, 5, 10, 20
				1.1G to 50G	5, 10, 20
			51G to 2T	5, 10, 20	⁽³⁾
TR30J	3	25K	3K to 82M	1, 2, 5, 10, 20	100
TR30X			30K	8.5K to 620M	1, 2, 5, 10, 20
				80M to 1G	1, 2, 5, 10, 20
				1.1G to 60G	5, 10, 20
			61G to 3T	5, 10, 20	⁽³⁾

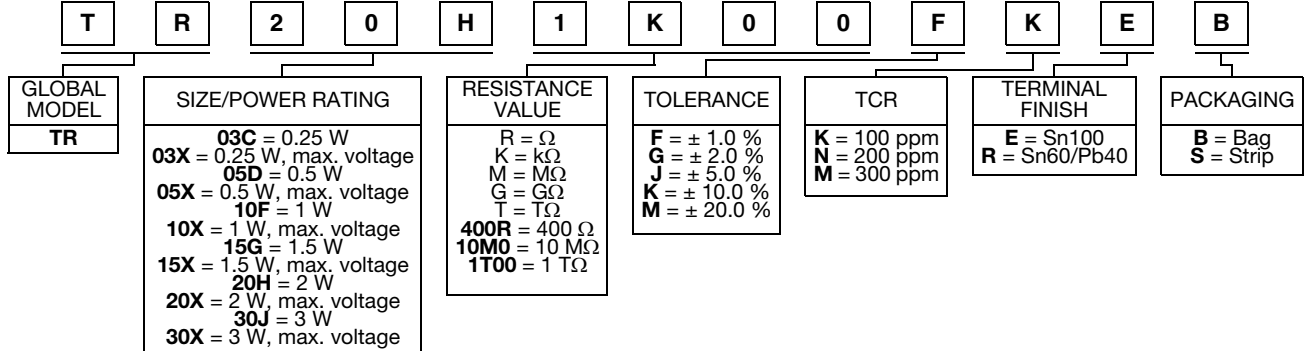
Notes

- Custom sizes available
 - Voltage coefficient: Typically less than 1 ppm/V (tested per MIL-STD-202)
 - Ratio tolerance for dividers: 1 % to 20 %
 - Ratio TCR for dividers: To ± 5 ppm/ $^{\circ}$ C (ratio over 1000:1, contact factory)
- ⁽¹⁾ Continuous working voltage shall be $\sqrt{P \times R}$ or maximum working voltage, whichever is less.
⁽²⁾ All resistance values are calibrated at 100 V_{DC}. Calibration at other voltages available upon request.
⁽³⁾ Contact factory

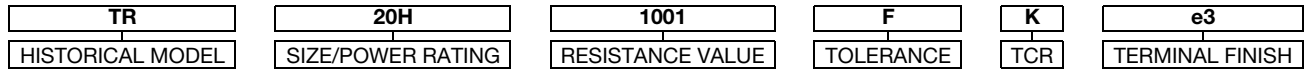
* Pb containing terminations are not RoHS compliant, exemptions may apply

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: TR20H1K00FKEB (preferred part number format)



Historical Part Numbering: TR20H1001FKe3 (will continue to be accepted)



MECHANICAL SPECIFICATIONS

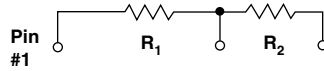
Resistive Element: Thick film
Substrate: 96 % pure alumina
Encapsulation: Epoxy base, conformal coating
Terminals: Tin plated copper leads
Terminal Strength: 4.5 pounds pull-test
Power: Derated from ambient temperature + 25 °C

ENVIRONMENTAL SPECIFICATIONS

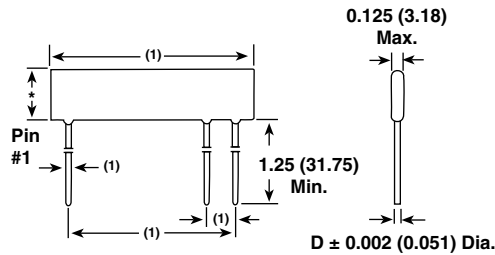
Temperature Range: - 55 °C to + 125 °C (for higher temperature range, consult factory)
Load Life: Less than 0.15 %, 1000 h

DIMENSIONS in inches (millimeters)

Typical Resistor Schematic for Divider

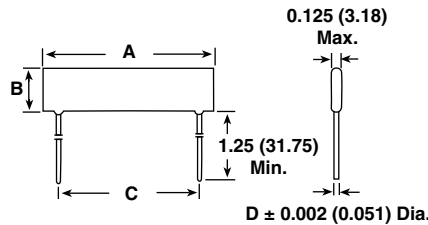


Typical High Voltage Divider



Note
 (1) Specified by application

Standard High Voltage Resistor

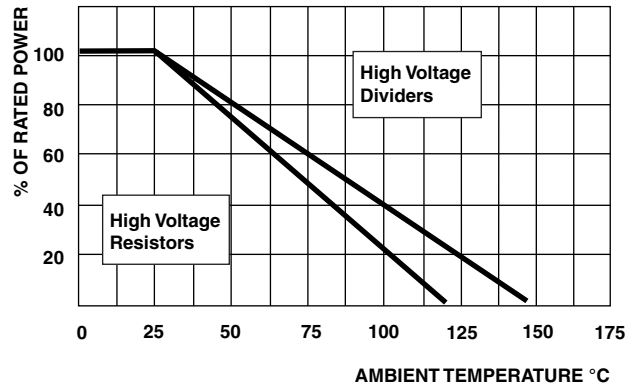


DIMENSIONS (± 10 %)

MODEL	A (LENGTH)	B (HEIGHT)	C (LEAD SPACING)	D (LEAD DIA.)
TR03	0.300 (7.62)	0.210 (5.33)	0.200 (5.08)	0.025
TR05	0.500 (12.70)	0.300 (7.62)	0.400 (10.16)	0.025
TR10	1.00 (25.40)	0.350 (8.89)	0.900 (22.86)	0.032
TR15	1.50 (38.10)	0.350 (8.89)	1.40 (35.56)	0.032
TR20	2.00 (50.80)	0.350 (8.89)	1.90 (48.26)	0.032
TR30	3.00 (76.20)	0.400 (10.16)	2.90 (73.66)	0.032



DERATING





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