

High Voltage Resistors and Dividers



STANDARD ELECTRICAL SPECIFICATIONS

MODEL	RESISTANCE (Ohms)		POWER RATING (Watts)	MAXIMUM VOLTAGE (Volts)
	(Min.)	(Max.)		
TR03	300	10G	0.25	2.5k
TR05	500	100G	0.50	5k
TR10	1000	1T	1.00	10k
TR15	1500	1.5T	1.50	15k
TR20	2000	2T	2.00	20k
TR30	3000	3T	3.00	30k

NOTE: Custom sizes available.

ELECTRICAL SPECIFICATIONS

Resistance Range: 300 Ohms to 6 Tera Ohms.

Resistance Tolerance: $\pm 0.25\%$ to $\pm 20\%$.

(values over 1 Gig Ohms, consult factory)

Ratio Tolerance: 1% to 20%.

Temperature Coefficient: $< 100\text{ppm}/^{\circ}\text{C}$ absolute.

(values over 1 Gig Ohms, consult factory)

Ratio TC: To $5\text{ppm}/^{\circ}\text{C}$. (Ratio over 1000:1, consult factory)

Maximum Voltage: 30 000 volts. (Higher available)

Voltage Coefficient: Typically less than $1\text{ppm}/\text{V}$. (Tested per MIL-STD-202).

Load Life: Less than 0.15%, 1000 hours.

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 $+ 25^{\circ}\text{C}$.

ENVIRONMENTAL SPECIFICATIONS

Temperature Range: $- 55^{\circ}\text{C}$ to $+ 125^{\circ}\text{C}$. (For higher temperature range, consult factory).

FEATURES

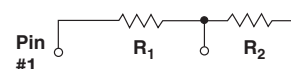
- 30 000 volts capability.
- Very low voltage coefficient to less than $0.1\text{ppm}/\text{Volt}$.
- Outstanding stability under adverse conditions.
- Stable cermet resistive element bonded to a high-purity alumina substrate.
- Tough epoxy-based coating and high voltage stability.
- Designs built from customer supplied schematics.
- Dividers available leaded or non-leaded.
- Typical resistance ratios of 1000:1, 2000:1, etc.
- TCR tracking to $\pm 5\text{ppm}/^{\circ}\text{C}$ depending on values.

APPLICATIONS

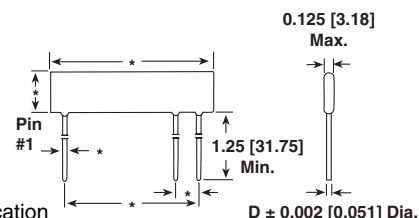
Applications include power supplies, transformers and any application requiring operation within an environment where high voltages are used.

DIMENSIONS in inches [millimeters]

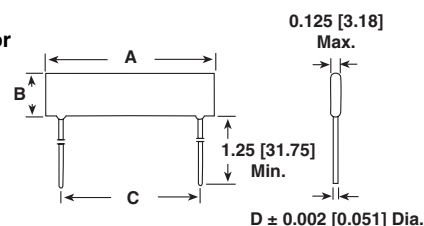
Typical Resistor Schematic for Divider



Typical High Voltage Divider

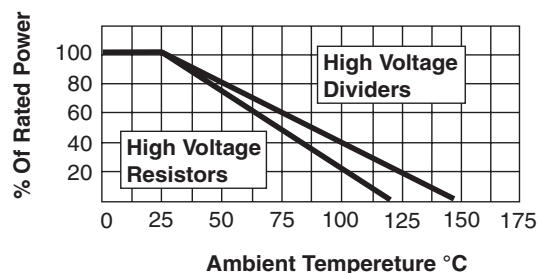


Standard High Voltage Resistor



Dimensions ($\pm 10\%$)

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**ORDERING INFORMATION - HIGH VOLTAGE RESISTORS AND HIGH VOLTAGE DIVIDERS**

RESISTOR TERMINATION FROM FOUR-DIGIT AND FIVE-DIGIT PARTS								
TR	20		G	1001		H	K	e3
MODEL (Resistor)	LENGTH (± 10%) First digit is number of inches, next digit is tenths of an inch.		POWER RATING C = 0.25 D = 0.50 F = 1.00 G = 1.50 H = 2.00 J = 3.00	VALUE (OHMS) First three digits are significant. The last digit specifies the number of zeros to follow.		TOLERANCE F = ± 1% G = ± 2% J = ± 5% K = ± 10% M = ± 20%	TCR K = ± 100 L = ± 200 M = ± 300	LEAD TERMINATION e3 = 100% Sn
TD	20	C	S	1006	3301	H	F	e3
MODEL (Divider)	LENGT H	POWER RATING	RATIO TCR (ppm)	VALUE (OHMS)	RATIO R1/R2	RATIO TOLERANCE	ABS TOL. R1	LEAD TERMINATION
First digit is number of inches, next digit is tenths of an inch.	C = 0.25	S = 10	Resistance Value of R1: First three digits are significant. Last digit specifies the number of zeros to follow.	First three digits are significant. The last digit specifies the number of zeros to follow.	F = 1.0%	F = ± 1%	e3 = 100% Sn	
	D = 0.50	R = 25			G = 2.0%	G = ± 2%		
	F = 1.00	H = 50			H = 3.0%	H = ± 3%		
	G = 1.50	K = 100			J = 5.0%	J = ± 5%		
	H = 2.00	L = 200				K = ± 10%		
J = 3.00	M = 300		M = ± 20%					



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