HIGH VOLTAGE AND HIGH VALUE RESISTORS

UHV SERIES

RoHS Term.W is RoHS compliant & 260°C compatible

- ❒ Resistance values up to 200TΩ (2x10^{14}Ω), tolerances to 1%!
- ❒ Voltage rating to 14KV. Pulse voltage to 50KV avail.
- ❒ Low noise & voltage coefficient
- ❒ Industry's best TCR, as low as ±25ppm/°C

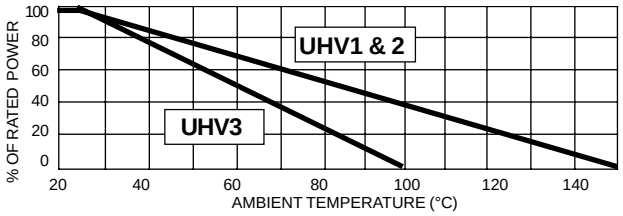
SPECIAL MODIFICATIONS

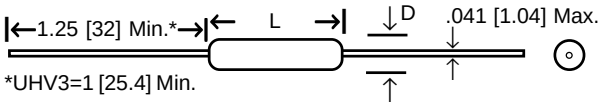
- ❒ Screw terminations available
- ❒ Resistance tolerances to ±0.2%, matching to 0.1%
- ❒ Voltage or resistance ratios up to 1000 : 1±1.0%
- ❒ Increased power, voltage, and operating frequency levels

World's highest resistance range!

RCD Type UHV resistors are suited for all high value applications from general purpose bleed chains to highest reliability X-ray systems and TWT amplifiers. RCD's exclusive complex oxide film features state-of-the-art performance and extended life stability. The unique molecular structure of the resistive element offers exceptional insensitivity to high voltage and thermal shock. The protective insulation provides a high dielectric voltage, and insulation resistance. Series UHV3 is hermetically sealed in a glass or ceramic case, minimizing the effects of moisture or contamination.

DERATING





RCD Type	L (Max.)	D
UHV1	1.102 [28.0]	.315 ±.040 [8.0±1]
UHV2	1.875 [47.6]	.315 ±.040 [8.0±1]
UHV3	2.00 [50.8]	.264 [6.7] Max.

RCD TYPE	Wattage @ 25°C	Working Voltage*	Avail. TCR (ppm/°C)	RESISTANCE RANGE**		
				1%	2%	5%, 10%
UHV1	1.0W	4000V	25	1K to 100M	1K to 100M	1K to 100M
			50	100Ω to 100M	100Ω to 100M	100Ω to 100M
			100	10Ω to 1G	5Ω to 1G	5Ω to 1G
			250	1.1G to 10G	1.1G to 10G	1.1G to 10G
			-2000	2M to 10G	2M to 50G	2M to 100G
UHV2	2.0W	14,000V	25	1K to 100M	1K to 100M	1K to 100M
			50	100Ω to 100M	100Ω to 100M	100Ω to 100M
			100	100K to 1G	100K to 1G	100K to 1G
			250	1.1G to 50G	1.1G to 50G	1.1G to 50G
			-2000	2M to 50G	2M to 100G	2M to 150G
UHV3	1.0W	1000V	-2000	100M to 1G	100M to 1G	100M to 1G
			-2500	1G to 1T	1G to 1T	1G to 1T
			-3500	1T to 5T	1T to 10T	1T to 200T

* Maximum DC or AC_{RMS} working voltage determined by $E = \sqrt{PR}$ below the critical resistance value. Voltage rating is doubled in warm oil. Increased voltage ratings available. **increased range available.

PERFORMANCE CHARACTERISTICS [1]

Temperature Range	UHV1&2 = -55°C to +150°C UHV3 = -40°C to +100°C
Voltage Coefficient [2]	1 - 20ppm typ. UHV1 & UHV2 10 to 80ppm UHV3
Insulation Resistance (500V)	10^{13}Ω
Load Life (1000 hours, typ.)	0.5%
Shelf Life (12 months, typ.)	0.5%
Noise (per freq. decade, typ.)	2.0μV/ V

[1] Characteristics are typical for resistance range up to 1GΩ , consult factory concerning higher values
[2] Measured between 100V and 500V on values above 100M (tighter VC's available)

APPLICATION NOTES

1) Due to possible surface condensation, high voltages should not be applied in conditions of high humidity. The end caps of UHV1&2 are uninsulated and need to be mounted an adequate distance from conductors to ensure adequate isolation voltage.
2) Type UHV3 is coated with silicone to reduce condensation on the glass case and minimize shunt resistance. The coating must not be damaged or subjected to solvents; handle by terminations. UHV3 >100G are supplied with a guard band to minimize leakage current.
3) Resistance measurements on values over 1 Meg are made at 100V.
4) Resistors are available with screw terminations & tapped end caps to provide virtually any voltage or resistance value by combining in series.

RESISTANCE CODE

Resistance Value	Scientific Notation	Resis. Code 1%	Resis. Code 2%-10%
1KΩ	1x10^{3}Ω	1001	102
1MΩ	1x10^{6}Ω	1004	105
10MΩ	1x10^{7}Ω	1005	106
100MΩ	1x10^{8}Ω	1006	107
1GΩ	1x10^{9}Ω	1G00	1G0
10GΩ	1x10^{10}Ω	10G0	10G
100GΩ	1x10^{11}Ω	100G	100G
1TΩ	1x10^{12}Ω	1T00	1T0
10TΩ	1x10^{13}Ω	10T0	10T
100TΩ	1x10^{14}Ω	100T	100T

P/N DESIGNATION:

UHV3 ☐ - 1T50 - F B 101 W

RCD Type
Option Codes assigned by RCD (leave blank if std)
Resis. Code 1% Tol: 3 signif. figures & multiplier (1001=1KΩ, 1004= 1MΩ, 1006=100MΩ, 1G00= 1GΩ, 1T50 =1.5T, etc.)
Resis. Code 2% - 10%: 2 signif. figures & multiplier (105= 1MΩ, 107=100M, 1G5= 1.5GΩ, 15T=15TΩ). Refer to Resis. Code table
Tolerance Code: K=10%, J=5%, G=2%, F=1%
Packaging: B =Bulk, T= Tape & Reel
Temp. Coefficient (PPM/°C): 25=25ppm, 50=50ppm, 101=100ppm, 102=1000ppm, 202=2000ppm, 252=2500ppm, 352=3500ppm
Termination: W= Lead-free, Q= Tin/Lead (leave blank if either is acceptable)

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