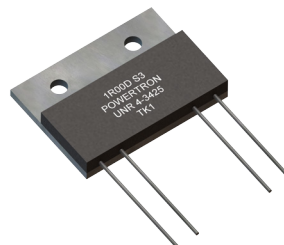


**FEATURES**

- Resistances from 0.05Ohm to 500Ohms
- Power Rating to 50Watt
- Resistance Tolerances to  $\pm 0.01\%$
- TCR to  $\pm 1\text{ppm/K}$
- Load Stability to 0.01%

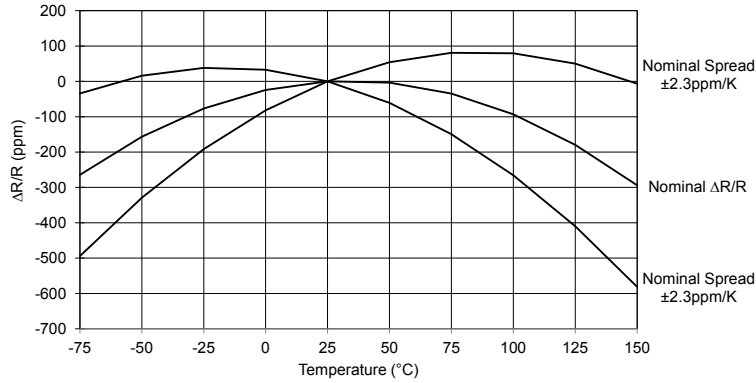


Pb-free  
Available  
**RoHS\***  
COMPLIANT

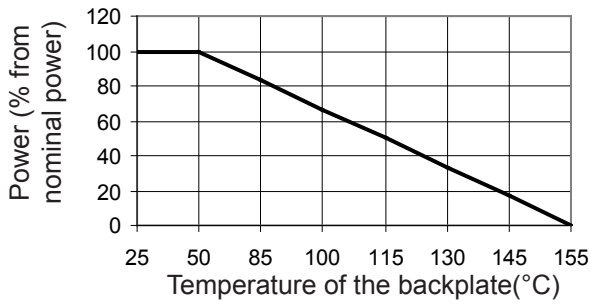
TABLE 1 – SPECIFICATIONS		
TYPE	USR 4-3425	UNR 4-3425
Resistance Range	0.05 to 650 Ohms other resistance values upon request / power rating depending on resistance value	
Power Rating	Free air 70°C	3W (available with heat sink on backside: 5W)
	With heatsink	30W / 50W
Tolerances from 0.05 Ohms from 10.0 Ohms from 50.0 Ohms	0.1% / 0.25% / 0.5% / 1% 0.05% / 0.1% / 0.25% / 0.5% / 1% 0.01% / 0.02% / 0.05% / 0.1% / 0.25% / 0.5% / 1%	
Thermal Resistance	3.5 K/W	2.1 K/W
Stability (1000h)	0.01%	
Shelf Life Stability	25ppm / $\Delta R$ after 1 year 50ppm / $\Delta R$ after 3 years	
Temperature Coefficient	max. $\pm 5\text{ppm/K}$ (-55 to 155°C) typ. $\pm 3\text{ppm/K}$ (-55 to 125°C) typ. $\pm 1\text{ppm/K}$ (25 to 60°C) upon request $\pm 1\text{ppm/K}$ (0 to 60°C)	
Voltage Proof	750 VDC	
Maximum Current	15A	
Thermal EMF	< 0.1 $\mu\text{V/K}$	
Operating Temperature Range	-55 to 155°C	
Resistor Material	NiCr-Foil	
Substrate	Al <sub>2</sub> O <sub>3</sub>	AlN
Housing	Epoxy + Al-heatsink	
Connector Material	Cu / tinned	
Terminals	4 (standard contact D)	
Max. Torque	1 Nm	
Notes		Specially designed for applications with fast changing electrical load

ORDERING INFORMATION
Part Number - Resistance - Contact - Tolerance - TCR (if not standard)
USR 4-3425 10R000 D 0.5% 1ppm/K (0 to 60°C)

**FIGURE 1 – TEMPERATURE COEFFICIENT**



**FIGURE 2 – DERATING**



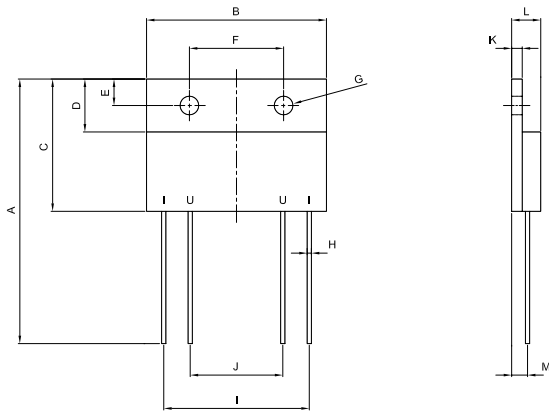
**Power Rating Notes -**

The U-Series Resistors must be attached to a suitable heatsink. The maximum internal resistor temperature is 155°C. To specify an appropriate heatsink use the following formula :

$$R_{\theta H} = \frac{T_{MAX} - (P \times R_{\theta R}) - T_A}{P}$$

Where:  $R_{\theta H}$  = Thermal Resistance of Heatsink ( K/W )  
 $R_{\theta R}$  = Thermal Resistance of Resistor ( K/W )  
 $T_{MAX}$  = Maximum Temperature of Resistor  
 $T_A$  = Ambient Temperature of Heatsink ( °C )  
 $P$  = Power Through Resistor ( W )

**FIGURE 3 – DIMENSIONS** in mm (inches)



Dimension	
A ±2.0 (±0.079)	50.00 (1.97)
B ±0.3 (±0.012)	34.00 (1.34)
C ±0.2 (±0.008)	25.00 (0.98)
D ±0.2 (±0.008)	10.00 (0.39)
E ±0.1 (±0.004)	5.00 (0.20)
F ±0.2 (±0.008)	17.80 (0.70)
G ±0.1 (±0.004)	Ø3.50 (Ø0.14)
H ±0.1 (±0.004)	Ø0.8 (Ø0.031)
I ±0.2 (±0.008)	27.50 (1.08)
J ±0.2 (±0.008)	17.50 (0.69)
K ±0.1 (±0.004)	2.00 (0.08)
L ±0.1 (±0.004)	4.50 (0.18)
M ±0.2 (±0.008)	3.00 (0.12)



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