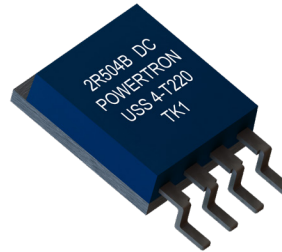


**FEATURES**

- Resistances from 0.2Ohm to 80Ohms
- Power Rating to 15Watt
- Resistance Tolerances to  $\pm 0.01\%$
- TCR to  $\pm 1\text{ppm/K}$
- Load Stability to 0.01%

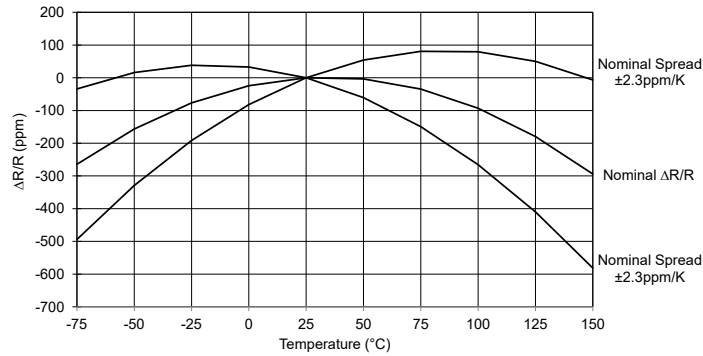


**RoHS\***  
COMPLIANT

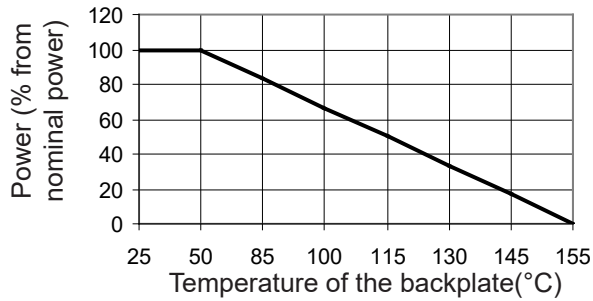
TABLE 1 – SPECIFICATIONS		
TYPE	USS 4-T220	UNS 4-T220
Resistance Range	0.2 to 80 Ohms	
Power Rating	Free air 70°C	1.5W
	With heatsink	10W
Tolerances	from 0.5 Ohms 0.1% / 0.25% / 0.5% / 1% from 10.0 Ohms 0.05% / 0.1% / 0.25% / 0.5% / 1% from 50.0 Ohms 0.01% / 0.02% / 0.05% / 0.1% / 0.25% / 0.5% / 1%	
Thermal Resistance	10.8 K/W	6.8 K/W
Stability (1000h)	0.01%	
Shelf Life Stability	25ppm / $\Delta R$ after 1 year 50ppm / $\Delta R$ after 3 year	
Temperature Coefficient	max. $\pm 5\text{ppm/K}$ (-55 to 155°C) typ. $\pm 3\text{ppm/K}$ (-55 to 125°C) upon request $\pm 1\text{ppm/K}$ (25 to 60°C)	
Voltage Proof	1 kVDC	
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	PPS + Cu heatsink nickel plated	
Connector Material	Cu / tinned	
Terminals	4 (standard contact S)	
Soldering temperature	210°C <30 seconds other versions upon request	
Notes	Specially designed for applications with fast changing electrical load	

ORDERING INFORMATION
Part Number - Resistance - Contact - Tolerance - TCR (if not standard)
USS 2-T220 5K700 S 0.5% 3ppm

**FIGURE 1 – TEMPERATURE COEFFICIENT**



**FIGURE 2 – DERATING**



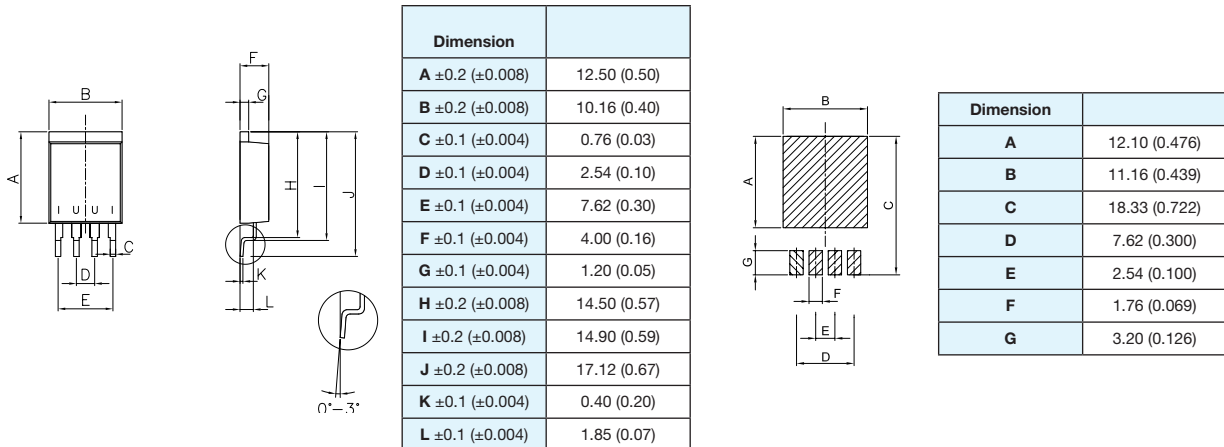
**Power Rating Notes -**

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)



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