

# Metal Film

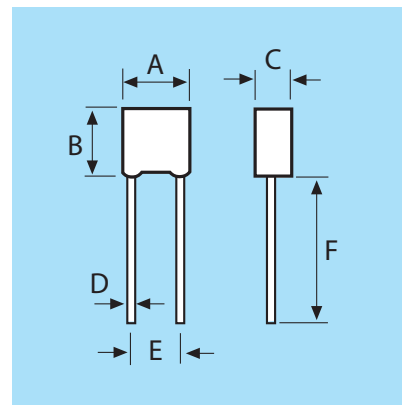
## Series UPR / UPSC

Radial Resistors, extremely precise

- Precision tolerances:  $\pm 0.1\%$  is standard, and tolerances as close as  $\pm 0.01\%$  are available
- Low temperature coefficient: better than 3 ppm/°C, 5 ppm/°C, 10 ppm/°C or 15 ppm/°C
- Long-term stability: better than  $\pm 0.05\%$  per 2,000 hours of operation.
- Wide resistance range: from 10  $\Omega$  to 255 K $\Omega$

### Specifications

- Resistance tolerance:  $\pm 1.0\%$  (tolerances to  $\pm 0.01\%$  upon special request)
- Std. operating temperature:  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- TC Temperature range:  $-20^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- Overload: 6.25 times rated power for 5 seconds at voltage not to exceed 1.5 times maximum rated working voltage,  $\Delta R$  less than 0.05%
- Load life: 2,000 hours at  $+125^{\circ}\text{C}$ ,  $\Delta R$  less than 0.05%
- Moisture resistance: Mil-Std-202, Method 106,  $\Delta R$  less than 0.02%
- Thermal shock: Mil-Std-202, Method 107, Cond. B,  $\Delta R$  less than 0.05%
- Insulation resistance: 10,000 M $\Omega$
- Low temperature operation:  $\Delta R$  less than 0.02%
- Dielectric withstanding voltage:  $\Delta R$  less than 0.02%
- Vibration:  $\Delta R$  less than 0.01%
- Shock:  $\Delta R$  less than 0.02%



Dim.	Dimensions in millimeters Dimensions in inches	
	UPSC	UPR
A	7.50 ± .20 (.295 ± .008)	10.50 ± .30 (.413 ± .012)
B	8.50 ± .20 (.335 ± .008)	9.00 ± .30 (.354 ± .012)
C	2.50 ± .20 (.098 ± .008)	4.00 ± .30 (.157 ± .012)
D	0.63 ± .05 (.025 ± .002)	0.63 ± .05 (.025 ± .002)
E	3.81 ± .38 (0.150 ± .015)	7.62 ± .38 (0.300 ± .015)
F	25 ± 1 (0.98 ± .04)	25 ± 1 (0.98 ± .04)

Types UPSC and UPR Low TC Precision Radial-Lead Resistors - Standard Characteristics							
Model no.	Temperature coefficient ppm/°C	Wattage +70°C	Max. working voltage	Dielect strength U DC	Resistance		Dimensions
					Min.	Max.	
UPSC	$\pm 3$ to $\pm 15$	0.60	300	500	100R	1M	see Matrix
UPR	$\pm 3$ to $\pm 15$	0.60	250	400	10R	255K	see Matrix

Tests	Conditions	MIL-R-55182/9	Typical drifts
Power conditioning (108)	100 hours/rated power at $+125^{\circ}\text{C}$ 90°/30° cycle	-	$\pm 0.02\%$ combined test
Thermal shock (107)	5 cycles $-65^{\circ}\text{C}$ / $+150^{\circ}\text{C}$	$\pm 0.05\%$ combined test	
Short time overload	6.25 times rated power / 5sec	-	-
Low temperature storage and operation	1h stor. 45 min rated pow. at $-65^{\circ}\text{C}$	$\pm 0.05\%$	-
	24h stor. 45 min rated pow. at $-65^{\circ}\text{C}$	-	$\pm 0.01\%$
Terminal strength (211)	2lb pull test	$\pm 0.02\%$	$\pm 0.01\%$
Dielectric withstanding Voltage (301)	300 V Atmospheric 200 V / 100,000 ft.	$\pm 0.02\%$	$\pm 0.01\%$
Resist to soldering (210)	$350^{\circ}\text{C}$ / 3 sec.	$\pm 0.02\%$	$\pm 0.01\%$
Moisture resistance (106)	10 days	$\pm 0.05\%$	$\pm 0.01\%$
Shock	10 shocks 100g 6ms sawtooth	$\pm 0.01\%$	$\pm 0.01\%$
Vibration (204)	10 to 2000 Hz. 20 g 8 hours	$\pm 0.02\%$	$\pm 0.01\%$
Load life (108)	2000 hours at rated power at $+25^{\circ}\text{C}$ , $+85^{\circ}\text{C}$ or $+125^{\circ}\text{C}$	$\pm 0.05\%$	$\pm 0.05\%$
	10,000 hours at rated power at $+125^{\circ}\text{C}$	$\pm 0.5\%$	$\pm 0.2\%$
Storage Life	10,000 h. no load at room conditions	-	$\pm 0.005\%$

The above spec. sheet features our standard products. For further options, please contact our local EBG representative or contact us directly. For updated information, please visit our website!