

Metal Film

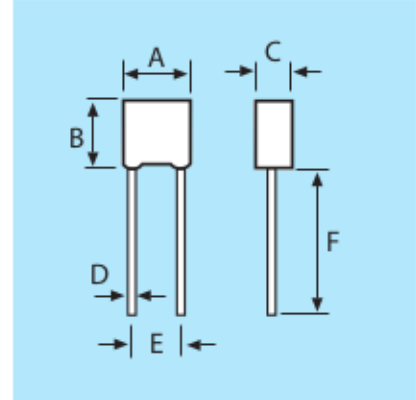
Series UPR / UPSC

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/ $^{\circ}\text{C}$, 5 ppm/ $^{\circ}\text{C}$, 10 ppm/ $^{\circ}\text{C}$ or 15 ppm/ $^{\circ}\text{C}$
- Long-term stability: better than $\pm 0.05\%$ per 2,000 hours of operation.
- Wide resistance range: from 10 Ω to 255 K Ω

Specifications

- Resistance tolerance: $\pm 1.0\%$ (tolerances to $\pm 0.01\%$ upon special request)
- Std. operating temperature: -55°C to $+85^{\circ}\text{C}$
- TC Temperature range: -20°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, ΔR less than 0.05%
- Load life: 2,000 hours at $+125^{\circ}\text{C}$, ΔR less than 0.05%
- Moisture resistance: Mil-Std-202, Method 106, ΔR less than 0.02%
- Thermal shock: Mil-Std-202, Method 107, Cond. B, ΔR less than 0.05%
- Insulation resistance: 10,000 M Ω
- Low temperature operation: ΔR less than 0.02%
- Dielectric withstanding voltage: ΔR less than 0.02%
- Vibration: ΔR less than 0.01%
- Shock: ΔR less than 0.02%



Dim.	Dimensions in millimeters Dimensions in inches	
	UPSC	UPR
A	7.50 \pm .20 (.295 \pm .008)	10.50 \pm .30 (.413 \pm .012)
B	8.50 \pm .20 (.335 \pm .008)	9.00 \pm .30 (.354 \pm .012)
C	2.50 \pm .20 (.098 \pm .008)	4.00 \pm .30 (.157 \pm .012)
D	0.63 \pm .05 (.025 \pm .002)	0.63 \pm .05 (.025 \pm .002)
E	3.81 \pm .38 (.150 \pm .015)	7.62 \pm .38 (.300 \pm .015)
F	25 \pm 1 (0.98 \pm .04)	25 \pm 1 (0.98 \pm .04)

Types UPSC and UPR LowTC Precision Radial-Lead Resistors - Standard Characteristics							
Model no.	Temperature coefficient ppm/ $^{\circ}\text{C}$	Wattage +70 $^{\circ}\text{C}$	Max. working voltage	Dielect strength U DC	Resistance		Dimensions
					Min.	Max.	
UPSC	± 3 to ± 15	0.60	300	500	100R	1M	see Matrix
UPR	± 3 to ± 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°C	$\pm 0.05\%$	-
	24h stor. 45 min rated pow. at -65°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	-	$\pm 0.005\%$