UPR / UPRN Precision Resistors and Networks

UPR

Ultra-Precision Metal Film Resistors

High stability, tight tolerance and low TCR
Radial leads

UPRN

High-Precision Resistor Networks

High stability, tight tolerance, low TCR
and close tracking between resistors



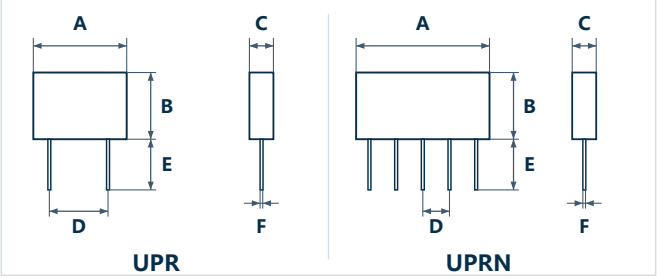
Electrical Specifications

Model	UPR1/10	UPR1/8	UPR1/4	UPRN
Power Rating at 70°C (W)	0.1	0.125	0.5	0.125
Max. Working Voltage (V)	200	250	300	200
Resistance Range	10 Ω - 2 MΩ			10 Ω - 2 MΩ
Absolute Tolerance (%)	±0.01, ±0.02, ±0.05, ±0.1			±0.01, ±0.02, ±0.05, ±0.1, ±0.25, ±0.5, ±1
Relative Tolerance[1]	—			±0.01, ±0.02, ±0.05, ±0.1
TCR (ppm/°C)	±5, ±10, ±15, ±20, ±25			±5, ±10, ±15, ±20, ±25, ±50
Tracking TCR (ppm/°C)	—			±2, ±5, ±10, ±15, ±20, ±25
Operating Temperature (°C)	-55 to +125			-55 to +125

[1] The original UPRN table does not state a unit for relative tolerance. A dash marks an unlisted value.

Package Dimensions (mm)

Ref.	UPR Group 1[2]	UPR Group 2[2]	UPRN
A	10.5 (7.5) ±0.5	9 ±0.5	10.5 - 40
B	9.5 ±0.5	12 ±0.5	12 ±0.5
C	4 (2.5) ±0.3	4 ±0.5	4 ±0.5
D	2.54 - 7.6	2.54 - 5.08	≥2.54
E	10 ±2	10 ±2	10 ±2
F	0.6 ±0.05	0.6 ±0.05	0.6 ±0.05



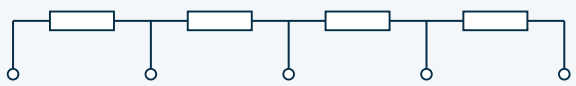
[2] The source does not map the two UPR size groups to specific models.

Test Characteristics

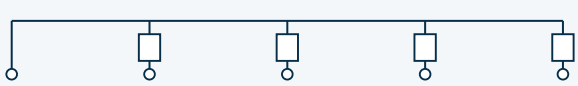
Test	Acceptance Limit	UPR Change	UPRN Change
Short-Time Overload	±(0.1% + 0.05 Ω)	±0.002%	±0.002%
Thermal Shock	±(0.1% + 0.05 Ω)	±0.002%	±0.02%
Dielectric Strength	±(0.1% + 0.05 Ω)	±0.005%	±0.05%
Resistance to Soldering Heat	±(0.1% + 0.05 Ω)	±0.005%	±0.005%
Load Life	±(0.2% + 0.05 Ω)	±0.10%	±0.10%
Mechanical Shock	±(0.1% + 0.05 Ω)	±0.05%	±0.05%
High-Frequency Vibration	±(0.1% + 0.05 Ω)	±0.03%	±0.03%

UPRN Internal Circuit Examples

Series Chain with Taps



Common-Terminal Network



Source Ordering Example **UPR-10K-P-C7**