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(UPR) **Ultra Precision Resistor Networks**

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Product Introduction

Token's wider Ohmic range precision resistor networks have more options.

Features:

- Precision tolerance tight to $T(\pm 0.01\%)$.
- Superior TCR narrowed to C10 (±2 ppm/°C).
- Precision metal film networks, Lead (Pb)-free and RoHS compliant.
- Any value available within resistance range, excellent stability and reliability.

Applications:

- Bridge Circuitry.
- Precision Amplifiers.
- Test and Measurement.
- Medical, Precision Bypass.
- Simulation Equipment, Divider.
- High Precision Instrumentation.Audio (High End Stereo Equipment).
- Commercial Avionics, Data Convertors.

Providing design engineers with an economical means of creating precision voltage dividers and set accurate amplifier gains for a wide range of applications, Token Electronics is offering its series of precision thin-film networks.

Constructed with Token EE/RE 1/10 series to form a stable, high precision and low temperature coefficient. The networks are protected from moisture by a proprietary passivation material.



Customer can specify Tolerance and Temperature Coefficient

range designed to satisfy challenging and specific technical requirements. The resistance and TCR range makes these networks ideal for a number of applications, including test and measurement devices, commercial avionics and medical equipment or devices. Other applications for the networks are instrumentation amplifiers, measurement bridge circuitry, data convertors and precision analogue circuits.

The thin-film networks also can be designed with custom schematics to meet individual customer specifications. The networks provide excellent resistor precision and accuracy with resistor tolerances to $\pm 0.01\%$. They have TCR values to $\pm 2\text{ppm/}^{\circ}\text{C}$, providing superior performance over the military temperature range.

UPR Series equate IRC, EBG Precision Devices with fast delivery and more competitive price. For non-standard technical requirements and special applications, please contact us. Besides, you can link to Token official website "Precision Resistors" to get more information.

UPR Versus UPSC Series:

- UPSC Series have the advantage of compact body size.
- The electric characteristics of UPR and UPSC are the same.
- UPR Series have the advantage of wider resistance range $10\Omega \sim 5M\Omega$.

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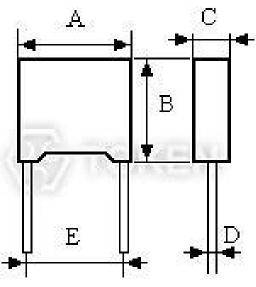
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Dimensions & Technical Characteristics

Dimensions & Technical Characteristics (UPR)

	A	10.5 ± 0.3					
D' (II.:4)	В	9.1 ± 0.3					
Dimensions (Unit:	C	4.0 ± 0.3					
mm)	D	0.6 ± 0.05					
	E	7.62 ± 0.5					
Working Temperature (℃)		-10 ~ +70					
Rated Wattage at 70°C (W)		0.2					
Maximum Working Voltage (V)		250					
Nominal Resistance R	ange (Ω)	$10\Omega\sim5M\Omega$	$100\Omega\sim 500K\Omega$				
Nominal Resistance T (%)	olerance	A2(±0.02), A5(±0.05), B(±0.1)	T(±0.01), A2(±0.02), A5(±0.05),B(±0.1)				
Temperature Coeffici °C) [TCR: +25°C ~+85°C		C9(±3), C7(±5), C6(±10), C5(±15), C3(±25)	C10(±2), C9(±3), C7(±5), C6(±10), C5(±15), C3(±25)				



(UPR) Resistor Network Dimensions

- Remark: 1. Customer can specify Tolerance and Temperature Coefficient range to meet your own needs.
- 2. It can be required to Token's representatives if customer's requirement beyonds the range of Token's specifications.

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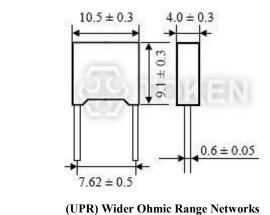


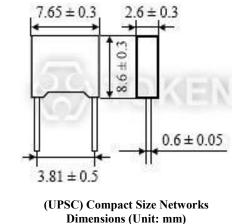


► UPR Versus UPSC Series

UPR Versus UPSC Series

Nominal Resist	ance Range (Ω)	Nominal Resistance	Temperature Coefficient (ppm/℃)		
UPR	UPSC	Tolerance (%)	[TCR: +25°C ~+85°C]		
$10\Omega\sim5M\Omega$	$40\Omega\sim5M\Omega$	$A2 \pm 0.02$ $A5 \pm 0.05$ $B \pm 0.1$	$C9 \pm 3ppm$ /°C $C7 \pm 5ppm$ /°C $C6 \pm 10ppm$ /°C $C5 \pm 15ppm$ /°C $C3 \pm 25ppm$ /°C		
100Ω ~ 500ΚΩ	$200\Omega \sim 500 \mathrm{K}\Omega$	$T \pm 0.01 A2 \pm 0.02 A5 \pm 0.05 B \pm 0.1$	$C10 \pm 2ppm/^{\circ}C$ $C9 \pm 3ppm/^{\circ}C$ $C7 \pm 5ppm/^{\circ}C$ $C6 \pm 10ppm/^{\circ}C$ $C5 \pm 15ppm/^{\circ}C$ $C3 \pm 25ppm/^{\circ}C$		





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Precision Resistors (UPR)

Order Codes

Order Codes (UPR) Resistance Value $10 \Omega \sim 5 M \Omega$

UPR	100R		A5		C6		P	
Part Number UPR	Resistance Value (Ω)		Resistance Tolerance (%)		Temperature coefficient (PPM/°C)		Package P Bulk	
	10R	10	A2	±0.02	C3	±25		
	100R	100	A5	±0.05	C5	±15		
	1K	1K	В	±0.10	C6	±10		
	1K1	1.1K		-	C7	±5		
	11K	11K			C9	±3		
	1M1	1.1M						

Order Codes (UPR) Resistance Value $100 \Omega \sim 500 K \Omega$

<u> </u>								
UPR	1K		A5		C6		P	
Part Number UPR	Resistance Value (Ω)		Resistance Tolerance (%)		Temperature coefficient (PPM/°C)		Package P Bulk	
CTIC	1K	1K	T	±0.01	C3	±25	1	Built
	1K1	1.1K	A2	±0.02	C5	±15		
	11K	11K	A5	±0.05	C6	±10		
	110K	110K	В	±0.10	C7	±5		
					C9	±3		
					C10	±2		

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Precision Resistors (UPR)

General Information

High Precision Devices Made in Token

Token is equipped to design and produce custom components to meet many design and reliability demands.

Token's line of high-reliability and precision products reflects a long-term commitment to our industrial and military customers. In addition to standard industry-grade resistor products, we also have many resistive products designed to meet various military source-controlled drawings.

We continually strive to meet the changing application requirements of the markets by developing new products and manufacturing technologies on an on-going basis.

Enhanced Precision and Stability for Low-Cost Uses

Every component Token provides to the commercial, industrial, and military markets for cost-efficiency uses is backed by the comprehensive testing and failure analysis capabilities of our own technical staff, whom are industrial experts in understanding and meeting the requirements of the environment.

Low TCR - Fast Approach to a Steady State

Token Electronics provides a precision Temperature Coefficient of Resistance TCR as low as 2 ppm/°C, If you must guarantee a smaller resistance change in your application. TCR is the best known parameter used to specify a resistor's stability, and is used to depict the resistive element's sensitivity to temperature change due to ambient temperature variations.

A resistor's TCR tells how much its value changes as its temperature changes. It is usually expressed in ppm/°C (parts per million per degree Centigrade) units.

Long-Term Proven Service

Our technical expertise, our knowledge of the industry, our broad product offering, and our ability to work long-term are all part of Token's ongoing commitment to meeting the changing requirements of our most reliability-conscious customer, today and in the future.



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