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(UPSC)
**Ultra Precision
Resistor Networks**

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Product Introduction

Token's compact size ultra-precision resistor networks take accuracy pole position.

Features :

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

Applications :

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

Following market demands for components to deliver ultra-precision applications in often very confined spaces, design engineers can now benefit from new technologies capable of Temperature Coefficient C10 ($\pm 2 \text{ ppm}/^\circ\text{C}$), compact body size UPSC Networks.

Constructed with Token EE/RE 1/10 series to form a stable, high precision and low temperature coefficient network resistor, 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 (UPSC) series ideal for a number of applications, including test and measurement devices, commercial avionics and medical equipment or devices.

The thin-film (UPSC) 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.

UPSC Series equate IRC, EBG Precision Devices with more competitive price and fast delivery. For non-standard technical requirements and special applications, please contact our manufacturer or sales representatives. Besides, you can link to Token official website "[Precision Resistors](http://www.token.com.tw)" to get more information.

UPR Versus UPSC Series:

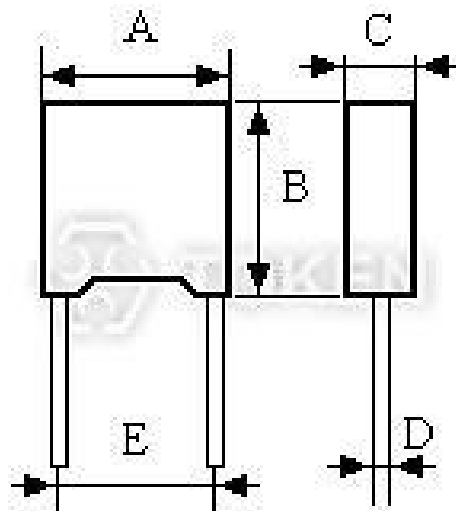
- UPSC Series have the advantage of compact body size.
- The electric characteristics of UPR and UPSC are the same.
- UPR Series have the advantage of wider resistance range $10\Omega \sim 5\text{M}\Omega$.



► Dimensions & Technical Characteristics

Dimensions & Technical Characteristics (UPSC)

Dimensions (Unit: mm)	A	7.65± 0.3	
	B	8.6± 0.3	
	C	2.6± 0.3	
	D	0.6 ± 0.05	
	E	3.81± 0.5	
Working Temperature (°C)		-10 ~ +70	
Rated Wattage at 70°C (W)		0.2	
Maximum Working Voltage (V)		250	
Nominal Resistance Range (Ω)		40Ω ~ 5MΩ	200Ω ~ 500KΩ
Nominal Resistance Tolerance (%)		A2(±0.02), A5(±0.05), B(±0.1)	T(±0.01), A2(±0.02), A5(±0.05),B(±0.1)
Temperature Coefficient (ppm/°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)

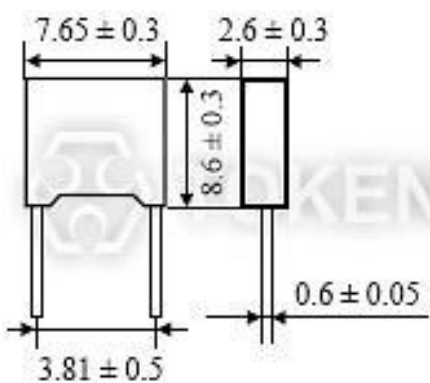
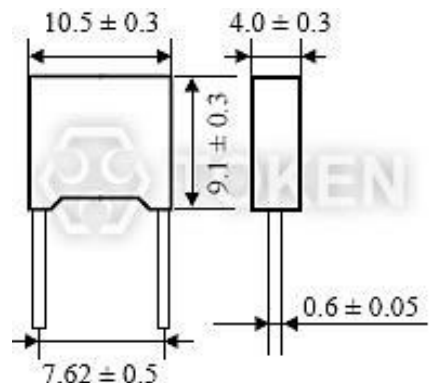


Resistor Network (UPSC) Dimensions

- 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 beyond the range of Token's specifications.

UPSC Versus UPR Series

UPSC Versus UPR Series

Nominal Resistance Range (Ω)		Nominal Resistance Tolerance (%)	Temperature Coefficient (ppm/ $^{\circ}\text{C}$) [TCR: +25 $^{\circ}\text{C}$ ~ +85 $^{\circ}\text{C}$]
UPSC	UPR		
40 Ω ~ 5M Ω	10 Ω ~ 5M Ω	A2 $\pm$ 0.02 A5 $\pm$ 0.05 B $\pm$ 0.1	C9 $\pm$ 3ppm/ $^{\circ}\text{C}$ C7 $\pm$ 5ppm/ $^{\circ}\text{C}$ C6 $\pm$ 10ppm/ $^{\circ}\text{C}$ C5 $\pm$ 15ppm/ $^{\circ}\text{C}$ C3 $\pm$ 25ppm/ $^{\circ}\text{C}$
200 Ω ~ 500K Ω	100 Ω ~ 500K Ω	T $\pm$ 0.01 A2 $\pm$ 0.02 A5 $\pm$ 0.05 B $\pm$ 0.1	C10 $\pm$ 2ppm/ $^{\circ}\text{C}$ C9 $\pm$ 3ppm/ $^{\circ}\text{C}$ C7 $\pm$ 5ppm/ $^{\circ}\text{C}$ C6 $\pm$ 10ppm/ $^{\circ}\text{C}$ C5 $\pm$ 15ppm/ $^{\circ}\text{C}$ C3 $\pm$ 25ppm/ $^{\circ}\text{C}$
 (UPSC) Compact Size Networks Dimensions (Unit: mm)		 (UPR) Wider Ohmic Range Networks Dimensions (Unit: mm)	

Order Codes

Order Codes (UPSC) Resistance Value 40 Ω ~ 5M Ω

UPSC	530R		A5		C6		P
Part Number	Resistance Value (Ω)		Resistance Tolerance (%)		Temperature coefficient (PPM/ $^{\circ}$ C)		Package
UPSC							P Bulk
	53R	53	A2	± 0.02	C3	± 25	
	530R	530	A5	± 0.05	C5	± 15	
	5K3	5.3K	B	± 0.10	C6	± 10	
	53K	53K			C7	± 5	
	530K	530K			C9	± 3	

Order Codes (UPSC) Resistance Value 200 Ω ~ 500K Ω

UPSC	10K		T		C6		P
Part Number	Resistance Value (Ω)		Resistance Tolerance (%)		Temperature coefficient (PPM/ $^{\circ}$ C)		Package
UPSC							P Bulk
	200R	200	T	± 0.01	C3	± 25	
	10K	10K	A2	± 0.02	C5	± 15	
	100K	100K	A5	± 0.05	C6	± 10	
			B	± 0.10	C7	± 5	
					C9	± 3	
					C10	± 2	

► 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.