



APPROVAL SHEET

UPRNS21SB6T1506

**ULTRA-PRECISION
METAL FILM RESISTOR
MOLD TYPE**

PRODUCE	CHECK AND APPROVE	ACCEPTED BY
EM	CE	HONORABLE CUSTOMER
Edison Chen	Charles Chen	
19 Jun., 2025	19 Jun., 2025	



1. PRODUCT:

ULTRA- PRECISION METAL FILM RESISTOR NETWORKS, MOLD TYPE

2. PART NUMBER:

Part number is identified by the series name, number of leads, number of resistors, layout profile, tolerance, temperature coefficient, packing type and resistance value.

For Example:

UPRNS	2	1	S	B	6	T	1506
Series Name	Number of Leads	Number of Resistors	Layout	Tolerance	TCR	Packing	Resistance

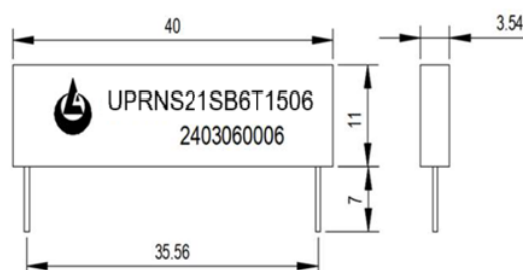
- (1) Series name: UPRNS series
- (2) Number of the leads: 2 pins
- (3) Number of resistors: 1 pcs
- (4) Layout profile: S: series
- (5) Tolerance: B = $\pm 0.1\%$;
- (6) TCR 6= ± 10 ppm/ $^{\circ}\text{C}$;
- (7) T Packing: tube/box
- (8) Resistance value: 1506=150M Ω

3. Marking: Digital marking with part number and batch number and series number



4. ELECTRICAL CHARACTERISTICS

Type	UPRNS21SB6T1506	型号
Standard applied	Q\SLC026-2010; GB/T5729-1994;	技术标准
Rated dissipation, P_{70}	2.5W	70℃下额定功率
Maximum operating voltage U_{max}	5,000V _{DC}	U_{max} 额定工作电压
Resistance range	150MΩ	标准阻值范围
Tolerance	B(±0.1%);	精度
TCR	±10ppm/°C;	温度系数
Voltage coefficient	<1ppm/V	电压系数
Operating Temperature range	-55℃~25℃; 25℃~125℃	工作环境温度
Dimension ±0.5(mm)		±0.5(mm) 尺寸





5. ENVIRONMENTAL CHARACTERISTICS

(1) Temperature Coefficient Test

IEC 60115-1, 4.8: Test of resistors at room temperature and 60°C above the room temperature. Then measure the resistance. The Temperature Coefficient is calculated by the following equation and its value should be within the range requested.

$$\text{Resistor Temperature Coefficient} = \frac{R - R_0}{R_0} \times \frac{1}{t - t_0} \times 10^6$$

R = Resistance value under the testing temperature

R₀ = Resistance value at the room temperature

t = the 2nd testing temperature

t₀ = Room temperature

(2) Short Time Overload Test

IEC60115-1 4.13: Applied at 6 times power rating voltage for 5 seconds, the resistor should be free from defects. The change of the resistance value should be within ±(0.1%) compared with the value before the test.

(3) Solderability

IEC 60115-1, 4.17: 235±5°C for 3±0.5 Seconds, there are at least 95% solder coverage on the termination.

(4) Damp Heat Steady State

IEC 60115-1, 4.24: 40±2°C, 90-95% RH for 56 days, loaded with 0.1 times RCWV or the maximum working voltage whichever is lower. The change of the resistance value should be within ± (0.5%) compared with the value before the load.

(5) Load Life Test

IEC 60115-1, 4.25: 70±2°C at 10,000V for 1,000+48/-0 Hr. (1.5Hr. on, 0.5Hr. off). The resistors shall be arranged not much effected mutually by the temperature of others and the excessive ventilation shall not be performed. The change of the resistance value should be within ± (0.5%) compared with the value before the load.



(6) Temperature Coefficient Test

IEC 60115-1, 4.8: Test of resistors at room temperature and 60°C above the room temperature. Then measure the resistance. The Temperature Coefficient is calculated by the following equation and its value should be within the range requested.

$$\text{Resistor Temperature Coefficient} = \frac{R - R_0}{R_0} \times \frac{1}{t - t_0} \times 10^6$$

R = Resistance value under the testing temperature

R₀ = Resistance value at the room temperature

t = the 2nd testing temperature

t₀ = Room temperature

(7) Short Time Over Load Test

IEC60115-1 4.13: At 2.5 times rated voltage or 1.5 times the maximum working voltage whichever is lower for 5 seconds, the resistor should be free from defects. The change of the resistance value should be within ± (0.25%) compared with the value before the test.

(8) Solderability

IEC 60115-1, 4.17: 235±5°C for 3±0.5 Seconds, there are at least 95% solder coverage on the termination.

(9) Resistance to soldering heat:

IEC 60115-1, 4.18: 260±3°C for 10±1 Seconds, immersed to a point 3±0.5mm from the body. The change of the resistance value should be within ±(0.25%) as compared with the value before the test.

(10) Damp Heat Steady State

IEC 60115-1, 4.24: 40±2°C, 90-95% RH for 56 days, loaded with 0.1 times RCWV or the maximum working voltage whichever is lower. The change of the resistance value should be within ± (1%) compared with the value before the load.



(11) Load Life Test

IEC 60115-1, 4.25: $70 \pm 2^{\circ}\text{C}$ at RCWV or the maximum working voltage whichever is lower for 1,000+48/-0 Hr. (1.5Hr. on, 0.5Hr. off). The resistors shall be arranged not much effected mutually by the temperature of others and the excessive ventilation shall not be performed.

The change of the resistance value should be within $\pm (1\%)$ compared with the value before the load.

(12) Accidental Overload Test

IEC 60115-1, 4.26: 4 times RCWV for 1 Minute. No evidence of flaming or arcing

(13) Resistance to Solvent

IEC 60115-1, 4.30: IPA for 5 ± 0.5 Min. with ultrasonic. No deterioration occurred.

(14) Humidity resistance

IEC 60115-1, 4.24: $40 \pm 2^{\circ}\text{C}$, 90-95% RH for 56 days, loaded with 0.1 times RCWV or the maximum working voltage whichever is lower. The change of the resistance value should be within $\pm (1\%)$ compared with the value before the load.

Disclaimer

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise.

Thunder Precision Resistors makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product to the maximum extent permitted by applicable law.