

## Type UPF Series

### Key Features

High precision

Tolerance  
down to  
±0.02%

TCR down to  
±5PPM/°C

Excellent  
stability



The TE Connectivity High Precision Metal Film Led Resistor is available in two sizes with resistance tolerance down to 0.02% and TCR 5% as standard. This high precision, coupled with excellent stability makes it ideal for applications such as precision measurement equipment

### Applications

Precision  
Equipment

Measurement  
Equipment

### Characteristics – Electrical

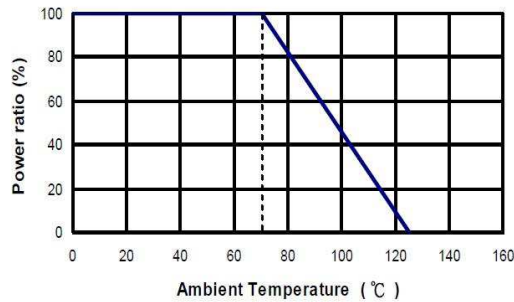
Type	Power Rating @70°C	Max. Operating Voltage	Max. Overload Voltage	Resistance Range			TCR (PPM/°C)
				±0.02%	±0.05%	±0.1%	
UPF25	1/4W	250V	500V	10Ω -500KΩ			±5
				10Ω 1M Ω			±10
							±15
							±25
UPF50	1/2W	300V	600V	10Ω -500KΩ			±5
				10Ω 1M Ω			±10
							±15
							±25

Operating Voltage= $\sqrt{P \cdot R}$  or Max. operating voltage listed above, whichever is lower.

Overload Voltage= $2.5 \cdot \sqrt{P \cdot R}$  or Max. overload voltage listed above, whichever is lower.

Operating Temperature range -55 ~ 125°C

### Derating



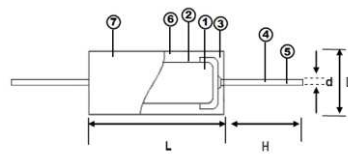
### Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	Resistance value at room temperature and room temperature+60°C
Short Time Overload	±(0.05%+0.05Ω)	<b>JIS-C-5201-1 5.5</b> RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	> 1,000MΩ	<b>MIL-STD-202F Method 302</b> Apply 500V <sub>DC</sub> for 1 minute
Endurance	±(0.2%+0.05Ω)	<b>MIL-STD-202F Method 108A</b> 70±2°C, RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	±(0.2%+0.05Ω)	<b>MIL-STD-202F Method 103B</b> 40±2°C, 90~95% R.H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Solderability	95% min. Coverage	<b>MIL-STD-202F Method 208H</b> 245±5°C for 5 seconds
Resistance to Soldering Heat	±(0.05%+0.01Ω)	350±10°C for 3 seconds or 260±5°C for 10 seconds
Terminal Strength	Tensile: ≥2.5kg	Tensile strength: for 10 sec. Torsional strength: Rotated through 360°, 5 rotations.
Pulse Overload	±(0.1%+0.01Ω)	<b>JIS-C-5201-1 5.8</b> 4 times RCWV for 10000 cycles with 1second "ON" and 25 seconds "OFF"
Temperature Cycle	±(0.05%+0.05Ω)	-25°C(30min)/+85°C(30min), 5 cycles
Resistance to Solvent	No deterioration of coatings and markings	<b>JIS-C-5201-1 6.9</b> Trichroethane for 3 min. with ultrasonic

RCWV (Rated continuous working voltage)=  $\sqrt{P \cdot R}$  or Max. Operating voltage whichever is lower

Storage Temperature: 15~28°C; Humidity < 80%RH

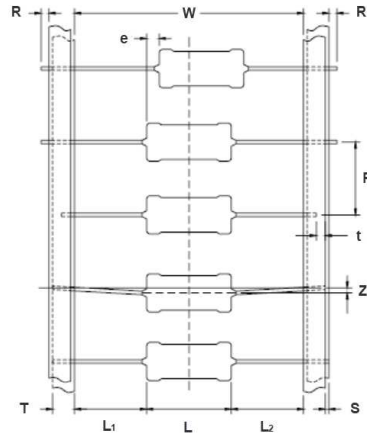
### Construction and Dimensions



① Ceramic Core (Alumina ceramic)	⑤ Lead Wire (Tinned annealed copper wire)
② Resistor Element (Nickel alloy)	⑥ Molding (Expose)
③ Terminal (Tinned iron cap)	⑦ Marking (expose based ink)
④ Connection	

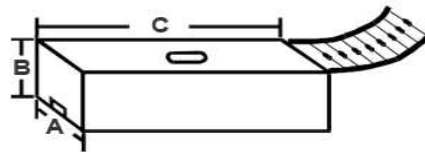
Type	L	D	H	d	Weight (g) (1000pcs)
UPF25	7.0±0.3	2.7±0.4	26±3	0.6±0.05	230
UPF50	10.2±0.3	4.0±0.4	25±3	0.6±0.05	430

### Taping Specification



Type	L	W	P	L1- L2 Max.	T	Z Max.	R Max.	t Max.	e Max.	S Max.
UPF25	7.0±0.3	52±1	5±0.3	1.0	6±0.5	0.8	0	2.5	0.5	0.5
UPF50	10.2±0.3	52±1	5±0.3	1.0	6±0.5	0.8	0	2.5	0.5	0.5

### Ammo Packing



Type	A	B	C	Pack Qty
UPF25	85±1	78±1	260±1	2,000
UPF50	85±1	78±1	260±1	1,000

### How To Order

UPF	50	B	500R	V	
Product Type	Power Rating	Tolerance	Resistance	TCR	Packing
UPF	25: ¼ W 50 : ½ W	B: ±0.1%	10R 10Ω 100R : 100Ω 1K0 : 1,000Ω 100K : 100KΩ	V: ±5PPM B – 10ppm Y – 15ppm D – 25ppm	T: AMMO : BULK