

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 Leaded 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

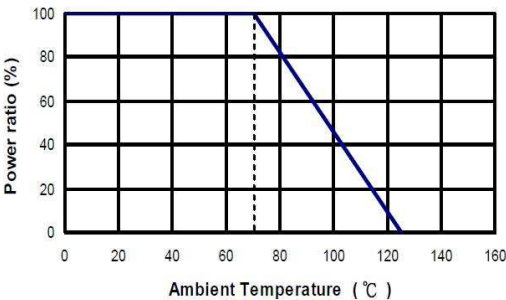
Type	Power Rating @70°C	Max. Operating Voltage	Max. Overload Voltage	Resistance Range			TCR (PPM/°C)
				±0.02%	±0.05%	±0.1%	
UPF25	1/4W	250V	500V	10Ω -500KΩ			±5
				10Ω 1M Ω			±10
							±15
							±25
UPF50	1/2W	300V	600V	10Ω -500KΩ			±5
				10Ω 1M Ω			±10
							±15
							±25

Operating Voltage= $V(P \cdot R)$ or Max. operating voltage listed above, whichever is lower.

Overload Voltage= $2.5 \cdot V(P \cdot R)$ or Max. overload voltage listed above, whichever is lower.

Operating Temperature range -55 ~ 125°C

Derating



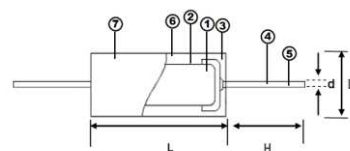
Environmental Characteristics

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	$\pm(0.05\%+0.05\Omega)$	JIS-C-5201-1 5.5 RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	> 1,000M Ω	MIL-STD-202F Method 302 Apply 500V _{DC} for 1 minute
Endurance	$\pm(0.2\%+0.05\Omega)$	MIL-STD-202F Method 108A 70 $\pm$ 2°C, RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	$\pm(0.2\%+0.05\Omega)$	MIL-STD-202F Method 103B 40 $\pm$ 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	MIL-STD-202F Method 208H 245 $\pm$ 5°C for 5 seconds
Resistance to Soldering Heat	$\pm(0.05\%+0.01\Omega)$	350 $\pm$ 10°C for 3 seconds or 260 $\pm$ 5°C for 10 seconds
Terminal Strength	Tensile: $\geq$ 2.5kg	Tensile strength: for 10 sec. Torsional strength: Rotated through 360°, 5 rotations.
Pulse Overload	$\pm(0.1\%+0.01\Omega)$	JIS-C-5201-1 5.8 4 times RCWV for 10000 cycles with 1second "ON" and 25 seconds "OFF"
Temperature Cycle	$\pm(0.05\%+0.05\Omega)$	-25°C(30min)/+85°C(30min), 5 cycles
Resistance to Solvent	No deterioration of coatings and markings	JIS-C-5201-1 6.9 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

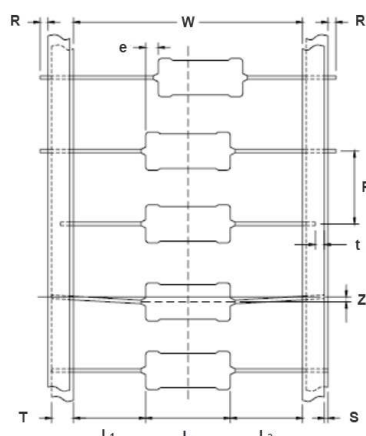
Construction and Dimensions



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	

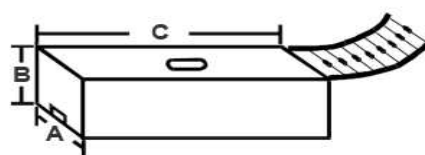
Type	L	D	H	d	Weight (g) (1000pcs)
UPF25	7.0 $\pm$ 0.3	2.7 $\pm$ 0.4	26 $\pm$ 3	0.6 $\pm$ 0.05	230
UPF50	10.2 $\pm$ 0.3	4.0 $\pm$ 0.4	25 $\pm$ 3	0.6 $\pm$ 0.05	430

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