High Precision Metal Film Leaded Resistor (UPF Series)

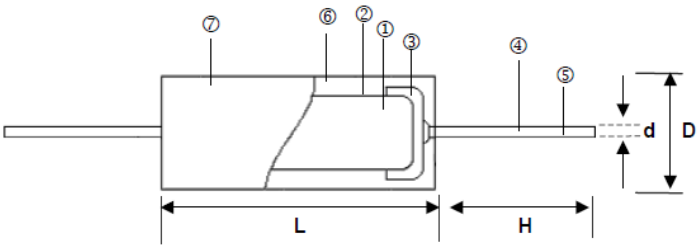
■Features

- Very tight tolerance down to ±0.02%
- Extremely low TCR down to ±5PPM/℃
- High precision
- Excellent stability

■Applications

- Precision Equipment
- Measurement Equipment

■Construction



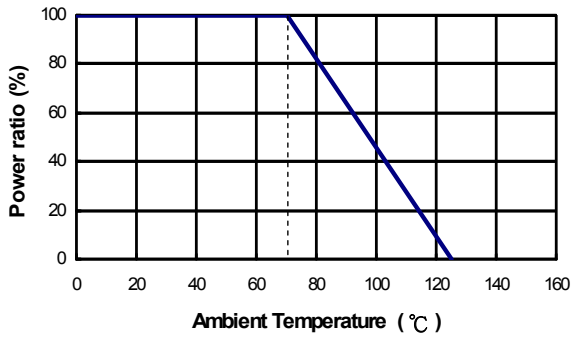
①	Ceramic Core (Alumina ceramic)	⑤	Lead Wire (Tinned annealed copper wire)
②	Resistor Element (Nickel alloy)	⑥	Molding (Expose)
③	Terminal (Tinned iron cap)	⑦	Marking (Expose based ink)
④	Connection		

■Dimensions

Unit : mm

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

■Derating Curve



■Part Numbering

UPF	50	B	1K0	V

Product Type	Power Rating	Tolerance	Resistance	TCR
UPF	25 : ¼ W 50 : ½ W	B : ±0.1%	1R0 : 1Ω 100R : 100Ω 1K0 : 1,000Ω 100K : 100,000Ω	V : ±5PPM

■Standard Electrical Specifications

Item / Type	Power Rating 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Resistance Range ±0.02%	±0.05%	±0.1%	TCR (PPM/°C)
25	1/4W	-55 ~ +125°C	250V	500V	10Ω -500KΩ			±5
50	1/2W		300V	600V	10Ω -500KΩ			±5

■ **Operating Voltage V=√(P*R)**

■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)	**JIS-C-5201-1 5.5** RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	> 1,000MΩ	**MIL-STD-202F Method 302** Apply 500V_{DC} for 1 minute
Endurance	±(0.2%+0.05Ω)	**MIL-STD-202F Method 108A** 70±2℃, Max. working voltage for 1000 hrs with 1.5 hrs “ON” and 0.5 hrs “OFF”
Damp Heat with Load	±(0.2%+0.05Ω)	**MIL-STD-202F Method 103B** 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	**MIL-STD-202F Method 208H** 245±5℃ 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)	**JIS-C-5201-1 5.8** 4 times RCWV for 10000 cycles with 1second “ON” and 25 seconds “OFF”
Temperature Cycle	±(0.05%+0.05Ω)	-25℃(30min)/+85℃(30min), 5 cycles
Resistance to Solvent	No deterioration of coatings and markings	**JIS-C-5201-1 6.9** Trichroethane for 3 min. with ultrasonic

■ **Storage Temperature: 25±3°C; Humidity < 80%RH**

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