Ultra Precision Wire-Wound Resistors

Type UPW Series

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The resistive element is wire wound onto a moulded high temperature plastic bobbin with a central former. The direction of winding is reversed part way through the winding, giving very low values of inductance.

These Neohm resistors use bobbin assemblies with flattened lead ends, providing high resistance to pull, vibration and torsional forces during handling, assembly and life.

Key Features

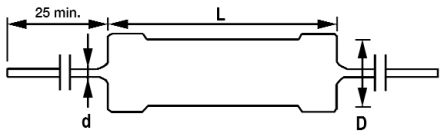
- **Custom weld tabs and copper weld leads ensure a good mechanical and electrical connection between the element and the lead wires. Protection is given to the windings by means of a layer of silicone RTV rubber. This allows movement of the windings during temperature cycling due to loads and to varying ambient temperatures. Outer protection is given by means of a hot transfer moulded epoxy compound which ensures an airtight coating with no trapped air.**
- **Superior quality wire-wound resistors with very low selection tolerances and temperature coefficients down to 1 ppm. 3 case sizes are available. T/C, ratio and pair matching is available and customer specifications are welcome. These components exhibit high stability under load and severe environmental conditions.**

Characteristics - Electrical

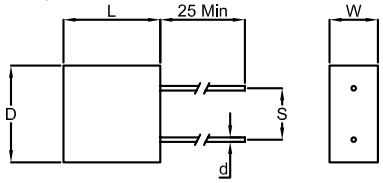
	UPW15	UPW25	UPW30	UPW50
Rated Power @ 125°C (W) Derate to zero at 145°C	0.125	0.25	0.3	0.5
Resistance Range (Ohms) Min	R10	R10	R10	R10
Max	300K	1M0	1M0	2M0
Tolerance (%)	0.005 0.01 0.02 0.05 0.1 0.2 0.5 1			
Code Letter	E L P W B A D F			
Limiting Element Voltage (V)	150	300	150	400
Temperature Coefficient (ppm/°C) Typ.	± 3 (0°C to +85°C)			
Max.	± 5 (-55°C to +125°C) ± 1 available on request			
Operating Temperature Range (°C)	-55 to +145			
Long Term Stability (Load)	< 50 ppm @ 10,000 hrs < 100ppm @ 26,000 hrs			
Thermal EMF	< 0.2 µ V /°C			

Dimensions

Style A

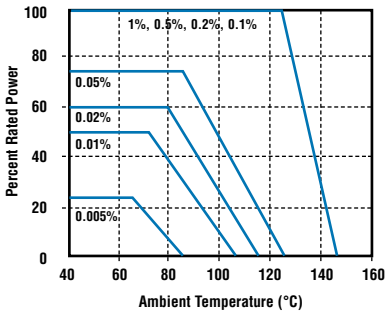


Style B



Type	Style	L ± 0.4	D ± 0.4	W ± 0.5	s ± 0.2	d nom
UPW15	A	6.35	3.18	-	-	0.64
UPW25	A	9.53	4.75	-	-	0.64
UPW30	B	7.62	7.62	3.18	3.81	0.64
UPW50	A	12.7	6.35	-	-	0.81

Derating Curve



UPW Series resistors must be derated for tolerances below 0.1%. Use the graph to select tolerance versus operating temperature to determine the percentage rated power for operation.
No derating is required for operation below 20 °C.

Mounting

The resistors are suitable for processing on automatic insertion equipment and cutting and bending machines.

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Marking

The resistors are marked with the following information:- Manufacturer's name, type number, value and tolerance, four figure date code.

Packaging

UPW Series resistors are packed loose in boxes.

Performance Characteristics

The evaluation of the performance characteristics is carried out with reference to IEC specifications QC 400 000 and QC 400 100.

TEST REF	Long Term Tests ±(0.25% + 0.05 ohm)
4.23	Climatic sequence
4.24	Damp heat, steady state
4.25.1	Endurance at 70 °C
4.25.3	Endurance at 145 °C
TEST REF	**Short Term Tests ±(0.1% + 0.01 ohm)**
4.13	Overload
4.16	Robustness of terminations
4.18	Resistance to soldering heat
4.19	Rapid change of temperature
4.22	Vibration

All resistance values are measured at a distance of 9.53mm (0.375 inch) from the end cap.

How to Order

Orders for these components should include the following information:-
Type, tolerance code letter and value e.g. **UPW30 L 1K15**