Resistors

Cement Coated Wirewound Resistors

W30 Series

- Values down to 10m ohms
- Tolerance to 1%
- Flameproof protection
- Custom built to meet pulse requirements
- Surface mount ZI-form option

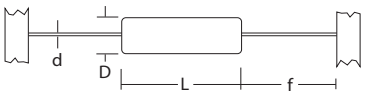
All Pb-free parts comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

Electrical Data

		W31	Notes
Power rating at 25˚C	watts	3.0	
Power rating at 70˚C	watts	2.5	
Resistance range	ohms	0R01 to 10K	
TCR (-55 to 155˚C)	ppm/˚C	See below	
Resistance tolerance	%	<R10: 5 >=R10: 1, 2, 5	
Standard values		E24 series preferred	Other values to special order
Thermal impedance	˚C/watt	83	
Ambient temperature range	˚C	-55 to 200	
Limiting element voltage	volts	100	
TCR	ppm/˚C	R01: ±1000	
		>R01- ≤R033: ±500	
		>R033- ≤R091: ±200	
		>R091- ≤10R: ±150	
		>10R: ±100	

Physical Data

Maximum Dimensions (mm) and Weight (g)					
Type	L max.	D max.	f min.	d nom.	Wt.nom.
W31	13	5.6 (note 1)	22.75	0.8	1.0



Note 1: 5.8 for values ≤0R1

Construction

A high quality ceramic substrate is assembled with interference fit end caps to which are welded the element winding and termination wires. The protection is then applied to the body, providing an effective seal which is impervious to moisture, shock, vibration, fungus and salt spray.

Terminations

Material Solder coated copper.

Strength The terminations meet the requirements of IEC 68.2.21.

Solderability The terminations meet the requirements of IEC 115-1, Clause 4.17.3.2.

Marking

W31 resistors are legend marked with type reference, resistance value and tolerance. Values are marked in accordance with IEC 62.

Solvent Resistance

The body and marking are resistant to all normal industrial cleaning solvents suitable for printed circuits.

Flammability

The resistor coating will not burn under any condition of applied temperature or component overload.

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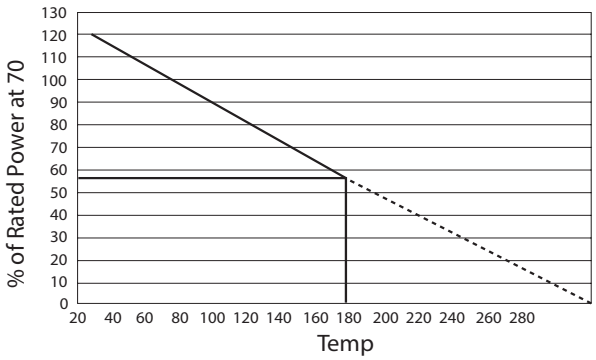
Performance Data

		Maximum	Typical
Load: 1000 hrs 3 watts @ 25°C	ΔR%	5.0 + .001Ω	3.5
1000 hrs 2.5 watts @ 70°C	ΔR%	5.0 + .001Ω	3.5
Dry heat: 1000 hrs at 200°C	ΔR%	5.0 + .001Ω	3.5
Derating from room temperature		see derating curve	
Short term overload 10 x rated power for 5 seconds	ΔR%	5.0 + .001Ω	1.0
Climatic	ΔR%	5.0 + .001Ω	3.5
Climatic category		55/200/56	
Long term damp heat: 56 days	ΔR%	3.0 + .001Ω	1.0
Temperature rapid change	ΔR%	2.0 + .001Ω	1.5
Resistance to solder heat	ΔR%	5.0 + .001Ω	2.0
Vibration and bump	ΔR%	5.0 + .001Ω	2.0
Voltage proof	volts	500 min	
Pulse handling		Data available by request	

W31 Series Derating Curve



Application Notes

The terminations should not be bent closer than 1.6mm from the body, and the recommended minimum bend radius is 1.2mm.

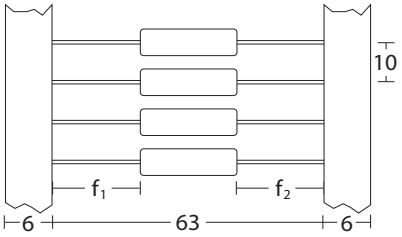
Care must be taken when determining clearance between the resistor body and the P.C.B. or other components. Resistance is measured 6mm from body.

Packaging

The standard method of packaging is taped in ammo packs.
Can be provided on reels by request.

W31 can be supplied with radial, goalpost or lancet pre-formed leads- see
https://www.ttelectronics.com/TTElectronics/media/ProductFiles/Resistors/ApplicationNotes/TN008-resistors-Leadform-Capability.pdf

W31 is also available in ZI-form SMD format packed in blister tape- see
https://www.ttelectronics.com/TTElectronics/media/ProductFiles/Resistors/Datasheets/ZI-form.pdf



$f_1 - f_2 \leq 1.4$ mm

Ordering Procedure

Example: W31-1K0FA1 (W31, 1 kilohm ±1%, Pb-free)

W	3	1	-	1	K	0	F	A	1
1				2			3	4	

1 Type	2 Value	3 Tolerance	4 Packing			
W31	E24 = 3/4 characters	F = ±1%	A1	Ammo	1000/box	Standard
	R = ohms	G = ±2%	T1	Tape	1000/reel	
	K = kilohms	J = ±5%				

General Note

TT Electronics reserves the right to make changes in product specification without notice or liability.
All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

BI Technologies IRC Welwyn

www.ttelectronics.com/resistors