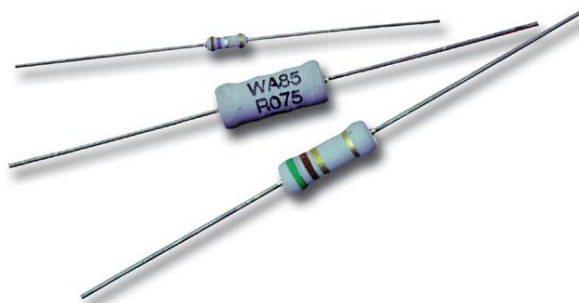


General Purpose Cement Coated Wirewound Resistors

WA80 Series

Features:

- Surface mount ZI-form option
- Flameproof protection
- Can replace carbon comp. in many applications
- Resistance values down to 0.01 ohms
- Ideal for pulse handling applications



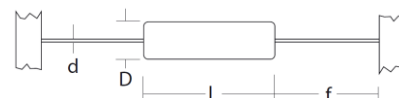
All Pb-free parts comply with EU Directive 2011/65/EU amended by (EU) 2015/863

Electrical Data

		WA82	WA83	WA835	WA84	WA85
Power rating @25°C	W	1	2	2.5	3	5
Power rating @70°C	W	0.86	1.6	2	2.5	4.3
Resistance range	ohms	R068 – 430R	R05 – 900R		R01 – 2K2	R015 to 6K8
Limiting element voltage	V	50		75	100	150
Isolation voltage	V	250			350	500
TCR	ppm/°C	<1R0: 350, ≥1R0: 200				
Resistance tolerance	%	<20R: 5, 10, ≥20R: 1, 2, 5, 10				
Standard values		E24 preferred				
Thermal impedance	°C/W	140	110	90	82	54
Ambient temperature range	°C	-55 to 200				

Physical Data

Dimensions in mm and weight in g							
Type	L max	D max	f min	d nom	PCB mounting centres	Min. bend radius	Wt. nom
WA82	6.2	2.8	21.2	0.6	10.2	0.6	0.22
WA83	9	3.6	19.8	0.8	12.5	1.2	0.5
WA835	12.5	4.5	17.8		17.5		1.1
WA84	14.5	5.2 ¹	24.55		20		
WA85	16.5	7 ²	23.55		22		1.75



Note 1: 5.4 for values ≤R10 Note 2: 7.2 for values ≤R10

Construction

A high-quality ceramic substrate is assembled with interference fit end caps to which are welded the termination wires. The resistive element is wound on the substrate and welded to the caps. Cement protection is applied to the resistor body before marking with indelible ink.

Terminations

Terminations are hot tin dipped copper wire. They meet the strength requirements of IEC 60115-1 clause 9.5 and the solderability requirements of IEC 60115-1 clause 11.1.

Marking

WA85 resistors are legend marked with type reference, resistance value and tolerance in conformance with IEC 60062.

WA82, 83, 835 and 84 resistors at values R10 and above are colour coded with 4 bands in conformance with IEC 60062. Values below R10 are 3-band marked, two digits and tolerance; there is no multiplier band.

General Note

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WA80 Series

Solvent Resistance

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

Flammability

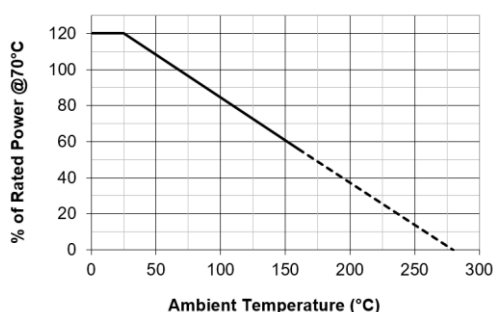
The resistor coating will not burn under any condition of applied temperature or component overload.

Performance Data

		Maximum (+R001)	Typical
Load at rated power: 1000 hours at 25 or 70°C	±ΔR%	5	3
Dry heat: 1000 hours at 200°C	±ΔR%	5	3
Short term overload	±ΔR%	5	1
Climatic	±ΔR%	5	2
Climatic category		55/200/56	
Long term damp heat: 56 days	±ΔR%	5	1
TRC & vibration	±ΔR%	5	1
Robustness & solder heat	±ΔR%	5	1

Pulse handling see: <https://www.ttelectronics.com/TTElectronics/media/ProductFiles/Resistors/ApplicationNotes/Wirewound-Pulse-Overload-Resistors.pdf>

Temperature Derating

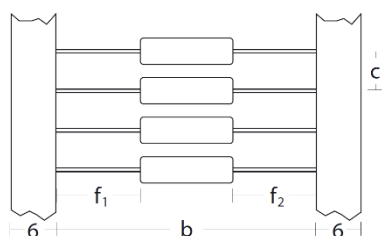


Application Notes

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

Packaging

All resistors are supplied tape-packed ready for loading onto automatic sequencing and insertion machines. The critical dimensions are shown below. Component wires will not protrude beyond the outside edge of the tapes. All taped resistors will be supplied either on reels or in ammo packs.



Dims in mm	WA82	WA83	WA835	WA84	WA85
b	52			67	63
c	5			10	
f ₁ – f ₂	≤ 1.4				

WA80 series resistors can be supplied with radial, goalpost or lancet pre-formed leads. For details see:

<https://www.ttelectronics.com/TTElectronics/media/ProductFiles/Application-Note/TN008-Resistors-Leadform-Capability.pdf>

WA83, 84 and 85 are also available in ZI-form SMD format packed in blister tape. For details see:

<https://www.ttelectronics.com/TTElectronics/media/ProductFiles/Datasheet/ZI-form.pdf>

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WA80 Series

Ordering Procedure

Example: **WA83-470RJ I** (WA83, 470 ohms $\pm 5\%$, Pb-free)

W	A	8	3		-	4	7	0	R	J	I
1					2				3	4	

1 Type	2 Value	3 Tolerance	4 Packing			
WA82	E24 = 3/4 characters R = ohms K = kilohms	F = ±1%	I	WA82	Ammo	5000/box
WA83		G = ±2%		WA83		2500/box
WA835		J = ±5%		WA835		1500/box
WA84		K = ±10%		WA84	1000/box	
WA85				WA85	Tape 750/reel	

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