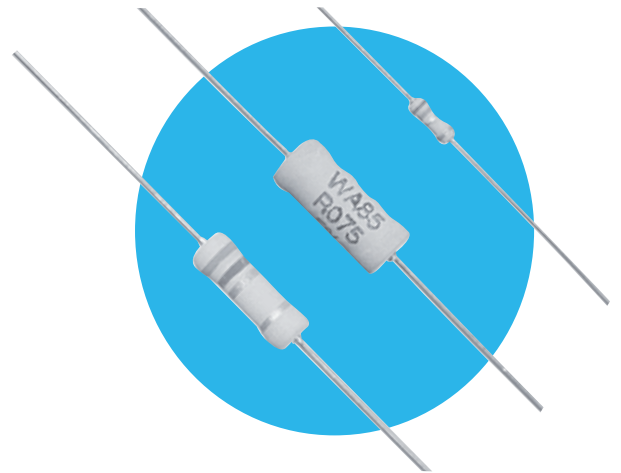


## General Purpose Cement Coated Wirewound Resistors

### 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 (RoHS2)

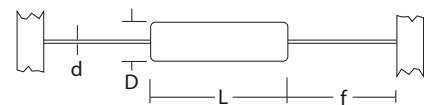
## Electrical Data

		WA82	WA83	WA835	WA84	WA85
Power rating at 25°C	watts	1	2.0	2.5	3.0	5
Power rating at 70°C	watts	.86	1.6	2.0	2.5	4.3
Resistance range	ohms	OR068 to 430	OR05 to 900R	OR05 to 900R	OR01 to 2K2	OR015 to 6K8
Limiting element voltage	volts	50	50	75	100	150
Isolation voltage	volts	250	250	250	350	500
TCR	ppm/°C	<1Ω:350		>1Ω:200		
Resistance tolerance	%	<20R: 5, 10		≥20R: 1, 2, 5, 10		
Values		E24 preferred				
Thermal impedance	°C/watt	140	110	90	82	54
Ambient temperature range	°C	- 55 to 155				

## Physical Data

Dimensions (mm) and Weight (g)							
Type	L max.	D max.	f min.	d nom.	PCB mounting centres	Min bend radius	Wt nom.
WA82	6.2	2.8	21.20	0.6	10.20	0.6	0.22
WA83	9.0	3.6	19.80	0.8	12.70	1.2	0.50
WA835	12.5	4.5	17.80	0.8	18.40	1.2	0.50
WA84	14.5	5.2 (Note 1)	24.55	0.8	20.30	1.2	1.10
WA85	16.5	7.0 (Note 2)	23.55	0.8	22.86	1.2	1.75

Note 1: 5.4 for values ≤0R1    Note 2: 7.2 for values ≤0R1



### 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

**Material** Hot tin dipped copper wire

**Strength** The terminations meet requirements of IEC 68.2.21.

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

### 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.

**WA80 Series**

**Marking**

WA85 resistors are legend marked with type reference, resistance value and tolerance. In conformance with IEC 62.

WA82, 83, 835 and 84 resistors 0R1 and above are colour coded with 4 bands in conformance with IEC 62. Values below 0R1 are 3 band marked, two digits and tolerance, there is no multiplier band.

**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	Typical
Load at rated power: 1000 hrs at 25 or 70°C	ΔR%	5.0 + .001Ω	3.0
Dry heat: 1000 hrs at 200°C	ΔR%	5.0 + .001Ω	3.0
Derating from rated power at 25°C		See derating curve	
Short term overload	ΔR%	5.0 + .001Ω	1.0
Climatic	ΔR%	5.0 + .001Ω	2.0
Climatic category	ΔR%	55/200/56Ω	
Long term damp Heat: 56 days	ΔR%	5.0 + .001Ω	1.0
T.R.C. & Vibration	ΔR%	5.0 + .001Ω	1.0
Robustness & Solder Heat	ΔR%	5.0 + .001Ω	1.0
Pulse Handling		Data available by request	

**Application Notes**

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**

All resistors are supplied tape packed ready for loading onto automatic sequencing and insertion machines. The critical dimensions are shown in figure 2.

Component wires will not protrude beyond the outside edge of the tapes.

All taped resistors will be supplied either on reels or in ammopacks, depending upon quantities ordered.

These products are also available in a range of lead forming options. In particular, WA83, 84 and 85 are available in ZI-form SMD format packed in blister tape - see:

<http://www.ttelectronicsresistors.com/pdf/datasheet/ZI-form.pdf>

Type	WA82	WA83	WA835	WA84	WA85
b	52	52	52	67	63
c	5	5	5	10	10

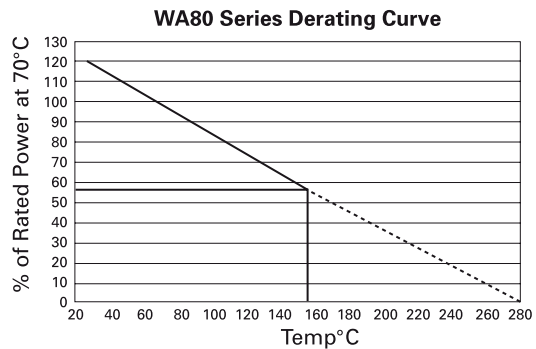
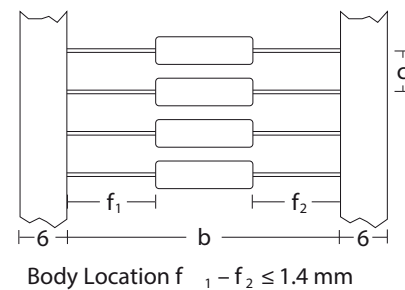


Figure 2



**General Note**

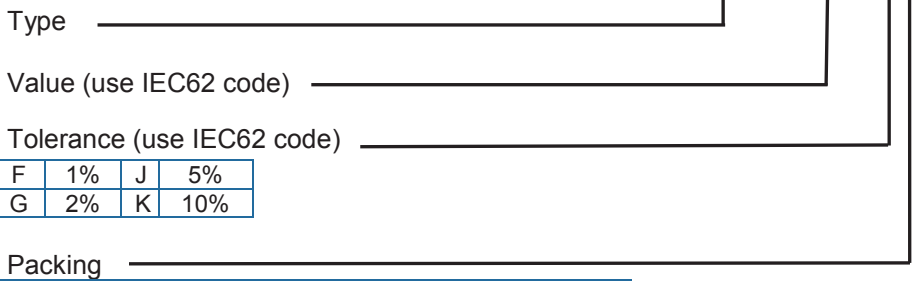
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WA80 Series

## Ordering Procedure

Example: WA83 at 470 ohms and 5% tolerance in ammo pack box of 2500 pieces -

**W A 8 3 - 4 7 0 R J I**



F	1%	J	5%
G	2%	K	10%

I	Ammo	WA82	5000/box	Standard
		WA83	2500/box	
		WA835	1500/box	
		WA84	1000/box	
	Tape	WA85	750/reel	

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