

# General Purpose Surface Mounted Resistors



## WCR Series

### Marking

All resistors are individually marked with 3 digits. The first two digits are the significant figures and the third defines the number of added zeros. Jumpers are marked 000. Types 0201 and 0402 have no marking.

E96 1% components that can not be marked with 4 digits will be marked with a standard 3 digit code. Details can be supplied upon request.

### Solvent Resistance

The protective epoxy lacquer and marking are resistant to all normal industrial cleaning fluids suitable for printed circuits.

Table 1

Resistance value ohms	Noise dB
≤100R	-10
>100R, ≤10K	0
>10K, ≤100K	+15
>100K, ≤1MΩ	+20
>1MΩ	+30

## Performance Data

		Maximum Change							
		0201	0402	0603	0805	1206	1210	2010	2512
Load: 1000 hrs at 70°C	ΔR%	10R-100K : 1 >100K : 2	4R7-100K : 1 >100K : 2	1R-100K : 1 >100K : 2	1R-100K : 1 >100K : 2	1R-100K : 1 >100K : 2	1R-100K : 1 >100K : 2	1R-100K : 1 >100K : 2	3% + 0.1R
Shelf life: 12 months at room temp.	ΔR%	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Derate linearly to zero from 70°C		zero @ 155 °C							
Short term overload (6.25 x rated power)	ΔR%	2	2	2.5	2.5	2.5	2.5	2.5	5
Max voltage	volts	50	100	100	200	400	400	400	400
Climatic	ΔR%	3	3	3	3	3	3	3	3
Climatic Category		55/125/56							
Long term damp heat	ΔR%	1							
Temperature rapid change	ΔR%	1	1	1	1	1	1	1	1
Resistance to solder heat	ΔR%	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Vibration and bump	ΔR%	1	1	1	1	1	1	1	1
Noise		see table 1							
Insulation resistance	ohms	> 1G							
Voltage proof	volts		100	300	500	500	500	500	500

### Packaging

All chips in 1210 size and smaller are tape mounted and supplied on standard 8mm paper tape, 2010 size on 12mm paper tape or plastic tape, and 2512 size on 12mm plastic tape reel, as IEC publication 286-3.

180mm (7 inch) reel is standard

250mm (10 inch) reel carrying double the standard quantity can be supplied by agreement.

### 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.

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### Ordering Procedure

This product has two valid part numbers:

**European (Welwyn) Part Number: WCR1206-10KFI** (1206, 10 kilohms  $\pm 1\%$ , Pb-free)

W	C	R	1	2	0	6	-	1	0	K	F	I
1		2			3			4		5		

1	2	3	4	5	
Type	Size	Value <sup>1</sup>	Tolerance <sup>1</sup>	Grade / Packing	
WCR	0201	E24 = 3 characters	F = $\pm 1\%$	I = Standard	
	0402	E96 = 4 characters		A = AEC-Q200 grade <sup>2</sup>	
	0603	R = ohms		Both grades use standard packing as follows:	
	0805	K = kilohms			
	1206	M = megohms			
	1210			0201	20000/reel
	2010			0402	10000/reel
	2512			0603, 0805, 1206, 1210	5000/reel
				2010, 2512	4000/reel

Note 1: For zero ohm jumper chips use the dummy value & tolerance code **R005J**

Note 2: AEC-Q200 grade on resistor chips is not available in 0201 size.

**USA (IRC) Part Number: WCR-WCR1206LF-1002-F-P-LT**

(1206, 10 kilohms  $\pm 1\%$ , Pb-free)

W	C	R	-	W	C	R	1	2	0	6	L	F	-	1	0	0	2	-	F	-	P	-	L	T
1		2			3			4		5			6		7									

Family	1	3	4	5	6	7	
Model	Size	Termination	Value	Tolerance	Packing		
WCR	WCR	0201	LF = Pb-free	3 digits + multiplier	F = $\pm 1\%$	P-LT= Paper Tape	
		0402		R = ohms for values <100 ohms		0201	20000/reel
		0603				0402	10000/reel
		0805				0603, 0805, 1206, 1210	5000/reel
		1206				2010	4000/reel
		1210				E-LT = Plastic Tape	
		2010				2512	4000/reel
		2512					

Note: For zero ohm jumper chips use value & tolerance code **R000J**

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