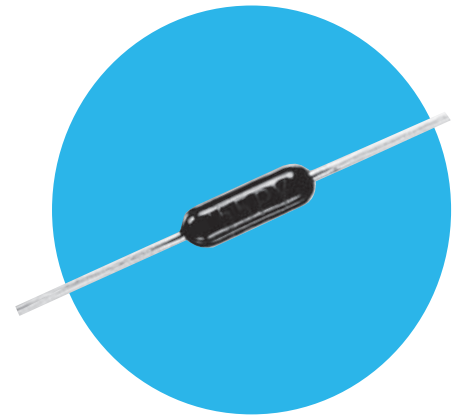


## Precision Metal Film Resistors

### RCP series

- Precision resistors with uprated power
- Low TCRs over a wide resistance range
- Tolerance down to 0.05%
- Low noise and negligible voltage coefficient
- Express delivery available



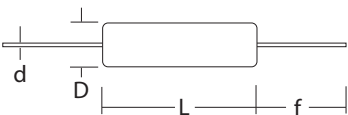
 All Pb-free parts comply with EU Directive 2011/65/EU (RoHS2)

### Electrical Data

		RC55P	RC65P	RC70P	Notes
Power rating at 70°C	watts	0.5	1.0	1.5	
Resistance range	ohms	1R to 4M	1R to 4M	1R to 10M	
Limiting element voltage	volts	350	500	500	
Isolation voltage	volts	500	500	700	
TCR (20 to +70°C) & codes	ppm/°C	5(V), 10(T), 15(Y), 25(D), 50(C), 100(Z)			See resistance restrictions
Resistance tolerance (code)	%	0.05(W), 0.1(B), 0.25(C) & 0.5(D)			
Standard values		E24, E96 preferred			Any value to order
Thermal impedance	°C/watt	110	70	60	
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.
RC55P	7.2	2.5	30	0.6	10.2	0.6	0.24
RC65P	10.0	3.7	30	0.6	12.7	0.6	0.40
RC70P	15.5	5.5	30	0.8	18.4	1.2	1.15



### Construction

Ceramic rods are coated with a metal film and plated steel caps are force fitted. A helical cut is used to adjust the film to its final value.

Termination wires are welded to the caps and the resistor is protected with a specially formulated epoxy coating.

### Terminations

- Material** Solder-coated copper wire.
- 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

Type reference, TCR code, resistance value and tolerance code. The resistance value marking conforms to IEC 62.

### Solvent Resistance

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

### General Note

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RCP series

## Application Notes

### Matched Sets and Networks

Welwyn has many years experience in the supply of matched sets of precision resistors.

The individual resistors within a set or module can be manufactured with a tolerance of  $\pm 0.05\%$  and a TCR of  $\pm 5\text{ppm}/^\circ\text{C}$ .

Resistors can be supplied matched for tolerance and TCR down to  $\pm 0.02\%$  and  $\pm 2\text{ppm}/^\circ\text{C}$ , either as separate resistors or pre-assembled and encapsulated within a plastic box.

## Performance Data

		RC55P Values $10 \leq 100k$		Other Values/Styles	
		Actual Performance		*Actual Performance	
		Maximum	Typical	Maximum	Typical
Load at rated power : 1000 hrs at $70^\circ\text{C}$	$\Delta R \%$	0.10	0.03	0.5	0.1
Dry heat : 1000 hrs at $155^\circ\text{C}$	$\Delta R \%$	0.3	0.1	1.0	0.15
Shelf life : 12 months at room temperature	$\Delta R \%$	0.015	0.003	0.1	0.03
Derating from rated power at $70^\circ\text{C}$		Zero at $155^\circ\text{C}$		Zero at $155^\circ\text{C}$	
Short term overload	$\Delta R \%$	0.5	0.005	0.1	0.02
Climatic	$\Delta R \%$	0.25	0.05	0.3	0.1
Climatic category		55/155/56		55/155/56	
Long term damp heat	$\Delta R \%$	0.25	0.05	0.5	0.1
Temperature rapid change	$\Delta R \%$	0.04	0.02	0.2	0.05
Resistance to solder heat	$\Delta R \%$	0.02	0.003	0.06	0.03
Vibration and bump	$\Delta R \%$	0.2	0.002	0.06	0.02
Noise (in a decade of frequency)	$\mu\text{V/V}$	0.1	0.03	1.0	0.1
Voltage coefficient of resistance	$\text{ppm/V}$		<1		<1

\*An 0.01 ahm addition to be added to the performance claims of all resistors <10R.

## Table of Resistance Restrictions

TCR ppm/ $^\circ\text{C}$	Tolerance								
	RC55			RC65			RC70		
	0.05%	0.1 - 0.25%	0.5% <sup>3</sup>	0.05%	0.1 - 0.25%	0.5% <sup>3</sup>	0.05%	0.1 - 0.25%	0.5% <sup>3</sup>
5 <sup>1</sup>	10R to 500K	10R to 500K	1R to 500K	10R to 500K	10R to 500K	1R to 500K	10R to 750K	10R to 750K	10R to 750K
10	10R to 1M	10R to 1M	1R to 1M	10R to 1M	10R to 1M	1R to 1M	10R to 1M	10R to 1M	1R to 1M
15	10R to 1M	2R49 to 1M	1R to 1M	10R to 1M	5R to 1M	1R to 1M	10R to 1M	10R to 2M	1R to 2M
25	10R to 1M	2R49 to 2M	1R to 2M	10R to 1M	5R to 2M	1R to 2M	10R to 1M	10R to 5M	1R to 5M
50 <sup>2</sup>	10R to 1M	2R49 to 2M	1R to 4M	10R to 1M	5R to 2M	1R to 4M	10R to 1M	5R to 10M	1R to 10M
100 <sup>2</sup>	10R to 1M	1R to 2M	1R to 4M	10R to 1M	1R to 2M	1R to 4M	10R to 1M	1R to 10M	1R to 10M

Note1:

1. Based on sampling. 100% screened product is available.
2. For maximum availability, where the ohmic value permits, 25ppm/ $^\circ\text{C}$  is preferred to 50 or 100ppm/ $^\circ\text{C}$ .
3. For maximum availability, where the ohmic value permits, 0.25% is preferred to 0.5%.

### Packaging

The standard method of packaging RC55P resistors is taped in ammpacks. Taped resistors on reel or loose packed components can also be supplied by special request. In the case of tape packed components the usable lead length is reduced by the width of the tape.

### General Note

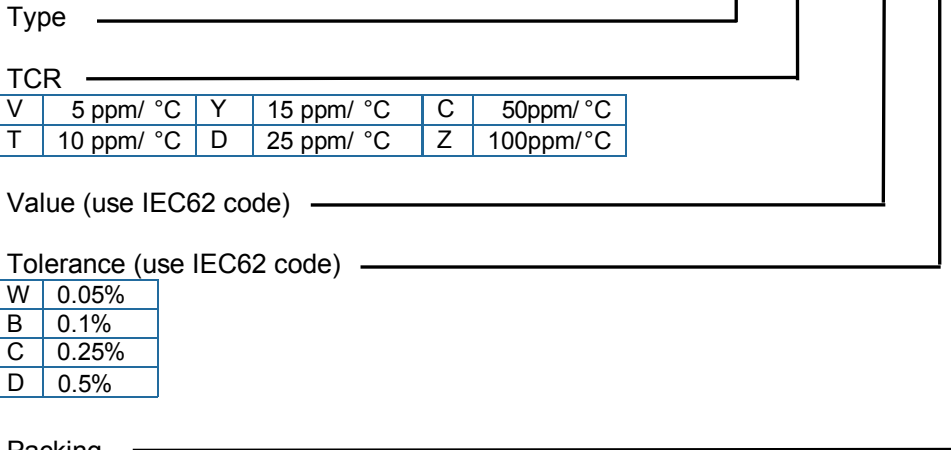
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RCP series

## Ordering Procedure

Example: RC55P with TCR of 5ppm/°C at 31.6 kilohms and 0.1% tolerance in an ammo pack box of up to 1000 pieces -

**RC55PV - 31K6BI**



V	5 ppm/ °C	Y	15 ppm/ °C	C	50ppm/ °C
T	10 ppm/ °C	D	25 ppm/ °C	Z	100ppm/ °C

W	0.05%
B	0.1%
C	0.25%
D	0.5%

I	Ammo	RC55P, RC65P	Up to 1000/box	Standard
	Bulk	RC70P	250/box	

For 5ppm/°C screened product, replace the packing suffix with **SC**. Example: **RC55PV-31K6BSC**

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