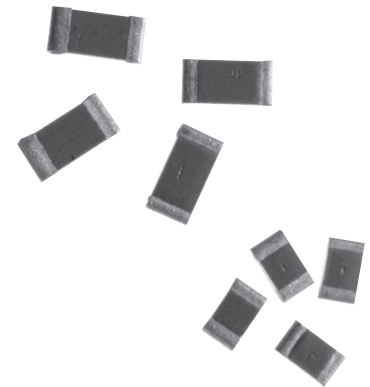


Precision Thick Film Surface Mounted Resistors

PCR Series

- Tolerance down to 0.1%
- Excellent load stability
- Termination available for wire bonding or soldering
- Resistance range 10 ohms to 1M ohms
- Any resistance value available within specified range



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

Electrical Data

		PCR0805	PCR1005	PCR1206	Notes
Power rating at 70°C	watts	0.1	0.125	0.25	
Resistance range	ohms	10R to 1M			
Limiting element voltage	volts	100	150	200	
TCR -55°C to +155°C	ppm/°C	100			
TCR +20°C to +70°C	ppm/°C	50			
Resistance tolerance	%	0.1, 0.25, 0.5, 1			
Values		E24 & E96 preferred			Any value to order
Thermal impedance	°C/watt	360	290	200	For 10 devices mounted on a 50 x 25 mm p.c.b. area
Ambient temperature range*	°C	-55 to 155			

*See Application Notes

Physical Data

Dimensions (mm) & weight (mg)							
	L	W	T max	A	B min*	C	Wt.
0805	2.0±0.15	1.25±0.15	0.6	0.3±0.15	0.9	0.3±0.1	4.7
1005	2.5±0.2	1.25±0.2	0.7	Not applicable		0.4±0.15	6.5
1206	3.2±0.2	1.6±0.2	0.7	0.4±0.2	1.7	0.4±0.15	8.5

Wrap-around terminations (3 faces)

Planar terminations

Alternative styles for surface mounting resistors

*This dimension determines the number of conductors which may pass under the surface mounted device.

Construction

Thick film resistor material, overglaze and organic protection are screen printed on a 96% alumina substrate.

Adjustment

The components are adjusted to final value using a specially developed technique, which assures optimum load stability performance.

Terminations

Planar (or single-sided) termination is gold and suitable for wire-bonding; wrap around is suitable for soldering.

Solderability

Wrap-around terminations have an electroplated nickel barrier and solder coating, this ensures excellent 'leach' resistance properties and solderability. They will withstand immersion in solder at 260°C for 30 seconds.

General Note

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Performance Data

		Maximum	Typical
Load at rated power: 1000 hours at 70°C	ΔR%	10 - 25k: 0.10 >25k - 1M: 0.4	10 - 25k: 0.05 >25k - 1M: 0.2
Load at rated power: 8000 hours at 70°C	ΔR%	10 - 25k: 0.20 >25k - 1M: 0.80	10 - 25k: 0.10 >25k - 1M: 0.4
Load at 50% rated power: 1000 hours at 70°C	ΔR%	10 - 1M: 0.10	10 - 1M: 0.03
Load at 50% rated power: 8000 hours at 70°C	ΔR%	10 - 1M: 0.20	10 - 1M: 0.06
Shelf life: 12 months at room temperature	ΔR%	0.05	0.01
Derating from rated power at 70°C		Zero at 155°C	
Overload	ΔR%		0.04
Dry heat: 1000 hours at 155°C	ΔR%	0.1	0.04
Long term damp heat	ΔR%	0.1	0.04
Temperature rapid change	ΔR%	0.03	0.01
Resistance to solder heat	ΔR%	0.10	0.02
Voltage proof	volts	500	

Value Ranges

Size/Tol. %	1	0.5	0.25	0.1
PCR0805	10 to 1M	10 to 1M	100 to 1M	100 to 1M
PCR1005	10 to 1M	10 to 1M	100 to 1M	100 to 1M
PCR1206	10 to 1M	10 to 1M	100 to 1M	100 to 1M

Application Notes

Operating Temperature Range

The chips can operate at a maximum temperature of 155°C (see Performance Data). For soldered chips, the joint temperature should not exceed 110°C. This condition is met when the stated power levels at 70°C are used.

Mounting

This chip resistor is ideally suited for handling by automatic methods due to its rectangular shape and the small dimensional tolerances. Electrical connection to a ceramic substrate or to a printed circuit board can be made by wire bonding (eg suffix 'G' in PCR0805G) or by reflow soldering of wrap-around terminations (eg suffix 'F' in PCR0805F). The 'F' terminations provide good leach properties and ensure reliable contact. Due to the robust construction the resistor chip can be immersed in the solder bath for 30 seconds at 260°C. This enables the resistor to be mounted on one side of a printed circuit and other wire-leaded components on the other side.

Packaging

Resistor chips are supplied taped and reeled on standard 8mm tape to IEC 286-3.
Quantity per reel 3000 max.

Planar Terminations

Resistor chips are supplied in waffle packs.

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Ordering Procedure

Example: PCR0805F-10KBI (0805 solderable chip, 10 kilohms $\pm 0.1\%$, Pb-free)

P	C	R	0	8	0	5	F	-	1	0	K		B	I
1			2			3	4			5		6		

1	2	3		4	5	6	
Type	Size	Termination		Value	Tolerance	Termination Finish & Packing	
PCR	0805	F	0805, 1206	Solderable wraparound	E24 or E96 3/4 characters	Pb-free solderable (RoHS)	
	B = $\pm 0.1\%$					I 0805F, 1206F up to 3000/reel	
	1005	G	All sizes	Gold pad planar	R = ohms	D = $\pm 0.5\%$	SnPb solderable
1206	K = kilohms				F = $\pm 1\%$	PB 0805F, 1206F up to 3000/reel	
	M = megohms					Gold pad planar	
						I 0805G, 1005G, 1206G Waffle	

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