SURFACE MOUNT RESISTOR



The thickness of these devices depend on the size of the

chip. The table below shows the standard substrate

0805

04

0.4

1005

0.63

N/A

1206

0.5

0.5

Organic Protection

Wrap around terminations for

soldering

Thick Film Conductor

CR SERIES



- 1.0 ohms to 100M ohms
- 0 ohms available also
- Tolerance down to 0.25%
- Solder terminations have a nickel barrier layer
- Shorting links available
- Any resistance value available within specified range

| SPECIFICATIONS: | | | | | | | | | | | |
|-----------------|------------------------------|-------------------------|---------|---------|--------------|---------------|-------------------------------|-------------------------|-------------------------|-------------------------------------|------------------------|
| | Power | Resistance Range (ohms) | | | | | Limiting | | | | Operating |
| IRC type | Rating At 70°C (watts) | 5% Tol. | 2% Tol. | 1% Tol. | 0.5% Tol. | 0.25% Tol. | Element Voltage (volts) | +125°C (ppm/°C) | Values | Thermal Impedance** (°C/watt) | Temp. Range (°C) |
| CR0503 | 0.063 | 1-10M | 1-10M | 10-10M | 100-1M | N/A | 50 | <10Ω 350; | E24 & | 800 | -55 to 125 |
| CR0805 | 0.1 | 1-100M | 1-50M | 1-20M | 1-10M | 100-1M | 100 | 10 to 100Ω | E96 | 360 | |
| CR1005 | 0.125 | 1-100M | 1-50M | 1-20M | 1-10M | 100-1M | 150 | 200; 100 to 1MΩ 100· | (any value to order) | 290 | |
| CR1206 | 0.25 | 1-100M | 1-50M | 1-25M | 1-10M | 100-1M | 200 | >1MΩ 250 | | 200 | |

Tin/lead Solder

Nic

Thickness:

STYLE

Planar

Wrap-around

thickness used. (mm)

0503

0.63

N/A

F = wrap around; G = planar gold.

*For 10 devices mounted on 50x25mm p.c.b. area. ** Zerohm is available.

Construction:

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

Terminations:

Wrap-around terminations on CR resistors have good 'leach' resistance properties. They will withstand immersion in solder at 260°C for 30 seconds.

Marking:

All relevant information is recorded on the primary package or reel.



DIMENSIONS (Inches and (mm)):

WIREWOUND AND FILM TECHNOLOGIES DIVISION 736 Greenway Road • Boone, North Carolina 28607-1860 • Tel: 828-264-8861 • Fax: 828-264-8866 • www.irctt.com

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CR SERIES PERFORMANCE DATA:

| | | | Actual | |
|---|--------------|-----------------|---------|---------|
| | | Requirements | Maximum | Typical |
| Load at rated power: 1000 hrs at 70°C | $\Delta R\%$ | 2 (5 above 3M3) | 1 | 0.25 |
| Shelf life: 12 months at room temperature | $\Delta R\%$ | | | 0.1 |
| Derating from rated power at 70°C | | zero at 125°C | | |
| Long term damp heat | $\Delta R\%$ | 2 | 1 | 0.25 |
| Temperature rapid change | $\Delta R\%$ | 1 | 0.25 | |
| Resistance to solder heat | ∆R% | 2.5 | 0.25 | |
| Voltage proof | volts | | 500 | |

APPLICATION NOTES:

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 reflow soldering of wrap-around terminations (eg suffix 'F' in CR0805F). The 'F' terminations provide good leach properties and ensure reliable contact. Due to the robust construction, the resistor chip can be immersed completely in the solder bath for 30 seconds at 260°C. This enables the resistor to be mounted on one side of a printed circuit board and other wire-leaded components on the other side.

HOW TO ORDER :

Specify type, reference, etc. as indicated in this example of a CR0805F 8.2M ohms 5% resistor with wrap around terminations and packed in a plastic bag.

Sample Part No.:

| | <u>CR</u> | <u>0805</u> | F | <u>8M2</u> | Ţ | P |
|---|-----------|-------------|-------|------------|---|---|
| Туре | | | | | | |
| Style | | | | | | |
| Termination (F= Wrap Around, P= Planar | .) | | | | | |
| Value ——— | | | | | | |
| Tolerance (C= 0.25%, D= 0.5%, F= 1.0 | 9%, G= | 2.0%, J= { | 5.0%) | | | |

*Packaging -

(T= Tape Pack (8mm tape), W= Waffle Pack, P= Plastic Bag)

*The preferred methods of packaging are: Gold terminated chips are packed in waffle boxes, chips with wraparound terminations are supplied tape & reel on .8mm tape.

Note:0503 and 1005 available in waffle package only.