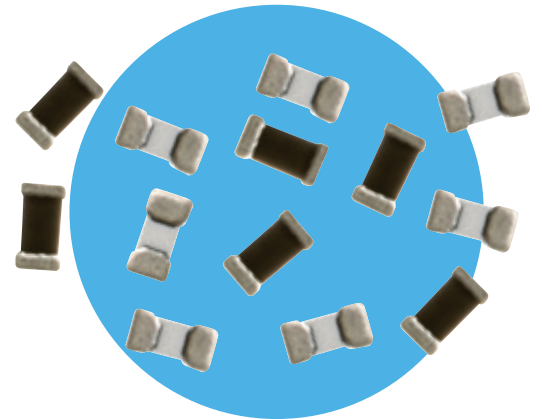


Metal Foil on Ceramic Chip Resistors



MFC Series

- Small size 0603
- Resistance range 5 to 20mΩ
- Current sensing for power electronics
- High power density

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

Electrical Data

| | | 0603 |
|-----------------------|--------|-----------------|
| Power rating @70°C | W | 0.5 |
| Resistance range | mΩ | 5 to 20 |
| Standard values | mΩ | 5, 7, 9, 10, 20 |
| Tolerance | % | ± 1, 5 |
| TCR (+25°C to +125°C) | ppm/°C | ± 50 |
| Operating temperature | °C | -55 to +155 |

Physical Data

| Dimensions in mm and nominal weight in mg | | | | | |
|---|---------|---------|---------|---------|---------|
| | L | W | A | T | Wt. nom |
| 0603 | 1.6±0.2 | 0.8±0.2 | 0.4±0.2 | 0.6±0.2 | 3.3 |

Wrap-around terminations (3 faces)

Construction

Metal foil resistor material, is bonded onto a 96% alumina substrate and protected. Wrap-around terminations have an electroplated nickel barrier and solder coating.

Marking

Components are not marked. Reels are marked with type, value, tolerance, date code and quantity.

Solvent Resistance

The body protection is resistant to all normal industrial cleaning solvents suitable for printed circuits.

Recommended Pad Dimensions

| All dimensions in mm | | | | |
|----------------------|---------------|-----|-----|------|
| Size | Resistance mΩ | A | L | B |
| 0603 | 5 & 20 | 1.0 | 2.8 | 0.6 |
| | Others | | | 0.85 |

For dissipation at rated power, copper trace thickness is 0.11mm

General Note

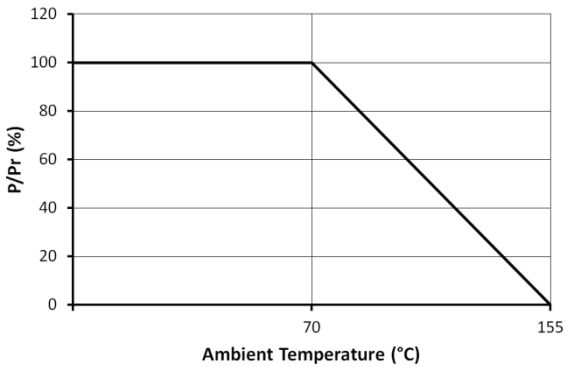
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MFC Series

Performance Data

| Parameter | | Maximum |
|--|------|---------------|
| Load at rated power: 1000 hours at 70°C, cyclic load | ±ΔR% | 1 |
| Overload: 5 x rated power for 5 seconds | ±ΔR% | 1 |
| Moisture: No load, 1000 hours 85°C, 85% RH | ±ΔR% | 1 |
| Temperature rapid change: 100 cycles, -55°C & 155°C | ±ΔR% | 1 |
| High temperature exposure: 1000 hours at 155°C | ±ΔR% | 1 |
| Low temperature exposure: 1000 hours at -55°C | ±ΔR% | 1 |
| Bend strength: 2mm deflection | ±ΔR% | 0.5 |
| Resistance to solder heat: 260±5°C for 10s | ±ΔR% | 0.5 |
| Solderability: 245±5°C for 2s | | ≥95% coverage |
| Insulation resistance: 100V DC for 1min | ohms | >100M |

Derating Curve



Packaging

0603 size resistors are supplied on 8mm paper carrier tape, all on 7 inch reels as per IEC 286-3. The 0603 size has 5000 chips per reel.

Ordering Procedure

Example: **MFC0603-R005FT5** (MFC0603, 5 milliohms ±1%, Pb-free)



| 1 | 2 | 3 | 4 | 5 |
|--------|------|----------------------------|--------------------|-------------------|
| Series | Size | Value | Tolerance | Packing |
| MFC | 0603 | 3/4 characters R = ohms | F = ±1% J = ±5% | T5 0603 5000/reel |

General Note

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