

# Metal Glaze™ High Power Density Surface Mount Power Resistor



## MRC Series

- 1/2 watt in 1/8 watt package
- MRC1/2: 0.05  $\Omega$  to 1.0  $\Omega$  (contact factory for higher values)
- 150°C maximum operating temperature
- Superior surge handling capability
- RoHS compliant Versions available

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

## Electrical Data

Size Code <sup>1</sup>	Industry Footprint	IRC Type	Max. Power Rating	Working Voltage <sup>2</sup>	Max. Voltage	Resistance Range (ohms) <sup>3</sup>	Tolerance ( $\pm\%$ ) <sup>3</sup>	TCR (ppm/ $^{\circ}$ C) <sup>3</sup>	Product Category
C	1206	MRC1/2	1/2W @ 70°C	200	400	0.1 to 0.99	1,2,5	100	Low Range
						1.0 to 10K	1,2,5	50,100	Standard
						20 to 10K	0.25, 0.5	50,100	Tight Tolerance

## MRC Applications:

The MRC1/2 will dissipate 1/2 watt at 70°C on a 1206 footprint. The MRC is recommended for applications where board real estate is a major concern. Due to high power density and superior surge handling capability, it is also recommended as a direct replacement on existing board designs where standard 1206 resistors are marginal or failing.

## Environmental Data

Characteristics	Maximum Change	Test Method
Temperature Coefficient	As specified	MIL-R-55342E Par 4.7.9 (-55°C + 125°C)
Thermal Shock	$\pm(0.5\% + 0.01\Omega)$	MIL-R-55342E Par 4.7.3 (-65°C + 150°C, 5 cycles)
Low Temperature Operation	$\pm(0.25\% + 0.01\Omega)$	MIL-R-55342E Par 4.7.4 (-65°C @ working voltage)
Short Time Overload	$\pm(1.0\% + 0.01\Omega)$	MIL-R-55342E Par 4.7.5 2.5 x $\sqrt{PxR}$ for 5 seconds
High Temperature Exposure	$\pm(0.5\% + 0.01\Omega)$	MIL-R-55342E Par 4.7.6 (+150°C for 100 hours)
Resistance to Bonding Exposure	$\pm(0.25\% + 0.01\Omega)$	MIL-R-55342E Par 4.7.7 (Reflow soldered to board at 260°C for 10 seconds)
Solderability	95% minimum coverage	MIL-STD-202, Method 208 (245°C for 5 seconds)
Moisture Resistance	$\pm(0.5\% + 0.01\Omega)$	MIL-R-55342E Par 4.7.8 (10 cycles, total 240 hours)
Life Test	$\pm(1.0\% + 0.01\Omega)$	MIL-R-55342E Par 4.7.10 (2000 hours @ 70°C intermittent)
Terminal Adhesion Strength	$\pm(1\% + 0.01\Omega)$ no mechanical damage	1200 gram push from underside of mounted chip for 60 seconds
Resistance to Board Bending	$\pm(1\% + 0.01\Omega)$ no mechanical damage	Chip mounted in center of 90mm long board, deflected 5mm so as to exert pull on chip contacts for 10 seconds

## 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.

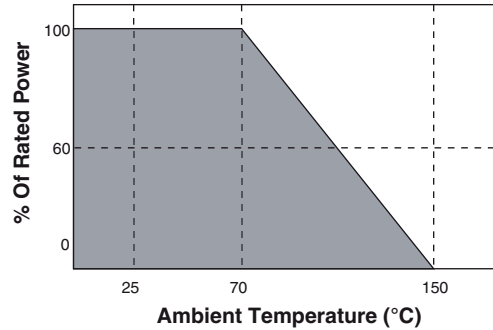
MRC Series

## Repetitive Surge Curve



Note: Use for repetitive pulses where the average power dissipation is not to exceed the component rating at 70°C. Surge handling capacity for low-repetitive surges may be significantly greater than shown above. Contact factory for recommendations.

## Power Derating Curve



## Ordering Data

Sample Part No. .... **MRC1/2** **100** **1000** **F** **13** **LF**

**IRC Type** .....  
(MRC 1/2)

**Temperature Coefficient** .....  
50 ppm, 100 ppm, 200 ppm

**Resistance Value** .....  
(100Ω and greater - First 3 significant figures plus 4th digit multiplier)  
Example: 100Ω = 1000, 1000Ω = 1001, 150,000Ω = 1503  
(Less than 100Ω - "R" is used to designate decimal)  
Example: 51Ω = 51R0, 1Ω = 1R00, 0.25Ω = R250

**Tolerance** .....  
(C = 0.25%, D = 0.5%, F = 1.0%, G = 2.0%, J = 5.0%)

**Packaging Code\*** .....  
(BLK = Bulk, 7 = 7" Reel, 13 = 13" Reel)

**RoHS Compliance** .....  
LF = RoHS compliant version

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