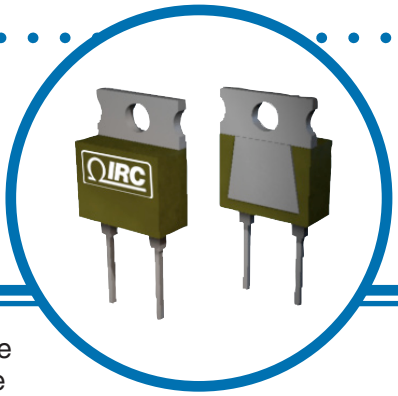
MHP TO-220 Series Power Resistor

TT electronics
IRC Advanced Film Division

MHP Series

- TO-220 housing
- Low inductance (<50nH)
- Available in 20W, 35W, or 50W
- High stability film resistance elements
- RoHS compliant



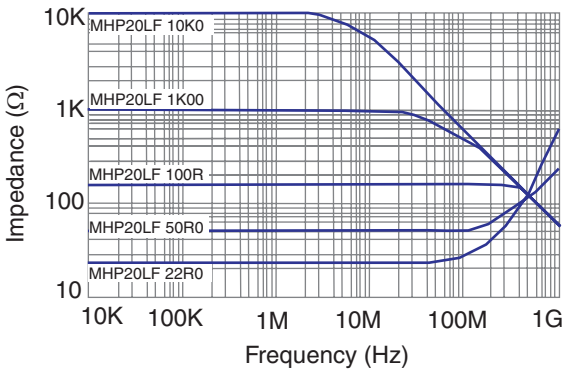
IRC's MHP series resistors satisfy demanding applications for accurate and stable power resistors housed in the convenient TO-220 case. The resistance element is isolated from the mounting tab by an alumina ceramic layer, providing very low thermal resistance and ensuring high insulation resistance between terminals and tab. The non-inductive design makes these products especially useful in high frequency and high speed pulse applications.

Electrical Data

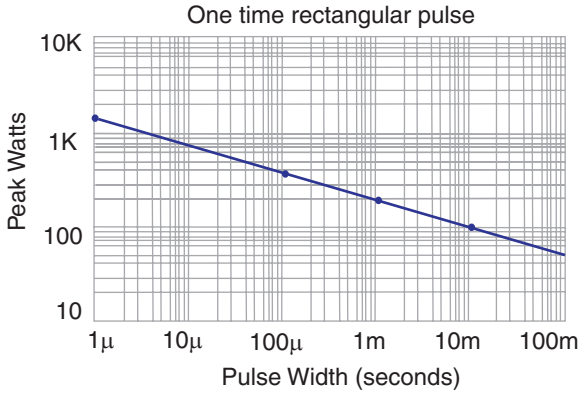
Type	Power Rating [4]		Voltage Rating [5]	Thermal Resistance	Resistance Range[3]		Tolerances	Nominal Resistance	Temperature Coefficient
	Heatsink[1]	Free Air[2]			Min	Max			
MHP-20	20W	1W	500V	5.9°C/W	10Ω	220Ω	±1%	E24	±100 ppm/°C
					0.1Ω	9.1Ω	±1%, ±5%	E12	±100 ppm/°C
					0.01Ω	0.09Ω	±5%	E6	±250 ppm/°C
	10W	1W	500V	5.9°C/W	220Ω	51KΩ	±1%, ±5%	E12	±100 ppm/°C
MHP-35	35W	1W	500V	3.3°C/W	10Ω	220Ω	±1%	E24	±100 ppm/°C
					0.1Ω	9.1Ω	±1%, ±5%	E12	±100 ppm/°C
					0.01Ω	0.09Ω	±5%	E6	±250 ppm/°C
	20W	1W	500V	3.3°C/W	220Ω	51KΩ	±1%, ±5%	E12	±100 ppm/°C
MHP-50	50W	1W	500V	2.3°C/W	10Ω	220Ω	±1%	E24	±100 ppm/°C
					0.1Ω	9.1Ω	±1%, ±5%	E12	±100 ppm/°C
					0.01Ω	0.09Ω	±5%	E6	±250 ppm/°C
	30W	1W	500V	2.3°C/W	220Ω	51KΩ	±1%, ±5%	E12	±100 ppm/°C

[1]Power rating based on 25°C flange temperature; [2]Power rating based on 25°C ambient temperature; [3]Consult factory for higher or lower values; [4]Max current 25 amps; [5]Max voltage 500V or $\sqrt{P \times R}$

Frequency Data



Pulse Data



General Note
IRC reserves the right to make changes in product specification without notice or liability.
All information is subject to IRC's own data and is considered accurate at time of going to print.

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TT electronics plc

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Power Resistor

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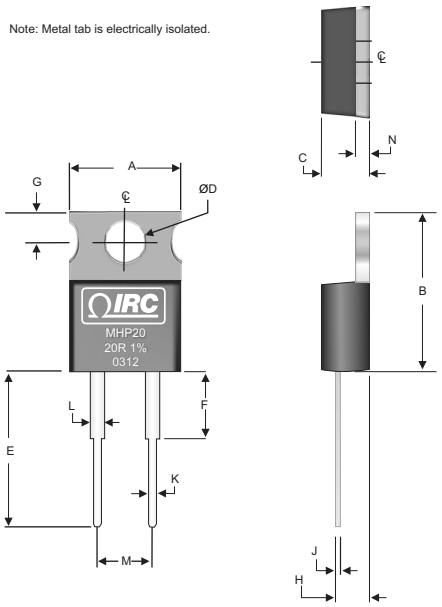
Physical Data



Dimension	Inches (nom)	Millimeters
A	0.417	10.1 ±.2
B	0.590	15.0 ±0.2
C	0.177	4.5 ±0.2
ØD	0.122	3.1 ±0.1
E	0.610	15.5 ±1
F	0.157 REF	4.0 ±0.5
G	0.118	3 ±0.2
H	0.108	2.75 ±0.2
J	0.020	0.5 ±0.05
K	0.029	0.75 ±0.05
L	0.055	1.4 ±0.05
M	0.200	5.08 ±0.1
N	0.059	1.5

Lead Material	Tinned Copper
Substrate Material	96% Alumina Ceramic
Resistor construction	Proprietary film conductors and proprietary alloy resistors

Environmental Data

Test	MAX ΔR
Thermal Shock MIL-STD-202 Method 107 Condition F	±0.30% +50mΩ
Moisture Resistance MIL-STD-202 Method 106	±1.0% +50mΩ
Vibration MIL-STD-202 Method 204 Condition D	±0.25% +50mΩ
Load Life MIL-STD-202 Method 108 1,000 Hours	±1.00% +50mΩ
Resistance To Solder Heat MIL-STD-202 Method 210 Condition B	±0.25% +50mΩ
Dielectric Withstanding Voltage MIL-STD-202 Method 301	2200 volts DC or 1500 volts AC; 60 seconds
Insulation Resistance (between terminal and tab) MIL-STD-202 Method 301	>1000MΩ
Solderability MIL-STD-202 Method 208	> 95% coverage
Operating Temperature Range	-55°C to +155°C

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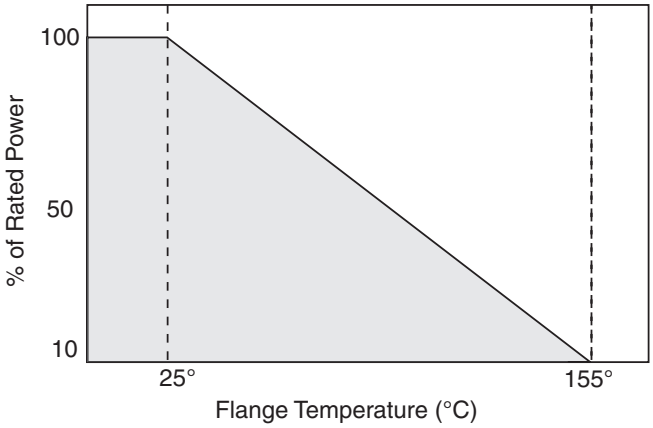
Power Derating Data



Ordering Data

Prefix TFP - MHP20LF - 1R50 - J

Style
MHP20LF = 20W, TO-220 style power resistor
MHP35LF = 35W, TO-220 style power resistor

Resistance Code
3-digit resistance code.
Ex: 10R0 = 10Ω, 1K00 = 1KΩ

Absolute Tolerance Code
J = ±5%; F = ±1%

For additional information or to discuss your specific requirements, please contact our Applications Team using the contact details below.