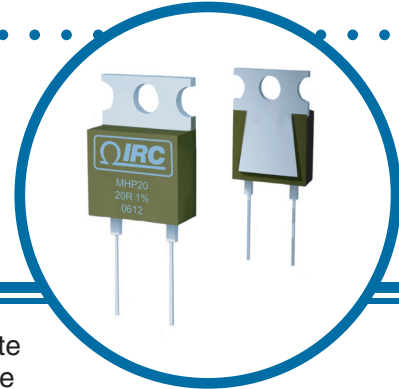


# MHP Series TO-220 Power Resistor

## MHP Series

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



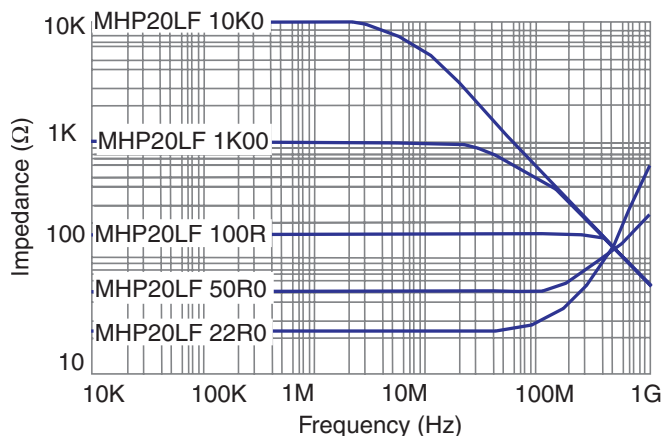
IRC's MHP series resistors satisfy demanding applications for accurate and stable power resistors housed in the convenient TO-220 case. The resistance element is isolated from the mounting tab by an alumina ceramic layer, providing very low thermal resistance and ensuring high insulation resistance between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

## Electrical Data

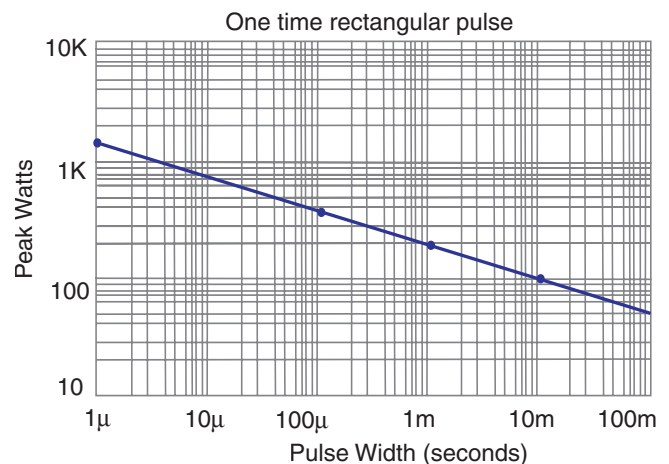
Type	Power Rating <sup>4,5</sup>		Thermal Resistance	Resistance Range <sup>3</sup>		Tolerances	Temperature Coefficient
	Heatsink <sup>1</sup>	Free Air <sup>2</sup>		Min	Max		
MHP-35	35W	1W	3.3°C/W	0.1Ω 0.01Ω	220Ω 220Ω	±1% ±5%	±100 ppm/°C ±250 ppm/°C
	20W	1W	3.3°C/W	220Ω	51KΩ	±1%, ±5%	±100 ppm/°C
MHP-20	20W	1W	5.9°C/W	0.1Ω 0.01Ω	220Ω 220Ω	±1% ±5%	±100 ppm/°C ±250 ppm/°C
	10W	1W	5.9°C/W	220Ω	51KΩ	±1%, ±5%	±100 ppm/°C

<sup>1</sup>Power rating based on 25°C flange temperature; <sup>2</sup>Power rating based on 25°C ambient temperature; <sup>3</sup>Consult factory for higher or lower values; <sup>4</sup>Max current 25 amps; <sup>5</sup>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.

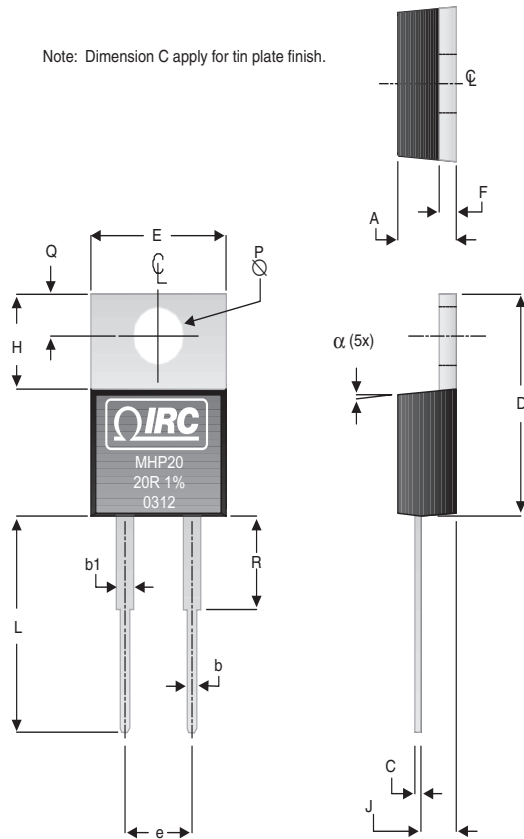
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Telephone: 361 992 7900 • Facsimile: 361 992 3377 • Email: afdsales@ircct.com • Website: www.ircct.com

# MHP Series TO-220 Power Resistor

## Physical Data

POS	Inches		Millimeters				
	Min	Max	Min	Max			
<b>A</b>	0.160	0.190	4.06	4.83			
<b>b</b>	0.025	0.040	0.63	1.02			
<b>c</b>	0.015	0.022	0.38	0.56			
<b>D</b>	0.560	0.590	14.22	14.99			
<b>E</b>	0.385	0.415	9.78	10.54			
<b>e</b>	0.190	0.210	4.83	5.33			
<b>F</b>	0.045	0.055	1.14	1.40			
<b>H</b>	0.234	0.258	5.94	6.55			
<b>J</b>	0.090	0.115	2.28	2.92			
$\varnothing$ <b>P</b>	0.146	0.156	3.71	3.96			
<b>Q</b>	0.103	0.113	2.62	2.87			
<b>L</b>	0.540	0.560	13.72	14.22			
<b>Lead Material</b>	Tinned Copper		$\alpha$	3°	7°	3°	7°
<b>Substrate Material</b>	96% Alumina Ceramic		<b>b1</b>	0.045	0.060	1.14	1.52
<b>Resistor construction</b>	Proprietary film conductors and proprietary alloy resistors		<b>R</b>	0.243 REF		6.17 REF	

Note: Dimension C apply for tin plate finish.

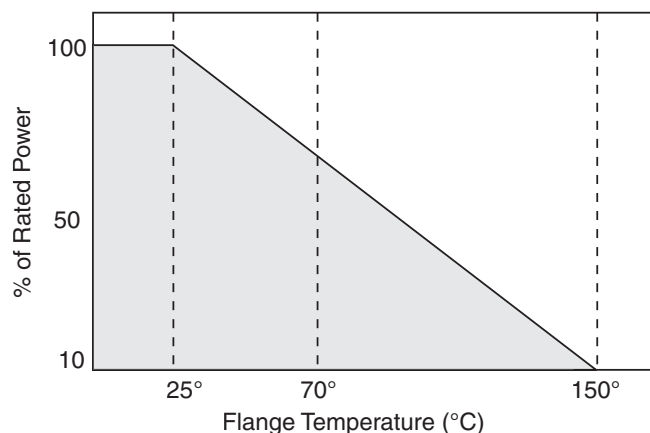


# MHP Series TO-220 Power Resistor

## Environmental Data

Test	MAX $\Delta R$
<b>Thermal Shock</b> MIL-STD-202 Method 107 Cond. F	$\pm 0.30\%$ +0.5m $\Omega$
<b>Thermal Strength</b> MIL-STD-202 Method 211 Cond. A (5165)	$\pm 0.20\%$ +0.5m $\Omega$
<b>Short-Time Overload</b> 5 sec 2x Rated Power	$\pm 0.30\%$ +0.5m $\Omega$
<b>Moisture Resistance</b> MIL-STD-202 Method 106	$\pm 1.0\%$ +0.5m $\Omega$
<b>Mechanical Shock Method</b> MIL-STD-202 Method 213 Cond. I	$\pm 0.25\%$ +0.5m $\Omega$
<b>Vibration</b> MIL-STD-202 Method 204 Cond. D	$\pm 0.25\%$ +0.5m $\Omega$
<b>Load Life</b> MIL-STD-202 Method 108 1,000 Hours	$\pm 1.00\%$ +0.5m $\Omega$
<b>Resistance To Solder Heat</b> MIL-STD-202 Method 210F Cond. B	$\pm 0.25\%$ +0.5m $\Omega$

## 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** .....  
4-digit resistance code.  
Ex: 10R0 = 10 $\Omega$ , 1K00 = 1K $\Omega$

**Absolute Tolerance Code** .....  
J =  $\pm 5\%$ ; F =  $\pm 1\%$

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