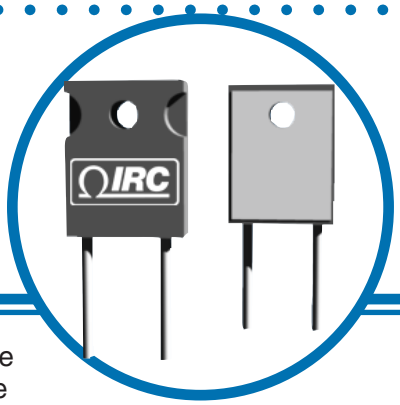
MHP TO-247 Series Power Resistor

MHP TO-247 Series

- TO-247 housing
- Low inductance (<50nH)
- Available in 100W or 140W
- High stability film resistance elements
- RoHS compliant terminations
- Insulated metal back plate
- Approved to DSCC drawing 07019



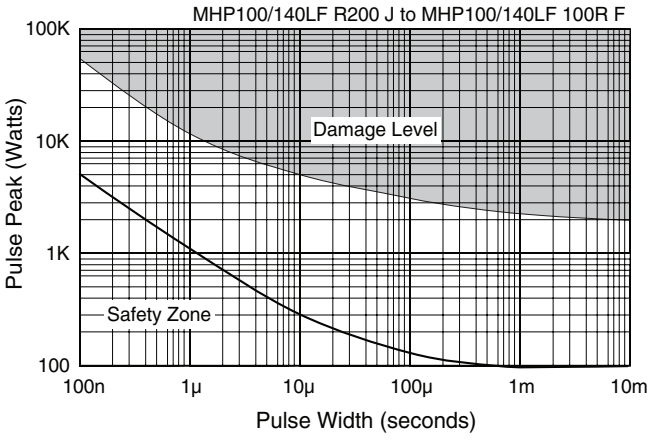
IRC's MHP series resistors satisfy demanding applications for accurate and stable power resistors housed in the convenient TO-247 case. The resistance element is isolated from the mounting tab by an alumina ceramic layer, providing very low thermal resistance and ensuring high insulation resistance between terminals and metal back plate. The non-inductive design makes these products especially useful in high frequency and high speed pulse applications.

Electrical Data

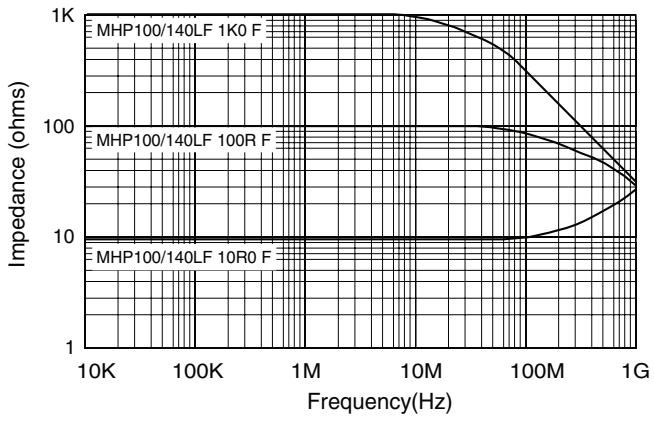
Type	Power Rating[1]		Voltage Rating[4]	Thermal Resistance	Resistance Range		Tolerances	Nominal Resistance	Typ. Temperature Coefficient[5]
	Heatsink[2]	Free Air[3]			Min	Max			
MHP100LF	100W	3W	700V	1.3°C/W	0.01Ω	0.09Ω	±5%	E6	±250 ppm/°C
					0.1Ω	9.1Ω	±1%, ±5%	E12	±100 ppm/°C
					10Ω	51KΩ	±1%, ±5%	E24	±50 ppm/°C
MHP140LF	140W	3W	700 V	0.9°C/W	0.01Ω	0.09Ω	±5%	E6	±250 ppm/°C
					0.1Ω	9.1Ω	±1%, ±5%	E12	±100 ppm/°C
					10Ω	51KΩ	±1%, ±5%	E24	±50 ppm/°C

[1]Maximum current 25 amps
[2]Power rating based on 25°C case temperature
[3]Power rating based on 25°C ambient temperature
[4]Maximum voltage 700V or $\sqrt{P \times R}$
[5]See TCR Chart for resistance values below 1ohm

Pulse Energy Durability



Frequency Characteristics



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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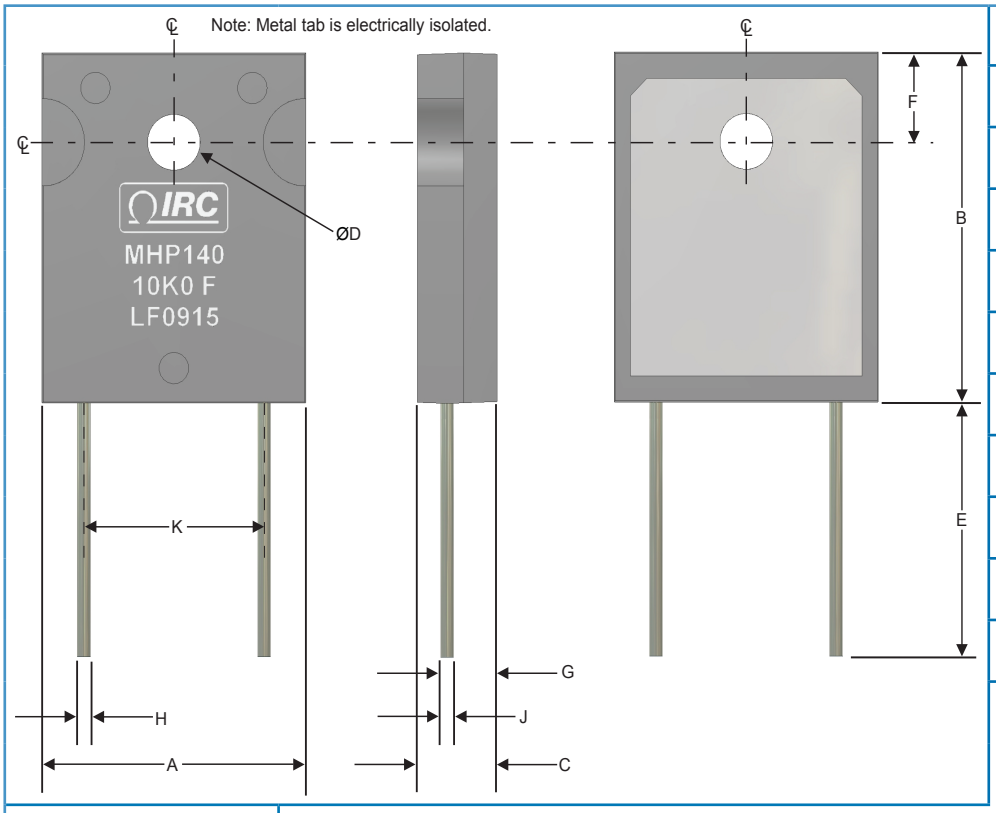
Power Resistor

Physical Data



Dim	In (nom)	mm
A	0.630	16.0 ±0.2
B	0.787	20.0 ±0.5
C	0.189	4.8 ±0.2
ØD	0.126	3.2 ±0.1
E	0.571	14.5 ±0.5
F	0.201	5.1 ±0.5
G	0.143	3.63 ±0.2
H	0.032	0.8 ±0.05
J	0.032	0.8 ±0.05
K	0.429	10.9 ±0.1

Lead Material	Tin Plated Copper
Tab Material	Nickel Plated Copper

Environmental Data

Test	Method	Specification - Performance
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	±1.0% + 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 2500 volts AC; 60 seconds
Insulation Resistance (between terminal and tab)	MIL-STD-202 Method 302	>1000MΩ>
Solderability	230 ± 5°C, 3sec.	>75% coverage
Operating Temperature Range		-55°C to +155°C

* During soldering, the soldering temperature profile must not cause the metal tab of this device to exceed 220°C.

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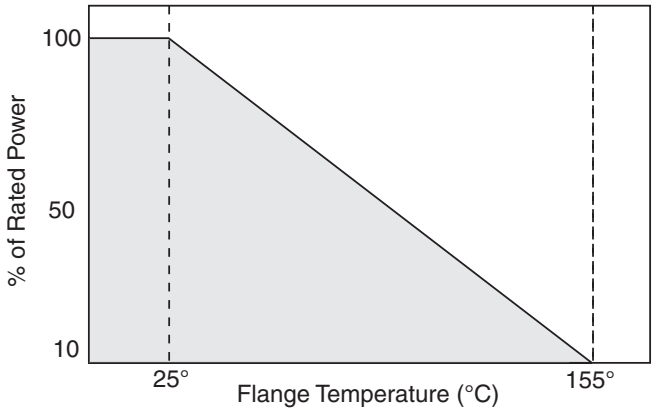
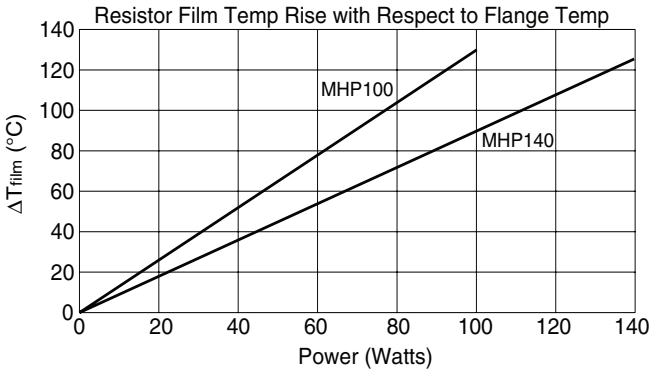
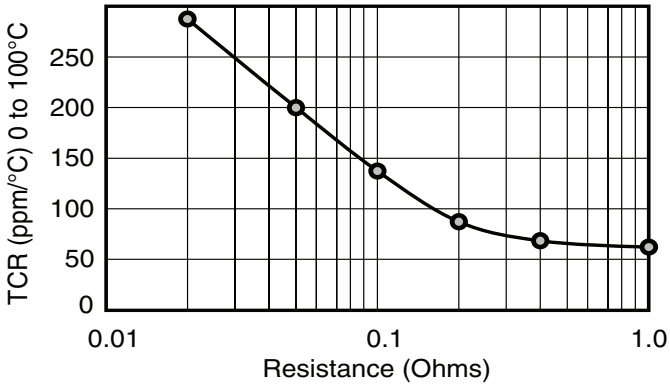
Power Derating Data



Temperature Rise Data



Typical TCR For Low Values



Application Notes:

1. Insulating material is unnecessary between the heat sink and the tab, as the resistor film is isolated by the internal alumina substrate.

2. When mounting with a fastener, thermal grease is recommended.

3. Thermal design should satisfy the following equation: Case Temperature (Tc) + [Thermal Resistance (RΘJC) x Power applied (Watts)] ≤ 155°C over the full operating temperature of the application.

4. Resistor film temperature is not to exceed 155°C during operation.

5. This product is RoHS compliant by exemption according to RoHS directive 2002/95/EC exemptions 5 & 7, as they apply to lead in glass and internal solder connections.

Ordering Data

Prefix ..... TFP - MHP100LF - 1R50 - J

Style
MHP100LF = 100W, TO-247 style power resistor
07019 = DSCC drawing (07019) ver. of above
MHP140LF = 140W, TO-247 style power resistor

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

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

Standard Packaging
RoHS compliant PE tray (50 pcs per tray)

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

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