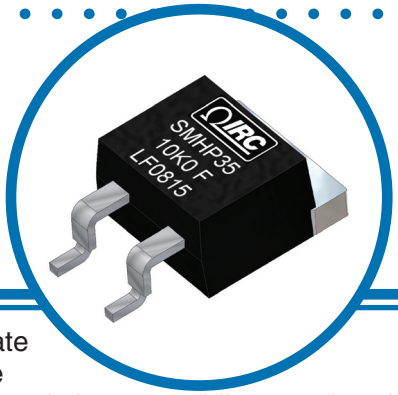
SMHP35 Series
Power Resistor

SMHP35 Series

- 270°C reflow compatible
- TO-263 housing
- Low inductance and capacitance for high frequency circuits
- 35W power rating
- High stability film resistance elements
- RoHS compliant



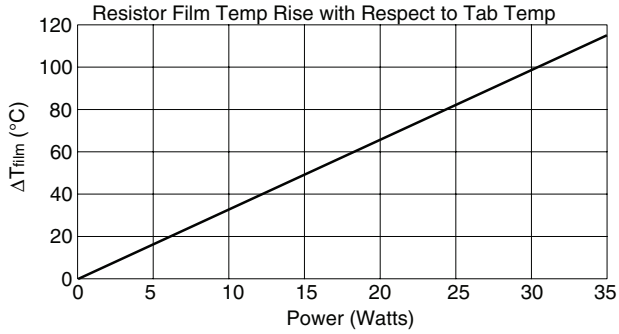
IRC's SMHP series resistors satisfy demanding applications for accurate and stable power resistors housed in the convenient TO-263 case. The resistance element is isolated from the mounting tab by an alumina ceramic layer, providing very low thermal resistance and ensuring high insulation resistance 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

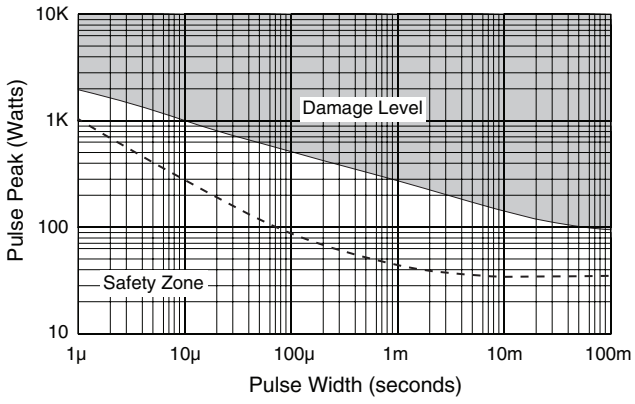
Power Rating[1]		Voltage Rating[4]	Thermal Resistance	Resistance Range		Tolerances	Nominal Resistance Series[5]	Typ. TCR (ppm/°C)[6]	Inductance	Capacitance
Heatsink[2]	Free Air[3]			Min	Max					
35W	2.5W	500 V	3.3°C/W	0.01Ω	0.09Ω	±5%	E6	±250	<10nH	<2pF
				0.1Ω	9.1Ω	±1%, ±5%	E12	±100		
				10Ω	51KΩ	±1%, ±5%	E24	±50		

[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 500V or √P x R
[5]Contact factory for availability of resistance or tolerance values outside this range
[6]See TCR Chart for resistance values below 0.2ohms

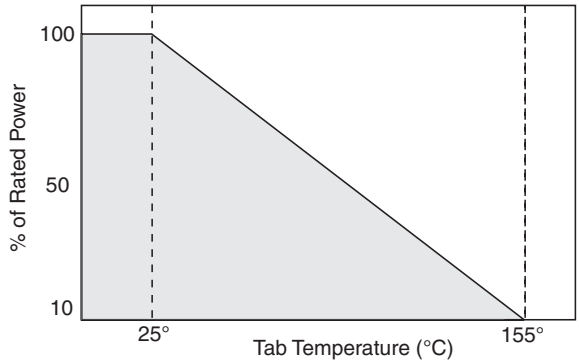
Temperature Rise Data



Pulse Energy Durability



Power Derating 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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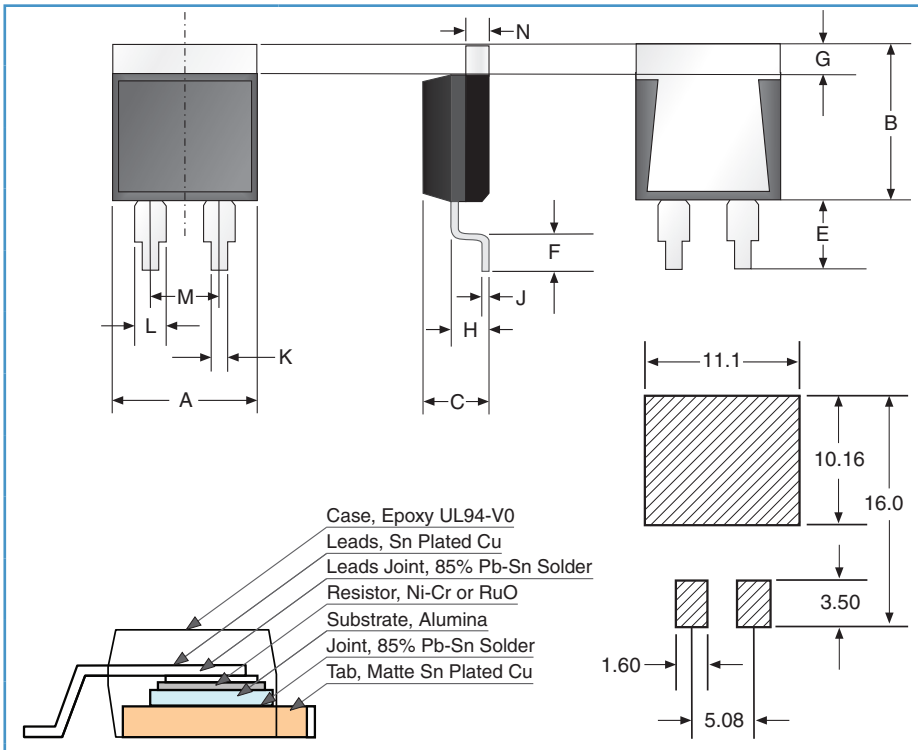
Physical Data



Insulated Between Tab and Resistor

Recommended minimum footprint dimensions.
All dimensions are in millimeters (mm).

Dim	In (nom)	mm
A	0.398	10.1 ±0.2
B	0.406	10.3 ±0.2
C	0.177	4.5 ±0.2
E	0.197	5.0 ±1.0
F	0.098	2.5 ±0.5
G	0.087	2.2 ±0.2
H	0.108	2.75 ±0.2
J	0.020	0.5 ±0.05
K	0.030	0.75 ±0.05
L	0.059	1.5 ±0.05
M	0.200	5.08 ±0.1
N	0.059	1.5 ±0.05

Lead & Tab Material	Tin Plated Copper
Part Weight	1.5g

Environmental Data

Test	Method	Specification - Performance
Load Life	1,000 Hours @ 25°C; 90 minutes on, 30 minutes off	±(1.0% + 1mΩ)
Humidity	1000 hours; 40°C, 90-95% RH, 0.1W DC	±(1.0% + 1mΩ)
Temperature Cycle	5 cycles; 30 minutes @ -55°C, 30 minutes at +155°C	±(0.25% + 1mΩ)
Short Time Overload	2X Rated Power, not to exceed 1.5X Rated Voltage for 5 seconds, 25° w/ Heat Sink	±(0.25% + 1mΩ)
Vibration	10 cycles; X, Y, Z axis, amplitude 0.75mm, 100-2000Hz sweep/min	±(0.25% + 1mΩ)
Insulation Resistance	Between terminals and tab	>1000MΩ
Dielectric Withstanding Voltage	Terminals to tab; 60sec, 1mA	2000 volts AC
Resistance to Solder Heat	350 ± 5°C for 3 seconds	±(0.10% + 1mΩ)
Solderability	230 ± 5°C, 3sec.	>95% coverage
Operating Temperature Range		-55°C to +155°C

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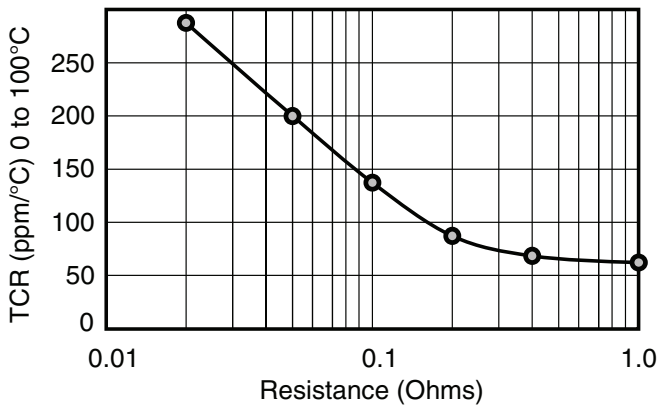
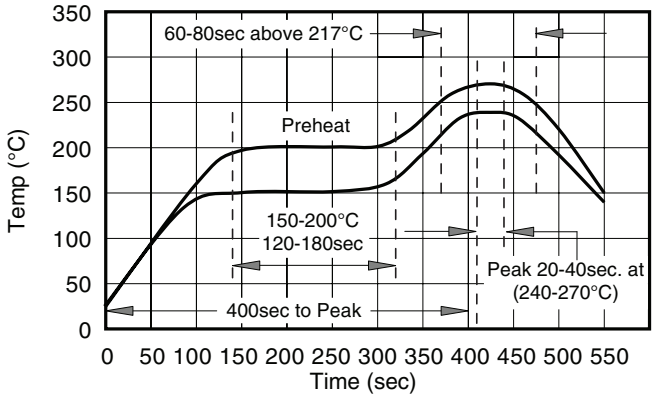
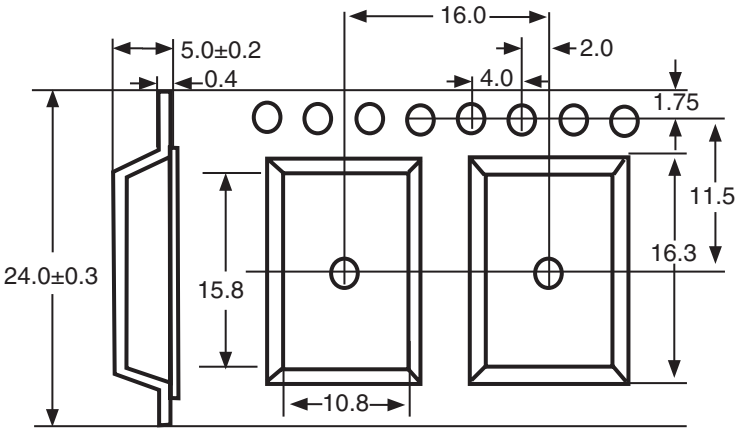
Typical TCR For Low Values



Solder Reflow Profile



Reel Packaging Data



Tolerances are ±0.1mm unless otherwise shown

Reel Dimensions	
Outer Diameter	330 mm
Inner Diameter	100 mm
Width	27.4 mm max
Quantity	500pcs/reel

Ordering Data

Prefix ····· TFP - SMHP35LF - 1R50 - J

Style ····· SMHP35LF = 35W, TO-263 style power resistor

Resistance Code ····· 4-digit resistance code.
Ex: 0R05 = 0.05Ω, 10R0 = 10Ω, 1K00 = 1KΩ

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

Standard Packaging
RoHS compliant reel (500 pcs per reel)
RoHS compliant tube (50 pcs per tube)

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

Application Notes:

1. Resistance measurement shall be made at the terminal foot.

2. Thermal design should satisfy the following equation: Tab Temperature (T_T) + [Thermal Resistance ($R_{\theta JT}$) x Power applied (Watts)] ≤ 155°C over the full operating temperature of the application.

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

4. 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.

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