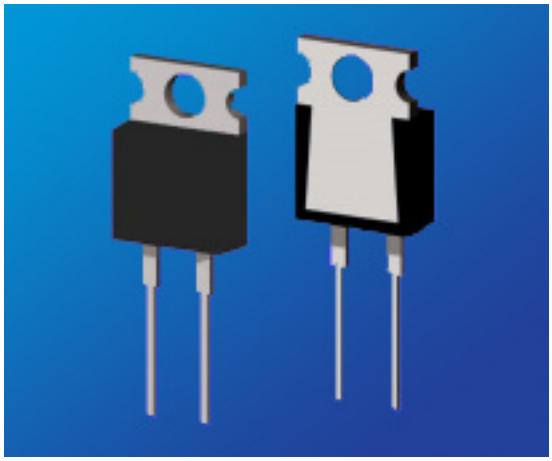
Resistor High Power Low Inductance
RHX Series



Key Features

- Resistances from 51k Ohms
- High Stability Film Resistance Elements
- Rated Power of 35, 50 and 100 Watts
- TO-220 and TO-247 Housing
- Resistance tolerance of ± 0.1% or ± 1%
- Low Inductance of < 10nH for RHXH1 and RHXH2, <50nH for RHXH3

Applications

- Power Inverters
- Power Supplies
- Engine Sensors
- Temperature Sensors

Product Summary

PRODUCT SERIES (RHX)	RESISTANCE RANGE (Ω) [3]		POWER RATING (W)		THERMAL RESISTANCE	TOLERANCES
	MIN	MAX	HEATSINK [1]	FREE AIR [2]		
RHXH1	0.02	51K	35	1	3.3°C/W	± 1% (R ≥ 0.1Ω) ± 5%
RHXH2	0.02	51K	50	1	2.3°C/W	± 1% (R ≥ 0.1Ω) ± 5%
RHXH3	0.02	51K	100	3	1.3°C/W	± 1% (R ≥ 0.10Ω) ± 5%

[1] Power Rating based on 25°C Flange Temperature
[2] Power Rating based on 25°C Ambient Temperature
[3] Contact Factory for Higher or Lower Values

Available Options (Consult Factory)

- Special Testing Requirements

TEMPERATURE COEFFICIENTS:

- ± 50ppm/°C (R ≥ 10Ω)
- ± 100ppm/°C (0.1Ω ≤ R < 10Ω)
- ± 250ppm/°C (R < 0.1Ω)

How to Order

RHX	H2	Q	038K0	F	4
RESISTOR HIGH POWER LOW INDUCTANCE	PACKAGE CODE	TEMPERATURE COEFFICIENT OF RESISTANCE (TCR)	RESISTANCE	TOLERANCE	PACKING
	H1, 35W, TO-220 H2, 50W, TO-220 H3, 100W, TO-247	Q = ± 50ppm/°C N = ± 100ppm/°C K = ±250ppm/°C	0R038 = 0.038Ω 003K8 = 3.8KΩ 038K0 = 38.0KΩ 380K0 = 380.0KΩ 003M8 = 3.8MΩ Letter denotes decimal place. R = decimal., "K" 10^3, "M" 10^6 Remaining 4 digits are significant or placeholders.	F = ± 1.0% (R ≥ 0.1Ω) J = ± 5.0%	4 = Tube

Tin/Lead coated leads, add "- Pb" on part number.
Standard Termination Finish: Matte Tin (Sn)
Example P/N: RHXH2Q038K0F4 is Resistor High Power Low Inductance, 50W TO-220, ±50ppm/°C, 38.0KΩ, ±1.0%, tube

Resistor High Power Low Inductance
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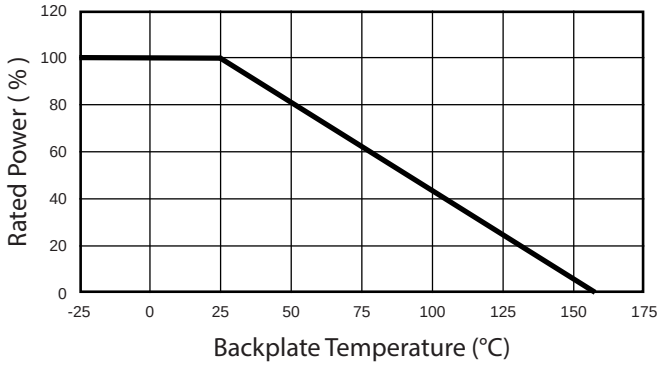
Environmental Characteristics

Electrical Characteristics	RHXH1 & RHXH2 Values	RHXH3 Value
Maxiumum Current	25A	-
Inductance	<10nH (At the Standoff)	-
Insulation Resistance	>1000 Megohm	>1000 Megohm
Dielectric Strength	2000 VAC	2500 VAC
Temperature Range	-55°C to +155°C	-55°C to +155°C
Maximum Working Voltage	$\sqrt{Power \times Resistance}$ (500V MAX)	700 V or $\sqrt{Power \times Resistance}$, whichever is less

Power Derating Curve



RHXH1 & RHXH2 POWER RATING NOTES:

- H1 and H2 High Power Low Inductance Resistors must be attached to a suitable heatsink. Without a heatsink, the maximum power rating is 1W.
- The maximum internal resistor temperature is 155°C.
- Use the following formula to specify an appropriate heatsink:

RHXH3 POWER RATING NOTES:

- H3 High Power Low Inductance Resistors must be attached to a suitable heatsink.
- The maximum internal resistor temperature is 155°C.
- Use the following formula to specify appropriate heatsink:

$$R_{\Theta H} = \frac{T_{MAX} - (P * R_{\Theta R}) - T_A}{P}$$

Where: $R_{\theta H}$ = Thermal Resistance of Heatsink (°C/W)
$R_{\theta R}$ = Thermal Resistance of Resistor (°C/W)
T_{MAX} = Maximum Temperature of Resistor (°C)
T_A = Ambient Temperature of Heatsink (°C)
P = Power Through Resistor (W)

Resistor High Power Low Inductance
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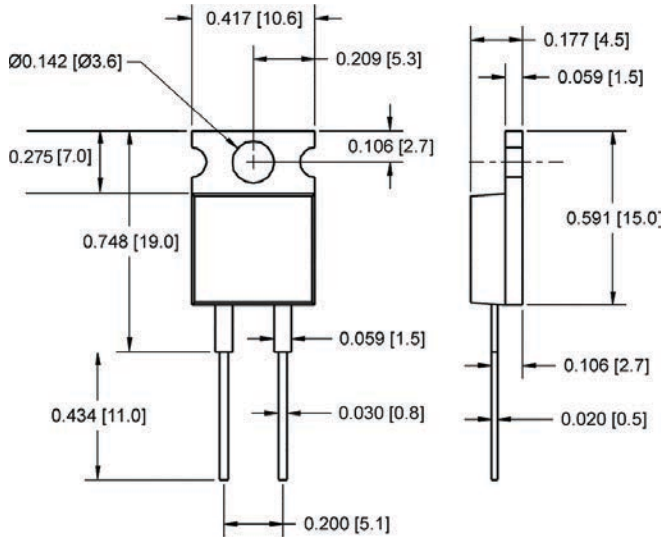
Mechanical Characteristics

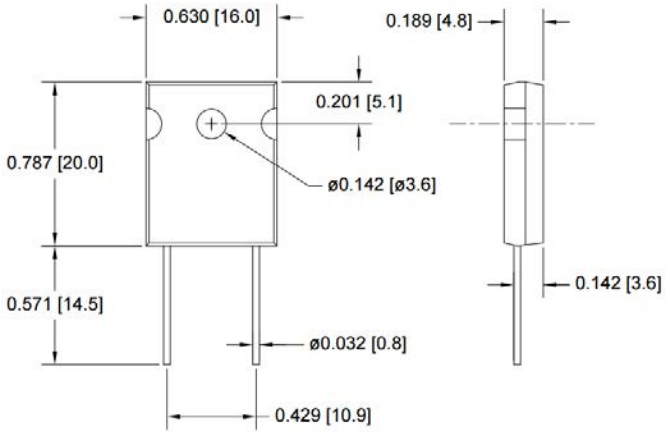
RHXH1 & RHXH2



MOUNTING NOTES:

- H1 and H2 High Power Low Inductance Resistors must be attached to a suitable heatsink.
- Use thermal grease to mount resistor to a clean, flat surface.
- Use a compression washer to provide 150 to 300 pounds (665 to 1330N) of mounting force.
- Torque mounting screw to 8 in-lbs (0.9 N-m).
- Mounting tab is isolated from both pins.

RHXH3



MOUNTING NOTES:

- H3 High Power Low Inductance Resistors must be attached to a suitable heatsink.
- Use thermal grease to mount resistor to a clean, flat surface.
- Use a compression washer to provide 150 to 300 pounds (665 to 1330N) of mounting force.
- Torque mounting screw to 8 in-lbs (0.9 N-m).
- Back plate is isolated from both pins.

Environmental Characteristics

Environmental Performance	ΔR			Test Conditions
	RHXH1	RHXH2	RHXH3	
Humidity Resistance	±1% + 0.05Ω			40°C, 90-95% RH, DC 0.1W, 1000 hr
Load Life	±1% + 0.05Ω			25°C, 90 min ON, 30 min OFF, 1000 hr
Temperature Cycle	±0.25% + 0.05Ω			-55°C for 30 min, +155°C for 30 min, 1000 hr
Vibration	±0.25% + 0.05Ω			IEC60068-2-6
Solder Heat	±0.1% + 0.05Ω			+350°C, 3s

Moisture Sensitivity Level: MSL-1

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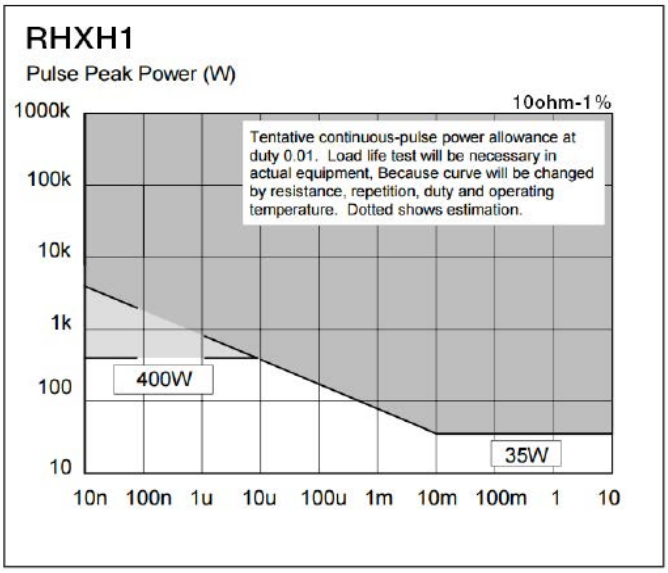
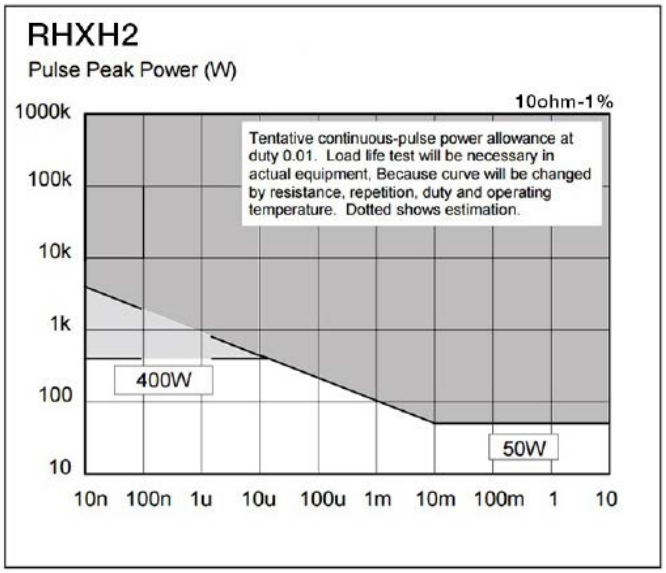
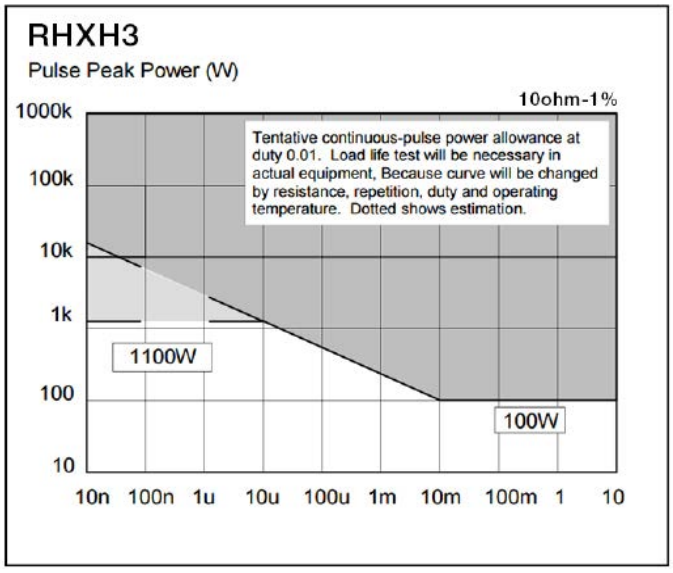
Pulse Energy Capability







This datasheet is subject to change without notice.