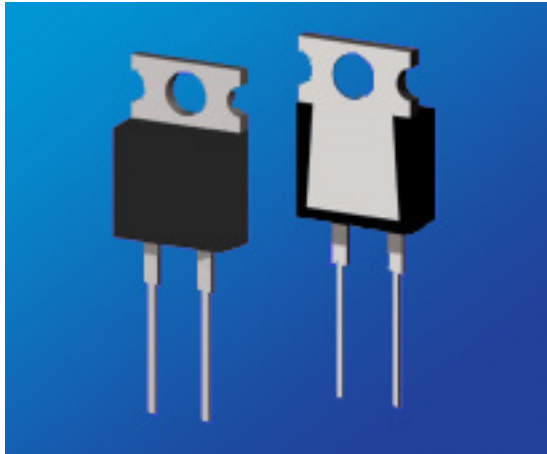


RESISTOR HIGH POWER LOW INDUCTANCE

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 $\pm 0.1\%$ or $\pm 1\%$
- Low Inductance of $< 10\text{nH}$ for RHXH1 and RHXH2, $< 50\text{nH}$ 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	$\pm 1\%$ ($R \geq 0.1\Omega$) $\pm 5\%$
RHXH2	0.02	51K	50	1	2.3°C/W	$\pm 1\%$ ($R \geq 0.1\Omega$) $\pm 5\%$
RHXH3	0.02	51K	100	3	1.3°C/W	$\pm 1\%$ ($R \geq 0.10\Omega$) $\pm 5\%$

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:

- $\pm 50\text{ppm}/^\circ\text{C}$ ($R \geq 10\Omega$)
- $\pm 100\text{ppm}/^\circ\text{C}$ ($0.1\Omega \leq R < 10\Omega$)
- $\pm 250\text{ppm}/^\circ\text{C}$ ($R < 0.1\Omega$)

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 = $\pm 50\text{ppm}/^\circ\text{C}$ N = $\pm 100\text{ppm}/^\circ\text{C}$ K = $\pm 250\text{ppm}/^\circ\text{C}$	0R038 = 0.038 Ω 003K8 = 3.8K Ω 038K0 = 38.0K Ω 380K0 = 380.0K Ω 003M8 = 3.8M Ω Letter denotes decimal place. R = decimal, "K" 10^3 , "M" 10^6 Remaining 4 digits are significant or placeholders.	F = $\pm 1.0\%$ ($R \geq 0.1\Omega$) J = $\pm 5.0\%$	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, $\pm 50\text{ppm}/^\circ\text{C}$, 38.0K Ω , $\pm 1.0\%$, tube



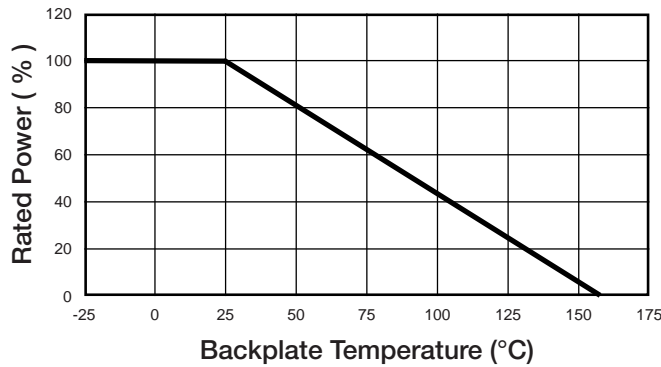
RESISTOR HIGH POWER LOW INDUCTANCE RHX SERIES



ENVIRONMENTAL CHARACTERISTICS

Electrical Characteristics	RHXH1 & RHXH2 Values	RHXH3 Value
Maximum 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	$\sqrt{\text{Power} \times \text{Resistance}}$ (500V MAX)	700 V or $\sqrt{\text{Power} \times \text{Resistance}}$, 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

RHX SERIES



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	$\pm 1\% + 0.05\Omega$			40°C, 90-95% RH, DC 0.1W, 1000 hr
Load Life	$\pm 1\% + 0.05\Omega$			25°C, 90 min ON, 30 min OFF, 1000 hr
Temperature Cycle	$\pm 0.25\% + 0.05\Omega$			-55°C for 30 min, +155°C for 30 min, 1000 hr
Vibration	$\pm 0.25\% + 0.05\Omega$			IEC60068-2-6
Solder Heat	$\pm 0.1\% + 0.05\Omega$			+350°C, 3s

Moisture Sensitivity Level: MSL-1



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