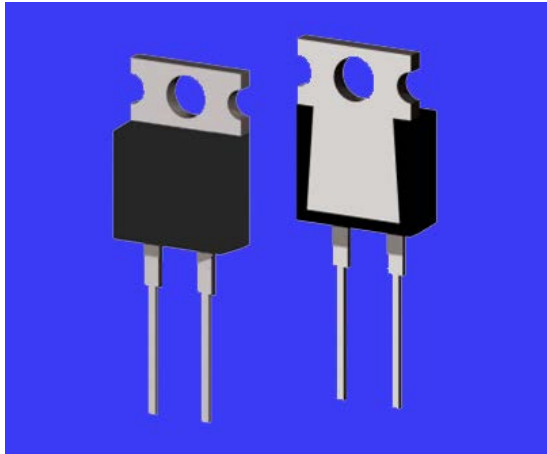


# Resistor High Power Low Inductance RHX Series



## 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 ( $\Omega$ ) <sup>3</sup>		POWER RATING (W)		THERMAL RESISTANCE	TOLERANCES
	MIN	MAX	HEATSINK <sup>1</sup>	FREE AIR <sup>2</sup>		
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	$\pm 1\%$ ( $R \geq 0.10\Omega$ ) $\pm 5\%$

<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> 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 $\Omega$ 003K8 = 3.8K $\Omega$ 038K0 = 38.0K $\Omega$ 380K0 = 380.0K $\Omega$ 003M8 = 3.8M $\Omega$ 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

Example P/N: RHXH2Q038K0F4 is Resistor High Power Low Inductance, 50W TO-220,  $\pm 50\text{ppm}/^\circ\text{C}$ , 38.0K $\Omega$ ,  $\pm 1.0\%$ , tube

\* Tin/Lead coated leads, add "- Pb" on part number

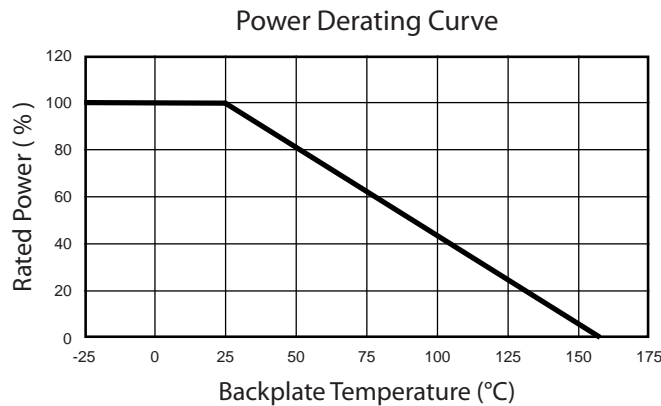


# Resistor High Power Low Inductance RHX Series



## 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	$\sqrt{Power \times Resistance}$ (500V MAX)	700 V or $\sqrt{Power \times Resistance}$ , whichever is less



### 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	±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

This datasheet is subject to change without notice.

