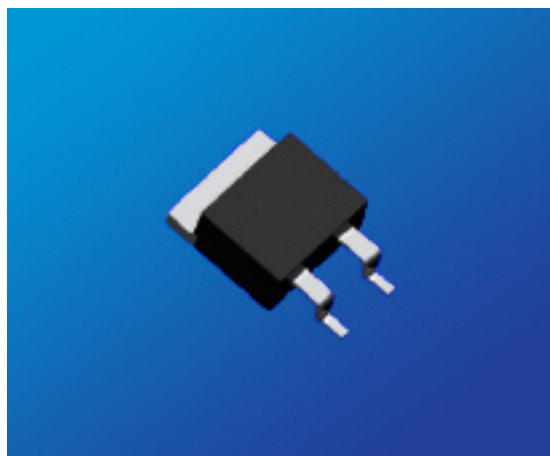


# RESISTOR POWER THIN FILM

## RHF SERIES



### KEY FEATURES

- Resistances from 0.01 Ohm to 51K Ohms
- Low Stability to 1%
- Resistance Tolerances to  $\pm 1\%$
- TCR to  $\pm 50\text{ppm}/^\circ\text{C}$
- Power Rating to 35 Watt
- Solder Reflow Secure at  $260^\circ\text{C} / 20\text{s}$
- TO-263 Housing (D-Pak)
- Isolated Back Plate

### APPLICATIONS

- Power Inverters
- Braking Systems
- Lighting (LED)
- Power Supplies

### PRODUCT RANGE SUMMARY

POWER RATING <sup>1</sup> (with heatsink)	RESISTANCE RANGE ( $\Omega$ )	TEMPERATURE COEFFICIENT	TOLERANCE RANGE <sup>2</sup>	OPERATING TEMPERATURE RANGE
35 W	0.01 to 0.099 $\Omega$	$\pm 250\text{ ppm}/^\circ\text{C}$	$\pm 5\%$	-55 $^\circ\text{C}$ to +155 $^\circ\text{C}$
	0.1 to 9.9 $\Omega$	$\pm 100\text{ ppm}/^\circ\text{C}$	$\pm 1\% / \pm 5\%$	
	10 to 51K $\Omega$	$\pm 50\text{ ppm}/^\circ\text{C}$	$\pm 1\%$	

<sup>1</sup> 2W on simple solder pad

<sup>2</sup> Consult factory for other tolerances not listed

### HOW TO ORDER

RHF	H4	Q	038K0	F	E
RESISTOR POWER THIN FILM	PACKAGE CODE WATTS	TEMPERATURE COEFFICIENT OF RESISTANCE (TCR)	RESISTANCE	TOLERANCE	PACKING
RHF	H4, 35W, TO-263	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 $\Omega$	F = $\pm 1.0\%$ J = $\pm 5.0\%$	E = Embossed Tape & Reel

For Tin/Lead coated leads, add "-Pb" to part numbers.

Standard Termination Finish: Matte Tin (Sn)

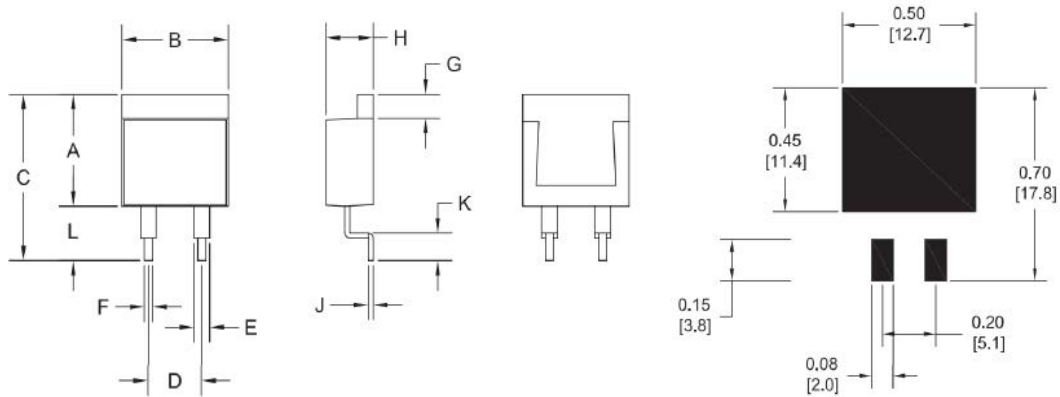
Example P/N: RHFH4Q038K0FE is Resistor Power Thin, 35W,  $\pm 50\text{ppm}/^\circ\text{C}$ , 38.0K $\Omega$ ,  $\pm 1.0\%$ , embossed tape & reel



# RESISTOR POWER THIN FILM

## RHF SERIES

### MECHANICAL CHARACTERISTICS



Units	Dimensions										
	A	B	C	D	E	F	G	H	J	K	L
mm	10.3	10.1	15.3	5.08	1.5	0.75	2.2	4.5	0.5	2.5	5.0
tol. (± mm)	0.2	0.2	1.0	0.1	0.05	0.05	0.2	0.2	0.05	0.5	1.0
inches	0.405	0.400	4.54	0.200	0.060	0.030	0.087	0.177	0.020	0.10	0.20
tol. (± inches)	0.008	0.008	0.04	0.004	0.002	0.002	0.008	0.008	0.002	0.02	0.04

### SPECIFICATIONS

Specifications	Values		
Resistor Material	Thin Film		
Terminals	2		
Power Rating (with heatsink)	35 W ( 2W on Simple Solder Pad )		
Inductance	8.4 nH		
Resistance Range	0.01 to 0.099Ω	0.1 to 9.9Ω	10 to 51KΩ
Temperature Coefficient	±250 ppm/°C	±100 ppm/°C	±50 ppm/°C
Tolerances (contact factory for other values)	± 5%	±1% / ±5%	±1%
Operating Temperature	-55°C to 155°C		
Thermal Resistance Rthj-c	3.3 K/W		
Max Operating Voltage	500V		
Voltage Proof	2.0kV DC		
Insulation Resistance	Over 1,000 MΩ		
Load Life	±1%	90 min ON, 30 min OFF, 1000 hrs @ 25°C	
Humidity	±1%	90-95% RH, 0.1W, 1000 hrs @ 40°C	
Temperature Cycle	±0.25%	-55°C for 30 min, +155°C for 30 min, 5 cycles	
Solder Heat	±0.1%	350°C ±5C for 3 seconds	
Vibration	±0.25%	IEC60068-2-6	
Reflow soldering	Lead-free soldering 260°C / 20s		

Moisture Sensitivity Level: MSL-1

# RESISTOR POWER THIN FILM

## RHF SERIES

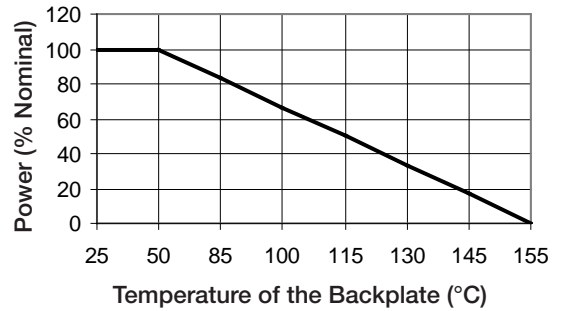
### POWER RATING NOTES:

- ♦ RHF Resistors must be attached to a suitable heatsink.
- ♦ The maximum internal resistor temperature is 175°C.
- ♦ Use the following formula to specify appropriate heatsink:

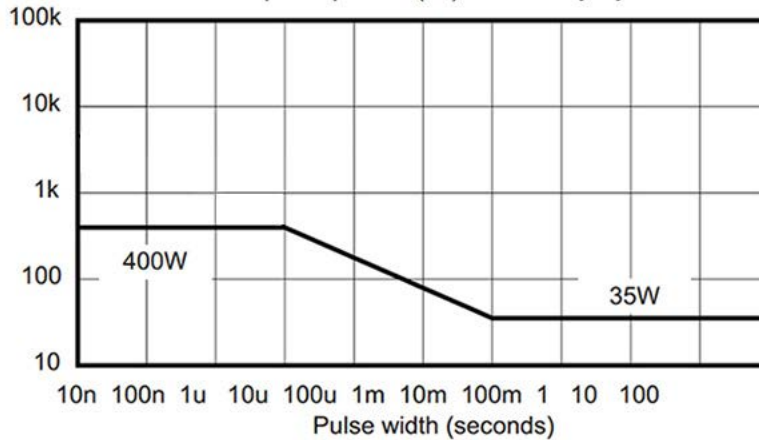
$$R_{\theta H} = \frac{T_{MAX} - (P * R_{\theta R}) - T_A}{P}$$

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

Power Derating Curve



Pulse peak power (W) - 0.01 Duty Cycle



Load life test will be necessary in actual equipment

This datasheet is subject to change without notice.



## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Thin Film Resistors - SMD category](#):*

*Click to view products by [Johanson manufacturer](#):*

Other Similar products are found below :

[M55342K06B34E0RT3](#) [D55342E07B379BR-TR](#) [AR02BTC1872](#) [AR02BTC18R7](#) [AR02BTC3830](#) [AR02BTC4220](#) [AR02BTC4422](#)  
[AR02BTC5100](#) [AR02BTC5111](#) [AR02BTC5762](#) [AR02BTC8251](#) [AR02BTC8452](#) [AR03BTC0110](#) [AR03BTC0120](#) [AR03BTC0330](#)  
[AR03BTC0390](#) [AR03BTC1102](#) [AR03BTC1103](#) [AR03BTC1201](#) [AR03BTC2000](#) [AR03BTC2201](#) [AR03BTC2203](#) [AR03BTC2490](#)  
[AR03BTC3003](#) [AR03BTC3302](#) [AR03BTC3901](#) [AR03BTC4220](#) [AR03BTC4223N](#) [AR03BTC5602](#) [AR03BTC5603](#) [AR03BTC5900](#)  
[AR03BTC7500](#) [AR03BTC9100](#) [AR03BTC9103](#) [AR03BTC9760](#) [AR05BTC0280](#) [AR05BTC1000](#) [AR05BTC1100](#) [AR05BTC1201](#)  
[AR05BTC1202](#) [AR05BTC1300](#) [AR05BTC14R3](#) [AR05BTC1500](#) [AR05BTC1523](#) [AR05BTC1620](#) [AR05BTC1622](#) [AR05BTC1623](#)  
[AR05BTC1760](#) [AR05BTC1800](#) [AR05BTC1823](#)