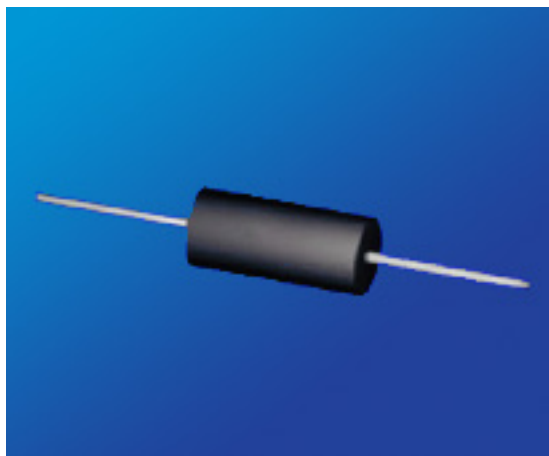


# RESISTOR WIREWOUND HIGH POWER RATING

## RWH SERIES



### KEY FEATURES

- Excellent Pulse Handling
- Resistance Tolerances to  $\pm 0.01\%$
- Resistance from 0.02 to 260kOhms
- MIL-R-26 / MIL-R-39007 Power Ratings
- Low TCR:  $\pm 20\text{ppm}/^\circ\text{C}$  Standard
- Non-Inductive Windings available

### APPLICATIONS

- HDVC Systems
- Braking Systems
- Power Supplies
- Fluid Heater

### PRODUCT SUMMARY

PRODUCT SERIES (RWH)	POWER RATING (W)	DIELECTRIC STRENGTH	TOLERANCE	TEMPERATURE COEFFICIENT	TEMPERATURE RANGE
Miniature Axial	1 to 15	<b>500 VAC:</b> E01, E02, E03, E04, E05, E06	$\pm 0.01\%$ to $\pm 10\%$ (1% Standard)	<ul style="list-style-type: none"> <li>• <math>&gt;10\Omega : \pm 20\text{ppm}/^\circ\text{C}</math></li> <li>• <math>1\Omega</math> to <math>10\Omega : \pm 50\text{ppm}/^\circ\text{C}</math></li> <li>• <math>&lt;1\Omega</math> : Call Factory</li> </ul>	-55°C to + 250°C
Axial	0.1 to 15	<b>500 VAC:</b> F01, F02, F03, F04, F05, F06, F07			<b>Characteristic U:</b> -55°C to + 275°C
		<b>1000 VAC:</b> All Others			<b>Characteristic V:</b> -55°C to + 350°C

### HOW TO ORDER

RWH	S	E02	T	U	003K8	F	S
RESISTOR WIREWOUND HIGH POWER	WINDINGS	PACKAGE CODE, WATTS, RESISTANCE	OPERATING TEMPERATURE	TEMPERATURE COEFFICIENT OF RESISTANCE (TCR)	RESISTANCE	TOLERANCE	PACKING
	S = Standard N = Non-Inductive	<b>Miniature Axial</b> E01, 1.0W, 33Vmax E02, 1.0W, 33Vmax  <b>Axial</b> F01, 0.1W, 8.5Vmax F02, 0.4W, 20Vmax  See Table	T = -55°C to +250°C U = -55°C to +275°C V = -55°C to +350°C	U = $\pm 20\text{ppm}/^\circ\text{C}$ Q = $\pm 50\text{ppm}/^\circ\text{C}$ Z = Special	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.	T = $\pm 0.01\%$ Q = $\pm 0.02\%$ A = $\pm 0.05\%$ B = $\pm 0.1\%$ F = $\pm 1.0\%$ J = $\pm 5.0\%$ K = $\pm 10.0\%$	S = Bulk T = Tape & Reel

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

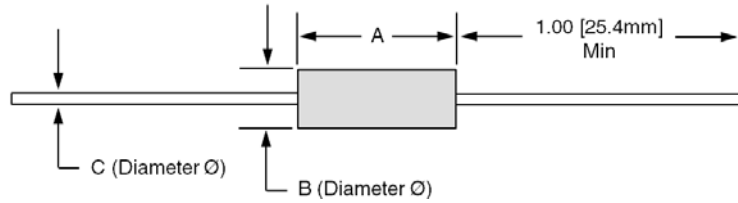
Standard Termination Finish: Matte Tin (Sn)

Example P/N: RWHSE02TU003K8FS is Resistor Wirewound High Power, Standard, 1.0W, 33V, -55°C to +250°C,  $\pm 20\text{ppm}/^\circ\text{C}$ , 3.8K $\Omega$ ,  $\pm 1.0\%$ , bulk

# RESISTOR WIREWOUND HIGH POWER RATING

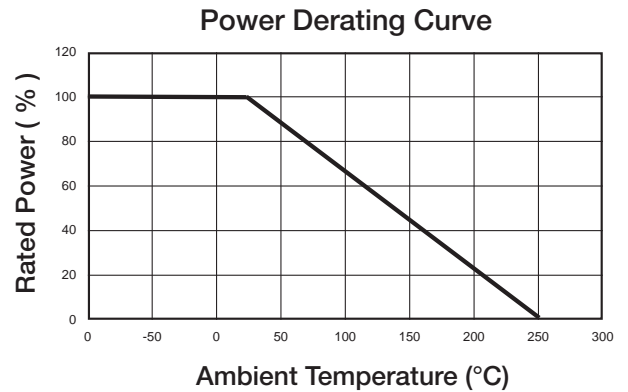
## RWH SERIES

### MINIATURE AXIAL



Package Code	E01	E02	E03	E04	E05	E06	E07	E08	E09	
Max Resistance ( $\Omega$ ) <sup>1</sup>	3.4k	3.4k	7.5k	7.5k	10k	10k	12.5k	25k	32k	
Max Working Voltage (V)	33	33	42	42	80	80	135	162	194	
Power Rating (W)	1	1	1.5	1.5	2	2	3	4	5	
Dimensions Inches [mm]	<b>A</b> $\pm 0.062"$ [ $\pm 1.57$ mm]	0.250 [6.35]	0.250 [6.35]	0.312 [7.92]	0.312 [7.92]	0.406 [10.31]	0.406 [10.31]	0.350 [8.89]	0.560 [14.22]	0.500 [12.70]
	<b>B</b> $\pm 0.031"$ [ $\pm 0.79$ mm]	0.085 [2.16]	0.085 [2.16]	0.078 [1.98]	0.078 [1.98]	0.094 [2.39]	0.094 [2.39]	0.156 [3.96]	0.187 [4.75]	0.218 [5.54]
	<b>C</b> <sup>2</sup> $\pm 0.002"$ [ $\pm 0.05$ mm]	0.020 [0.51]	0.025 [0.64]	0.020 [0.51]	0.025 [0.64]	0.025 [0.64]	0.020 [0.51]	0.032 [0.81]	0.032 [0.81]	0.040 [1.02]
MIL-R-26 / MIL-R-39007	RW-81 RWR-81	RW-81 RWR-81	RWR-82	RWR-82	RW-80 RWR-80	RW-80 RWR-80				

Package Code	E10	E11	E12	E13	
Max Resistance ( $\Omega$ ) <sup>1</sup>	50k	95k	150k	260k	
Max Working Voltage (V)	258	425	607	1050	
Power Rating (W)	6	7	10	15	
Dimensions Inches [mm]	<b>A</b> $\pm 0.062"$ [ $\pm 1.57$ mm]	0.625 [15.88]	0.875 [22.23]	1.220 [30.99]	1.780 [45.21]
	<b>B</b> $\pm 0.031"$ [ $\pm 0.79$ mm]	0.250 [6.35]	0.312 [7.92]	0.312 [7.92]	0.375 [9.53]
	<b>C</b> <sup>2</sup> $\pm 0.002"$ [ $\pm 0.05$ mm]	0.040 [1.02]	0.040 [1.02]	0.040 [1.02]	0.040 [1.02]
MIL-R-26 / MIL-R-39007		RW-84			



<sup>1</sup> For non-inductive windings / divide maximum resistance by 2

<sup>2</sup> Lead Diameter:

18 AWG = 0.040" / 20 AWG = 0.032" / 22 AWG = 0.025" / 24 AWG = 0.020"

# RESISTOR WIREWOUND HIGH POWER RATING

## RWH SERIES

**AXIAL**



Package Code		F01	F02	F03	F04	F05	F06	F07	F08	F09	F10
Max Resistance ( $\Omega$ ) <sup>1</sup>		500	2.5k	2.5k	7.5k	7.5k	10k	10k	12.5k	22k	22k
Max Working Voltage (V)		8.5	20	20	29	29	52	52	60	130	140
Power Rating (W)	U	0.1	0.4	0.4	0.75	0.75	1.0	1.0	1.5	2.5	3.0
	V	0.25	0.5	0.5	0.9	0.9	1.5	1.5	2.0	3.0	3.75
Dimensions Inches [mm]	A $\pm 0.062"$ [ $\pm 1.57$ mm]	0.150 [3.81]	0.250 [6.35]	0.250 [6.35]	0.330 [8.38]	0.330 [8.38]	0.406 [10.31]	0.406 [10.31]	0.350 [8.89]	0.500 [12.70]	0.560 [14.22]
	B $\pm 0.031"$ [ $\pm 0.79$ mm]	0.078 [1.98]	0.094 [2.39]	0.094 [2.39]	0.094 [2.39]	0.094 [2.39]	0.094 [2.39]	0.094 [2.39]	0.156 [3.96]	0.187 [4.75]	0.187 [4.75]
	C <sup>2</sup> $\pm 0.002"$ [ $\pm 0.05$ mm]	0.018 [0.45]	0.020 [0.51]	0.025 [0.64]	0.020 [0.51]	0.025 [0.64]	0.020 [0.51]	0.025 [0.64]	0.032 [0.81]	0.032 [0.81]	0.032 [0.81]
MIL-R-26 / MIL-R-39007							RW-70	RW-70		RW-69	RW-79

Package Code		F11	F12	F13	F14	F15	F16	F17	F18	F19	F20
Max Resistance ( $\Omega$ ) <sup>1</sup>		40k	40k	30k	45k	45k	91k	65k	95k	150k	100k
Max Working Voltage (V)		140	140	140	210	210	360	390	504	650	590
Power Rating (W)	U	3.0	3.0	3.0	4.0	4.0	5.0	5.0	5.0	7.0	7.0
	V	4.0	4.0	3.5	5.5	5.5	6.5	6.5	6.5	9.0	9.0
Dimensions Inches [mm]	A $\pm 0.062"$ [ $\pm 1.57$ mm]	0.500 [12.70]	0.500 [12.70]	0.500 [12.70]	0.675 [17.15]	0.675 [17.15]	0.875 [22.23]	0.970 [24.64]	1.025 [26.04]	1.375 [34.93]	1.400 [35.56]
	B $\pm 0.031"$ [ $\pm 0.79$ mm]	0.250 [6.35]	0.250 [6.35]	0.200 [5.08]	0.270 [6.68]	0.270 [6.68]	0.312 [7.92]	0.250 [6.35]	0.312 [7.92]	0.375 [9.52]	0.312 [7.92]
	C <sup>2</sup> $\pm 0.002"$ [ $\pm 0.05$ mm]	0.040 [1.02]	0.032 [0.81]	0.032 [0.81]	0.040 [1.02]	0.032 [0.81]	0.040 [1.02]	0.032 [0.81]	0.040 [1.02]	0.040 [1.02]	0.032 [0.81]
MIL-R-26 / MIL-R-39007							RW-74		RW-67		

Package Code		F21	F22	F23
Max Resistance ( $\Omega$ ) <sup>1</sup>		154k	260k	320k
Max Working Voltage (V)		620	850	1500
Power Rating (W)	U	7.0	10	15
	V	9.0	13	-
Dimensions Inches [mm]	A $\pm 0.062"$ [ $\pm 1.57$ mm]	1.200 [30.99]	1.780 [45.21]	1.810 [45.95]
	B $\pm 0.031"$ [ $\pm 0.79$ mm]	0.312 [7.92]	0.375 [9.52]	0.510 [12.95]
	C <sup>2</sup> $\pm 0.002"$ [ $\pm 0.05$ mm]	0.040 [1.02]	0.040 [1.02]	0.050 [1.27]
MIL-R-26 / MIL-R-39007			RW-78	

- <sup>1</sup> For non-inductive windings / divide maximum resistance by 2  
<sup>2</sup> Lead Diameter:  
 18 AWG = 0.040" / 20 AWG = 0.032" / 22 AWG = 0.025" /  
 24 AWG = 0.020" / 25 AWG = 0.018"



# RESISTOR WIREWOUND HIGH POWER RATING

## RWH SERIES

### ENVIRONMENTAL PERFORMANCE

Environmental Performance (MIL-STD 202)	$\Delta R$		
	Miniature Axial	Axial - Characteristic U	Axial - Characteristic V
Vibration	$\pm 0.1\% + 0.05 \Omega$	$\pm 0.1\% + 0.05 \Omega$	$\pm 0.2\% + 0.05 \Omega$
Load Life	To 1% Depending on Resistance Value and Size	$\pm 1\% + 0.05 \Omega$	$\pm 3\% + 0.05 \Omega$
Moisture Resistance	$\pm 0.2\% + 0.05 \Omega$	$\pm 0.2\% + 0.05 \Omega$	$\pm 2\% + 0.05 \Omega$
Dielectric	$\pm 0.2\% + 0.05 \Omega$	$\pm 0.2\% + 0.05 \Omega$	$\pm 0.2\% + 0.05 \Omega$
Storage	$\pm 0.2\% + 0.05 \Omega$	$\pm 0.2\% + 0.05 \Omega$	$\pm 2\% + 0.05 \Omega$
Shock	$\pm 0.1\% + 0.05 \Omega$	$\pm 0.1\% + 0.05 \Omega$	$\pm 0.2\% + 0.05 \Omega$
Thermal Shock	$\pm 0.2\% + 0.05 \Omega$	$\pm 0.2\% + 0.05 \Omega$	$\pm 2\% + 0.05 \Omega$
5X Overload (5s)	$\pm 0.2\% + 0.05 \Omega$	$\pm 0.2\% + 0.05 \Omega$	$\pm 2\% + 0.05 \Omega$

#### CONSTRUCTION NOTES:

- ♦ Centerless ground ceramic core
- ♦ Tinned copper or copperweld leads
- ♦ All welded terminations
- ♦ High Temperature / trivalent / inorganic silicone coating

### PACKAGING INFORMATION

MINIATURE AXIAL: Bulk Only

AXIAL:

Package Code	F01	F02	F03	F04	F05	F06	F07	F08	F09	F10	F11	F12	F13	
Bulk	Bulk Only. No T&R	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
10" Reel		2000	2000	2000	2000	2000	2000	2000	500	500	500	500	500	
12" Reel		3000	3000	3000	3000	3000	3000	3000	3000	1500	1500	1000	1000	1000
14" Reel		5000	5000	5000	5000	5000	5000	5000	5000	3000	3000	1500	1500	1500

Package Code	F14	F15	F16	F17	F18	F19	F20	F21	F22
Bulk	1000	1000	1000	1000	1000	1000	1000	1000	1000
10" Reel	N/A	N/A	N/A	500	N/A	N/A	N/A	N/A	N/A
12" Reel	500	500	500	1000	500	500	500	500	500
14" Reel	1000	1000	1000	1500	1000	750	750	750	750

Moisture Sensitivity Level: MSL-1

### AVAILABLE OPTIONS (Consult Factory)

- Special Testing Requirements
- Special Pulse Requirements

This datasheet is subject to change without notice.

