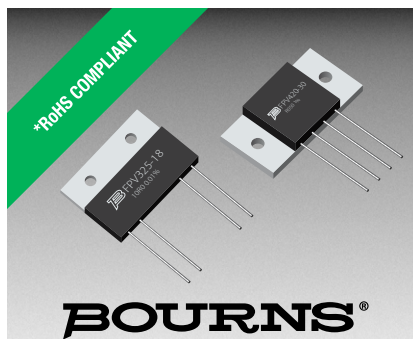




Features

- Formerly a Riedon™ product
- Resistances from 0.05 Ω to 650 Ω
- Power rating to 50 watts
- Resistance tolerances to $\pm 0.01\%$
- TCR to ± 1 PPM/ $^{\circ}\text{C}$
- Load stability to 0.01 %
- Isolated backplate
- RoHS compliant*

Applications

- Current sense
- Battery management systems
- Power supplies
- Motor drives

FPV Series – Riedon™ Ultra Precision Power Resistors by Bourns

Specifications

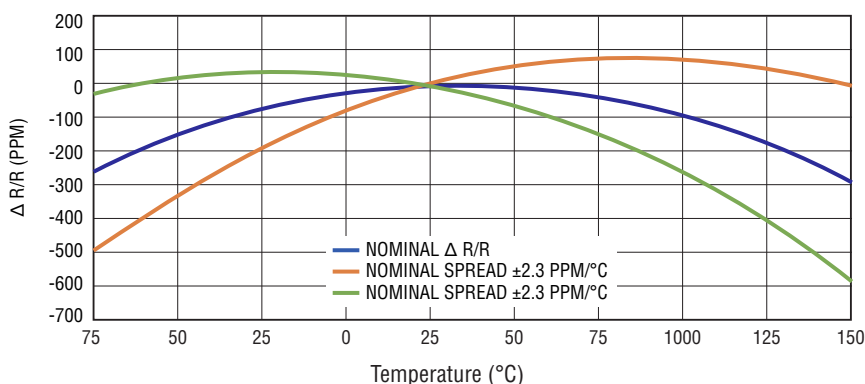
Characteristic	FPV325-18	FPV420-30	FPV325-20	FPV420-50
Resistance Range (Ω) ¹	0.05 - 650	0.05 - 100	0.05 - 650	0.05 - 100
Power Rating (W) ² Free Air @ 70 $^{\circ}\text{C}$ With Heat Sink	3 18	2.5 30	3 20	2.5 50
Thermal Resistance $R_{\text{th-j-c}}$ (K/W)	3.5	3.6	2.1	2.2
Tolerances 0.05 $\Omega \leq R < 10 \Omega$ 10.0 $\Omega \leq R < 50.0 \Omega$ 50.0 $\Omega \leq R$	0.1 % / 0.25 % / 0.5 % / 1 % 0.05 % / 0.1 % / 0.25 % / 0.5 % / 1 % 0.01 % / 0.02 % / 0.05 % / 0.1 % / 0.25 % / 0.5 % / 1 %			
Stability	0.01 %			
Shelf Life Stability	25 PPM / ΔR after 1 year 50 PPM / ΔR after 3 years			
Temperature Coefficient 325: (+25 $^{\circ}\text{C}$ to +60 $^{\circ}\text{C}$) 420: (-55 $^{\circ}\text{C}$ to +125 $^{\circ}\text{C}$)	± 5 PPM/ $^{\circ}\text{C}$ ± 3 PPM/ $^{\circ}\text{C}$ (Standard) ± 1 PPM/ $^{\circ}\text{C}$ (only from +25 $^{\circ}\text{C}$ to +60 $^{\circ}\text{C}$)			
Voltage Proof	750 VDC			
Max. Current	15 A			
Thermal EMF	<0.1 $\mu\text{V/K}$			
Terminals	4			

Notes:

¹ Other resistance values available upon request.

² Power rating dependent upon resistance value.

Temperature Coefficient



Additional Information

Click these links for more information:



General Specifications

Operating Temperature Range
..... -55 $^{\circ}\text{C}$ to +155 $^{\circ}\text{C}$
Resistor Material.....NiCr-Foil
Substrate
18 W / 30 W Al_2O_3
20 W / 50 WAIN
HousingEpoxy + Al-heat sink
Connector Material.....Cu tinned
Terminals4
Max. Torque.....1.0 Nm

How to Order

FPV 325 - 20 - R050 B S

Model _____
FPV _____

Size _____
325 = 3425
420 = 4020

Power Rating _____
18 = 18 W
20 = 20 W
30 = 30 W
50 = 50 W

Resistance _____
"R" represents decimal point
(example: R050 = 0.05 Ω ,
650R = 650 Ω)

Tolerance _____
L = $\pm 0.01\%$ C = $\pm 0.25\%$
P = $\pm 0.02\%$ D = $\pm 0.5\%$
W = $\pm 0.05\%$ F = $\pm 1.0\%$
B = $\pm 0.1\%$

TCR (PPM/ $^{\circ}\text{C}$) _____
K = ± 1
S = ± 3 (Standard)
M = ± 5



CALIFORNIA WARNING: Can expose you to lead, a carcinogen and reproductive toxicant.
See www.P65Warnings.ca.gov

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

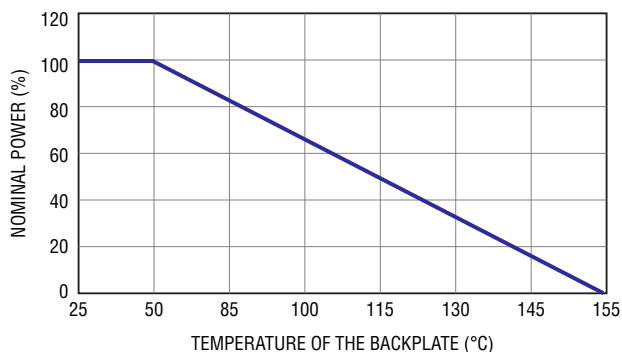
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FPV Series – Riedon™ Ultra Precision Power Resistors by Bourns

BOURNS®

Power Derating Curve



Power Rating Notes

The FPV Series Resistors must be attached to a suitable heat sink. The maximum internal resistor temperature is 155 °C. To specify an appropriate heat sink use the following formula:

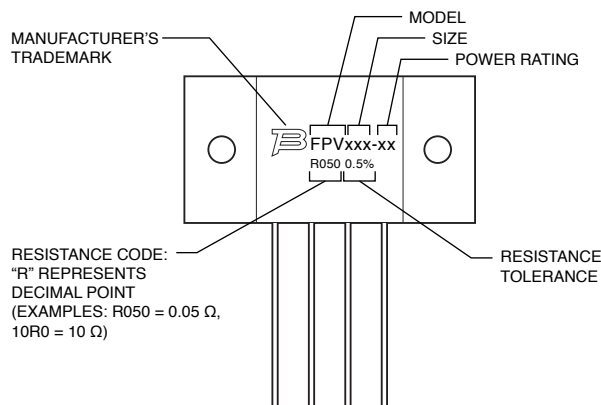
$$R_{\theta H} = \frac{T_{MAX} - (P \times R_{\theta R}) - T_A}{P}$$

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

Packaging Information

Bulk50 pcs./box

Typical Part Marking



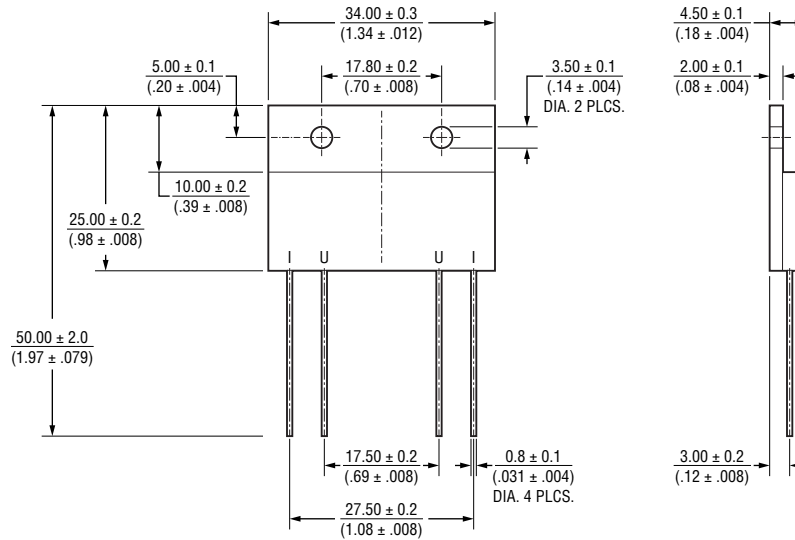
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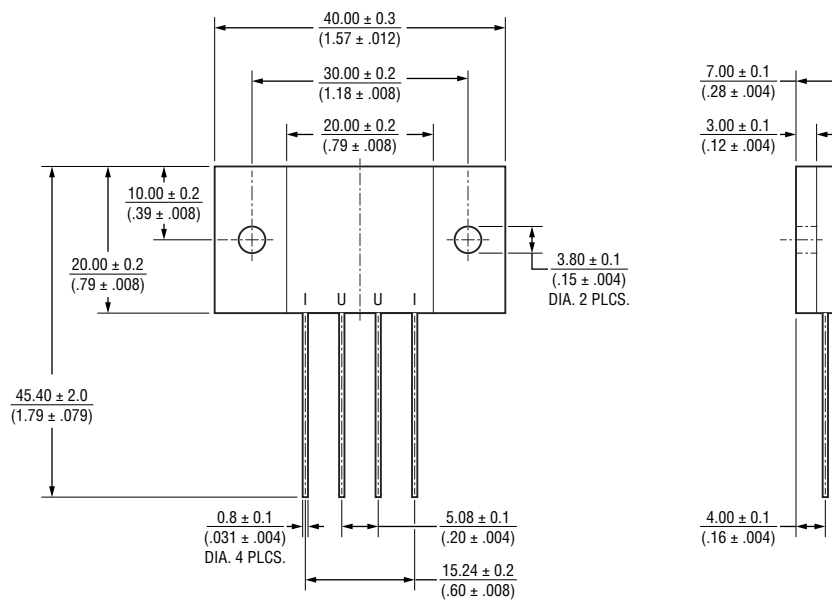
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Product Dimensions

FPV325



FPV420



DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

BOURNS®

Americas: Tel: +1 951-781-5500 • Email: americus@bourns.com

Mexico: Tel: +52-614-478-0400 • Email: mexicus@bourns.com

Asia: Tel: +886-2-2562-4117 • Email: asiacus@bourns.com

EMEA: Tel: +36 88 885 877 • Email: eurocus@bourns.com

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