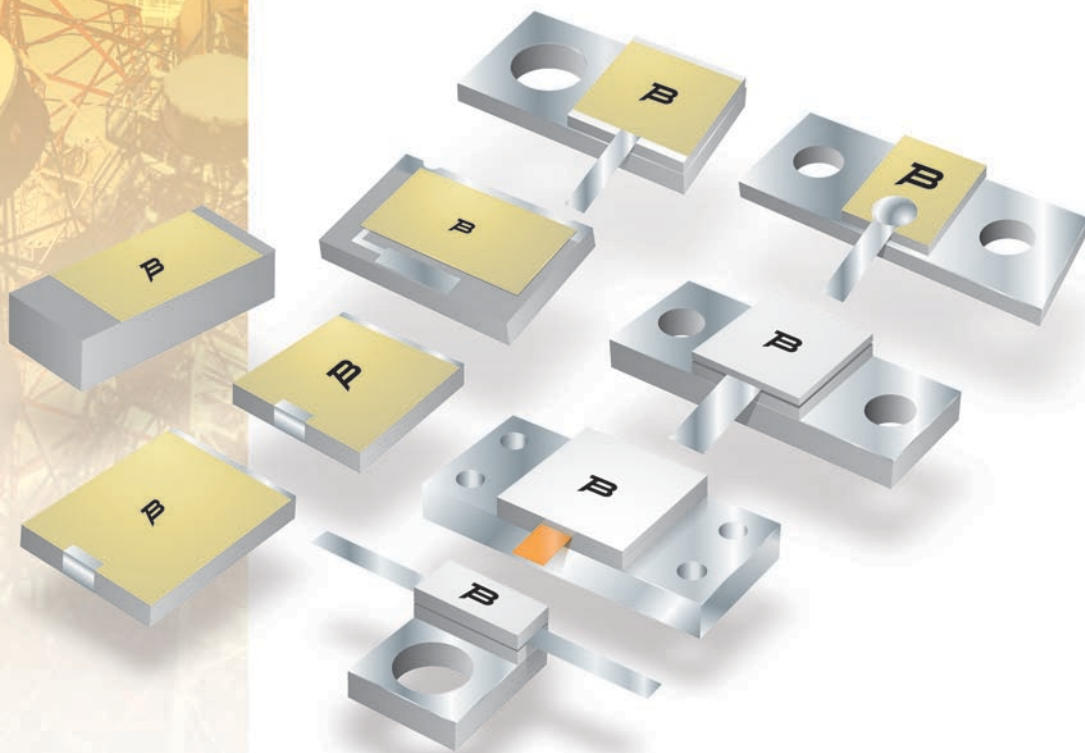


Bourns® RF Power Resistors and Terminations

Short Form Brochure



Bourns® RF Power Resistors and Terminations

Products which are delivered as flange mounted (see How to Order) should be bolted onto a heat sink, (see *Figure 1*) making sure that thermal grease is applied to the bottom of the flange before installation. Both the flange and heat sink should be perfectly dry and clean of any oxidants before the grease is brushed on. The thermal grease will have a high thermal conductivity and will facilitate the passage of heat between the power resistor and the heat sink by improving the contact between the two surface areas.

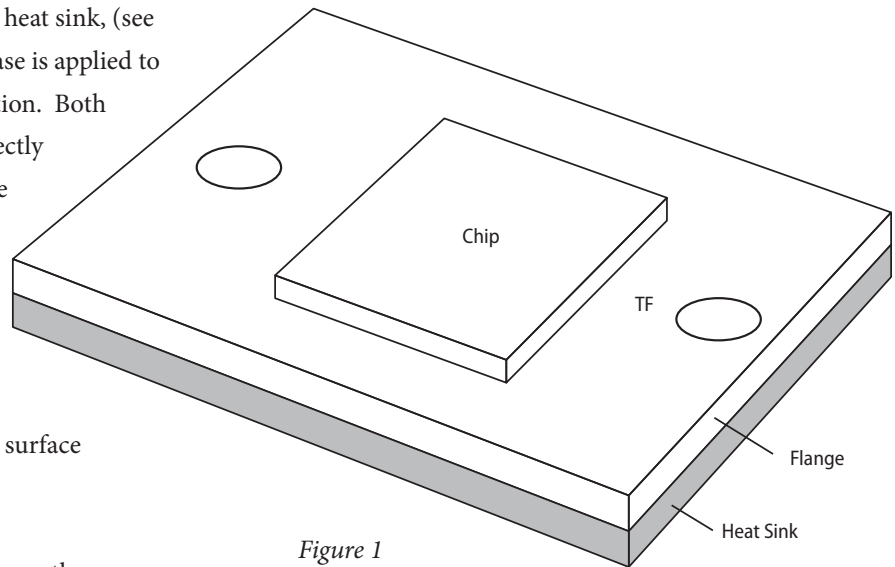


Figure 1

Bourns recommends a torque of 0.6 Nm on the screws to ensure an optimum connection between the flange and the heat sink.

The parts are designed to run at full power provided that the temperature on the flange at the point marked by (TF) does not exceed 110 °C. The temperature on the surface of the chip should not exceed 180 °C as a rule.

For chips which are delivered without a flange, the part must be reflowed either onto a flange or a printed circuit board (depending on the configuration of the terminals on the resistor chip).

The circuit board should have either solder filled vias or a copper well underneath the pads which help to conduct heat away from the chip. Bourns mounts its test PCB onto a flange which in turn is fixed onto a heat sink. Bourns recommends that the PCB temperature not exceed 100 °C at full load.

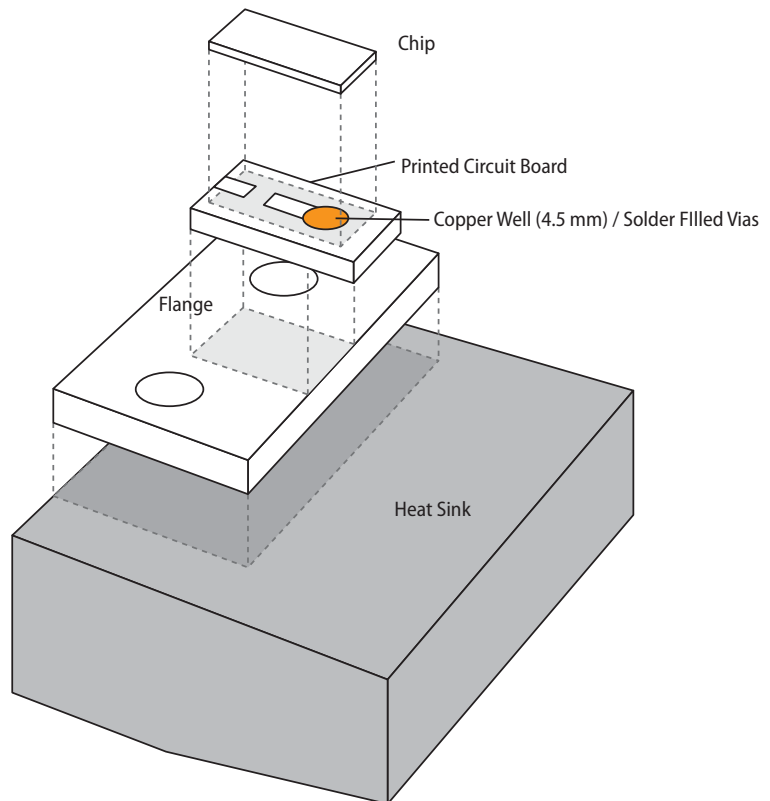


Figure 2

Product Selection Guide

Features

- Wide Range of Chip Sizes and Power Ratings
- Excellent Return Loss Over a Wide Range of Frequencies Up to 9 GHz
- Used in Broadcast, GSM, WCDMA, Wimax Transmitters

Flange Mounted RF Power Resistors	Power (W)	Frequency (GHz)	VSWR	Substrate	Resistance Values Available ($\Omega \pm 5\%$)	Capacitance (pF)	Applications
Model							
CHF3020	10	4	1.35	BeO	50, 100, 200	0.8	Combiner, Filter, Divider, Coupler
CHF5225	60	4	1.2	ALN	50, 100	2.1	Combiner, Filter, Divider, Coupler
CHF5225XBF	60	4	1.2	BeO	50, 100	2.1	Combiner, Filter, Divider, Coupler
CHF5225XAF	20	4	1.2	AL203	50, 100	2.1	Combiner, Filter, Divider, Coupler
CHF8838CNF500L	150	3	1.2	ALN	50	N/A	Combiner, Filter, Divider, Coupler
CHF9838CNF	250	2.2	1.1	ALN	50	N/A	Combiner, Filter, Divider, Coupler
CHF9838CBF	250	3	1.25	BeO	12.5, 25, 50, 100	4.1	Combiner, Filter, Divider, Coupler
CHF12545CBF	500	1	1.1	BeO	50, 100	4.2	Combiner, Filter, Divider, Coupler
CHF11050CBF500L	400	1	1.2	BeO	50	N/A	Combiner, Filter, Divider, Coupler
CHF190104CBF	800	1	1.2	BeO	12.5, 25, 50, 100	14	Combiner, Filter, Divider, Coupler
Surface Mount Chips With Input Via External Lead							
Model							
CHF1206CNT500LW	20	3	1.25	ALN	50	N/A	Drop In Isolator
CHF2525CNT	40	9	1.2	ALN	50	N/A	Drop In Isolator
CHF3523CNT	150	3	1.1	ALN	50	N/A	Drop In Isolator
CHF3523DNT500LW	100	6	1.2	ALN	50	N/A	Drop In Isolator
Surface Mount Chips With PCB Terminals							
Model							
CHF2010CNP500L	10	2	1.2	ALN	50	N/A	Isolator, Coupler
CHF2010CNPXXXR	10	2	N/A	ALN	50, 100	0.14	Divider, Attenuator
CHF3725CNP500L	40	4	1.2	ALN	50	N/A	Isolator, Coupler

Available Packages

(Dimensions in mm/inches)

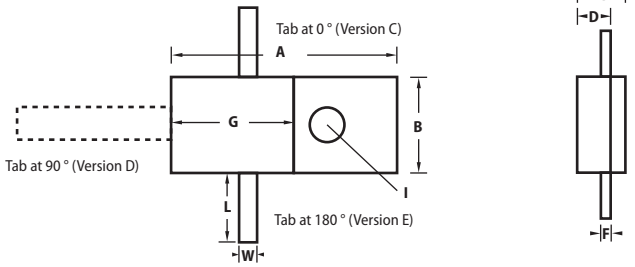
Flange Mounted RF Power Resistors									
Model	A	B	C	D	F	G	I	W	L
<i>(Single Hole Style 1)</i>									
CHF3020	7.62 / (0.3)	5.08 / (0.20)	3.7 / (0.146)	2.57 / (0.101)	0.1 / (0.004)	2.54 / (0.1)	3.0 / (0.118)	1.0 / (0.039)	6.5 / (0.256)
CHF5225xA	13.1 / (0.52)	6.35 / (0.25)	2.57 / (0.101)	2.57 / (0.101)	0.1 / (0.004)	6.35 / (0.25)	3.0 / (0.118)	1.5 / (0.059)	6.5 / (0.256)
CHF5225xB	13.1 / (0.52)	6.35 / (0.25)	4.0 / (0.157)	2.57 / (0.101)	0.1 / (0.004)	6.35 / (0.25)	3.0 / (0.118)	1.5 / (0.059)	6.5 / (0.256)
<i>(Two Hole Style 2)</i>									
CHF8838CNF500L	22.1 / (0.88)	9.53 / (0.38)	2.77 / (0.1089)	2.77 / (0.1089)	0.1 / (0.004)	6.35 / (0.25)	4.0 / (0.16)	1.5 / (0.059)	6.5 / (0.256)
CHF9838CBF	24.77 / (0.98)	9.53 / (0.38)	4.92 / (0.1937)	3.79 / (0.149)	0.1 / (0.004)	9.53 / (0.375)	3.5 / (0.1377)	3.0 / (0.116)	6.5 / (0.256)
CHF9838CNF	24.77 / (0.98)	9.53 / (0.38)	3.79 / (0.149)	3.79 / (0.149)	0.1 / (0.004)	9.53 / (0.375)	3.5 / (0.1377)	3.0 / (0.116)	6.5 / (0.256)
CHF12545	31.75 / (1.25)	12.7 / (0.500)	5.07 / (0.2)	4.2 / (0.165)	0.1 / (0.004)	12.7 / (0.5)	4.2 / (0.165)	1.5 / (0.059)	6.5 / (0.256)
CHF11050	27.94 / (1.1)	12.7 / (0.5)	6.0 / (0.236)	4.2 / (0.165)	0.1 / (0.004)	12.7 / (0.5)	4.31 / (0.17)	3.0 / (0.118)	6.5 / (0.256)

Model	A	B	C	D	F	G	I	J	W	L
<i>(Four Hole Style 3)</i>										
CHF190104CBF	48.2 / (1.89)	26.4 / (1.039)	8.8 / (0.346)	7.7 / (0.303)	0.1 / (0.004)	25.4 / (1.0)	4.2 / (0.165)	12.7 / (0.5)	6.35 / (0.25)	9.0 / (0.354)

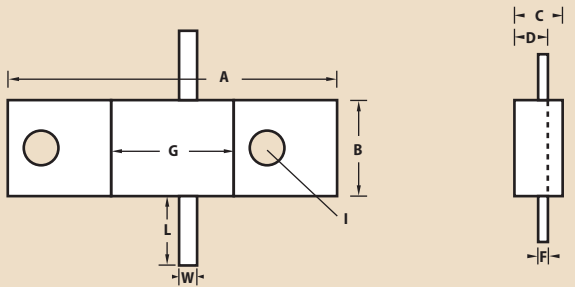
Surface Mount Chips							
Model	B	D	G	M	N1	N2	N3
<i>With PCB Terminals (Style 4)</i>							
CHF2010CNP500LX(W)	5.08 / (0.2)	0.9906 / (0.039)	2.54 / (0.1)	3.88 / (0.153)	0.76 / (0.03)	N/A	2.54 / (0.1)
CHF2010CNPxxxRX(W)	5.08 / (0.2)	1.02 / (0.04)	2.54 / (0.1)	2.4 / (0.09)	0.76 / (0.03)	0.76 / (0.03)	2.3 / (0.09)
CHF3725CNP500LX(W)	9.39 / (0.37)	0.99 / (0.039)	6.35 / (0.25)	6.6 / (0.26)	1.27 / (0.05)	N/A	2.99 / (0.118)

Model	B	D	G	TD	TW
<i>With Input Via External Lead (Style 5)</i>					
CHF1206CNT500LW	3.048 / (0.12)	0.635 / (0.025)	1.5748 / (0.062)	0.762 / (0.03)	1.5748 / (0.062)
CHF2525CNT500LX	6.35 / (0.25)	0.635 / (0.025)	6.35 / (0.25)	1.0 / (0.039)	1.2 / (0.047)
CHF3523CNT500LW	5.842 / (0.23)	0.9906 / (0.039)	8.89 / (0.35)	1.143 / (0.045)	3.302 / (0.13)
CHF3523DNT500LW	5.842 / (0.23)	0.9906 / (0.039)	8.89 / (0.35)	1.0 / (0.039)	1.8 / (0.071)

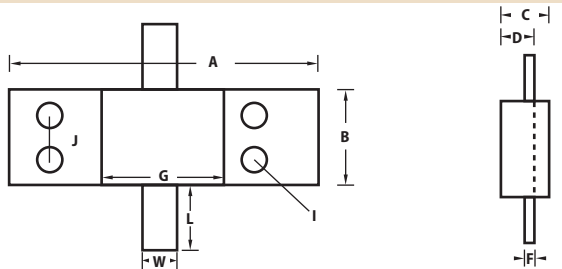
Available Packages



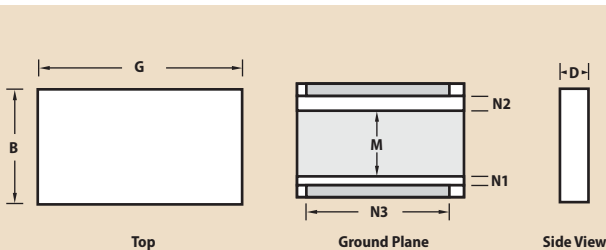
Style 1 Two Hole Flanged Model



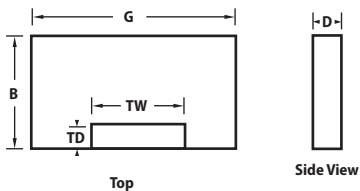
Style 2 Two Hole Flanged Model



Style 3 Four Hole Flanged Model



Style 4 Surface Mount Chip for PCB



Style 5 Surface Mount Chip with Input Via External Lead

How To Order

CHF 3725 C N P 500 L X

Product Class _____

RF Power Resistor

Package Size _____

Examples:

190104 = 1.9 x 1.04 Inches

3725 = 0.37 x 0.25 Inches

2010 = 0.2 x 0.10 Inches

1206 = 0.12 x 0.06 Inches

Version _____

For model CHF5225 please consult

“Available Packages, Style 1”

Substrate Material _____

A = Alumina (AL203)

N = Aluminium Nitride (ALN)

B = Beryllium Oxide (BeO)

Application _____

F = Mounted on a Flange

T = Chip With Input Terminal Requiring
an External Lead or Tab

P = Chip With Terminals Suitable
for Reflow onto PCB

Resistance Value (Standard Tolerance $\pm 5\%$) _____

12R5 = 12.5 Ohms

250 = 25 Ohms

500 = 50 Ohms

101 = 100 Ohms

Function _____

L = Load

R = Resistor

Finish (Only for Chips) _____

X = Gold Plating

W = Tin Plating



Worldwide Sales Offices

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