
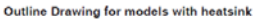
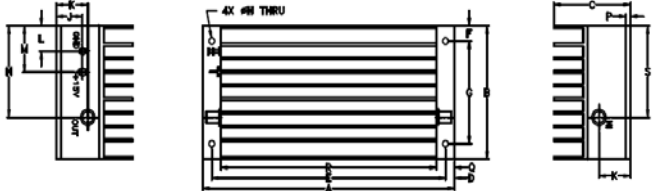


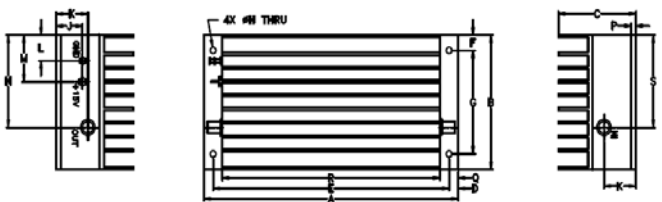
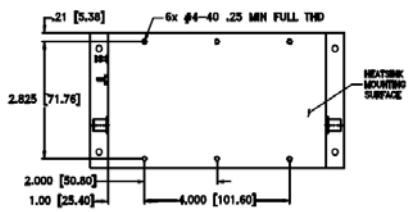


## ZHL-42W+ PCN Report

AN-60-072

As a result of the introduction of non heatsink version and assembly option at an alternate qualified Mini-Circuits facility, the replacement part has been judged by the Mini-Circuits Engineering team as a suitable replacement for the existing ZHL-42W+.

### CASE STYLE

ORIGINAL PART: ZHL-42W+	REPLACEMENT PART: ZHL-42W+																																																																																																												
<p>CASE STYLE: U36 (heatsink version only)</p>    <p>Outline Dimensions (inches/mm)</p> <table border="1"> <thead> <tr> <th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th><th>H</th><th>J</th><th>K</th><th>L</th><th>M</th><th>N</th><th>P</th><th>Q</th><th>R</th><th>S</th><th>wt</th> </tr> </thead> <tbody> <tr> <td>7.00</td><td>3.25</td><td>2.13</td><td>.25</td><td>6.500</td><td>.38</td><td>2.500</td><td>.156</td><td>.73</td><td>.88</td><td>.83</td><td>1.13</td><td>2.23</td><td>.125</td><td>.50</td><td>6.00</td><td>2.23</td><td>grams</td> </tr> <tr> <td>177.80</td><td>82.55</td><td>54.10</td><td>6.35</td><td>165.10</td><td>9.65</td><td>63.50</td><td>3.96</td><td>18.54</td><td>22.35</td><td>16.00</td><td>28.70</td><td>56.64</td><td>3.18</td><td>12.70</td><td>152.40</td><td>56.64</td><td>900</td> </tr> </tbody> </table>	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	wt	7.00	3.25	2.13	.25	6.500	.38	2.500	.156	.73	.88	.83	1.13	2.23	.125	.50	6.00	2.23	grams	177.80	82.55	54.10	6.35	165.10	9.65	63.50	3.96	18.54	22.35	16.00	28.70	56.64	3.18	12.70	152.40	56.64	900	<p>CASE STYLE: No change for heatsink version U36 (non heatsink &amp; heatsink versions)</p>   <p>Outline Drawing for models with heatsink</p>  <p>MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK</p>  <p>Outline Dimensions (inches/mm)</p> <table border="1"> <thead> <tr> <th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th><th>H</th><th>J</th><th>K</th><th>L</th><th>M</th><th>N</th><th>P</th><th>Q</th><th>R</th><th>S</th><th>wt</th> </tr> </thead> <tbody> <tr> <td>7.00</td><td>3.25</td><td>2.13</td><td>.25</td><td>6.500</td><td>.38</td><td>2.500</td><td>.156</td><td>.73</td><td>.88</td><td>.63</td><td>1.13</td><td>2.23</td><td>.125</td><td>.50</td><td>6.00</td><td>2.23</td><td>grams</td> </tr> <tr> <td>177.80</td><td>82.55</td><td>54.10</td><td>6.35</td><td>165.10</td><td>9.65</td><td>63.50</td><td>3.96</td><td>18.54</td><td>22.35</td><td>16.00</td><td>28.70</td><td>56.64</td><td>3.18</td><td>12.70</td><td>152.40</td><td>56.64</td><td>900</td> </tr> </tbody> </table> <p>*600 grams without heatsink</p>	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	wt	7.00	3.25	2.13	.25	6.500	.38	2.500	.156	.73	.88	.63	1.13	2.23	.125	.50	6.00	2.23	grams	177.80	82.55	54.10	6.35	165.10	9.65	63.50	3.96	18.54	22.35	16.00	28.70	56.64	3.18	12.70	152.40	56.64	900
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## CONCLUSION:

- 1) FIT and FORM are compatible with minor change: Create non heatsink version
- 2) Functional changes as follows:

Parameter	Original Part, ZHL-42W+	Replacement Part, ZHL-42W+
Gain Flatness	+/-1.5dB max	+/-1.8dB max, +/-1.3dB typ
Output VSWR	2.5:1 max	2.7:1 max
P1dB	28dBm min* *27dBm at 10-700MHz	28dBm min***, 30dBm typ ***27dBm at 3700-4200MHz
P3dB	N/A	29dBm min****, 31dBm typ ****28dBm at 3700-4200MHz
Noise Figure	8dB typ** **Below 100MHz NF increases to 15dB at 10MHz	6dB typ
Supply Current	0.88A max	1A max

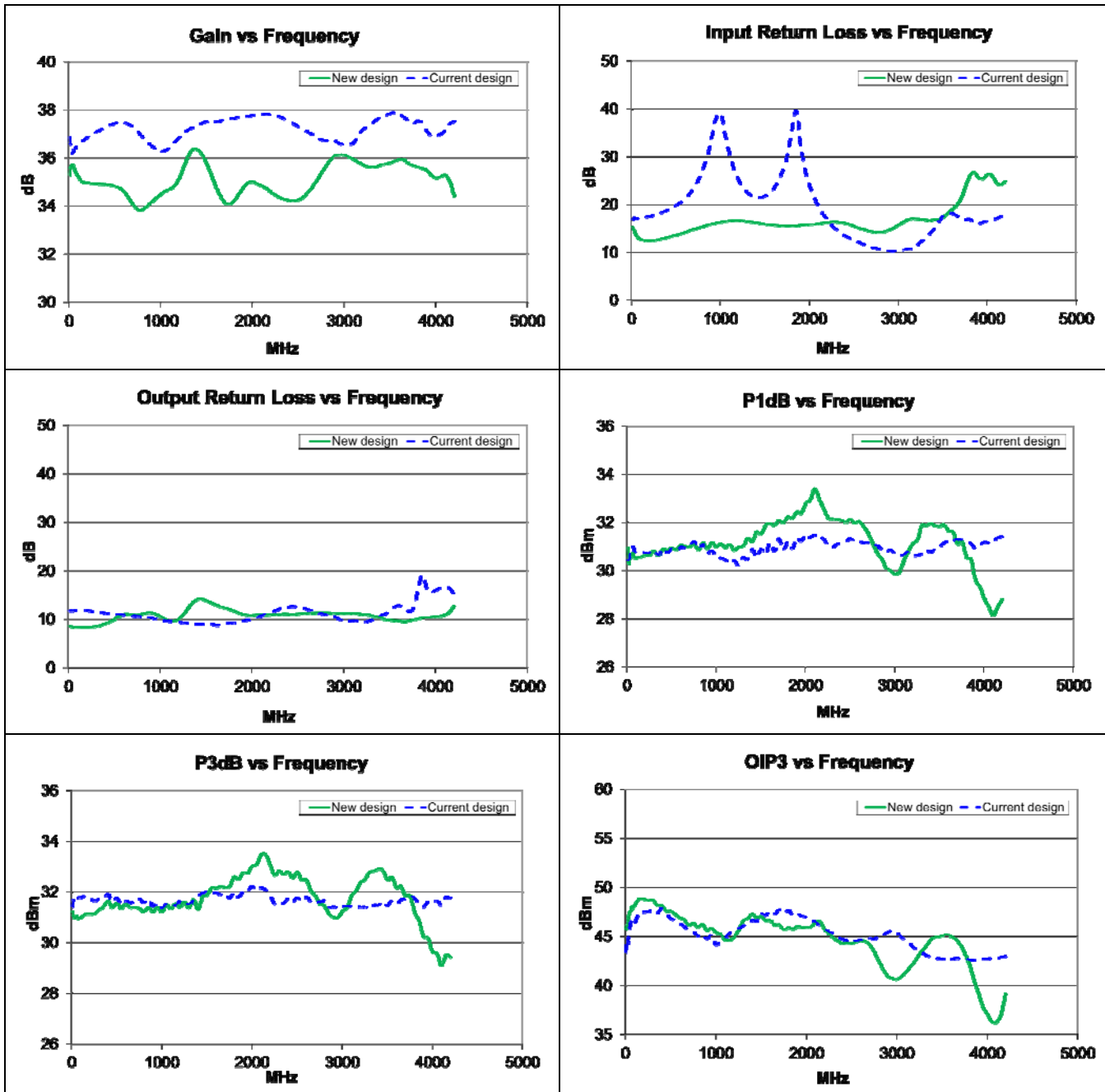
- a. Suitability within a particular system must be determined by and is solely the responsibility of the customer based on, among other things, electrical performance criteria, stimulus conditions, application, compatibility with other components and environmental conditions and stresses.

### 3) TYPICAL PERFORMANCE COMPARISON<sub>a</sub>: T<sub>AMB</sub>=25°C

Parameter	Freq (MHz)	Current design (ZHL-42W+)		New design (ZHL-42W+)	
		Min	Max	Min	Max
Gain (dB)	10-4200	36.22	37.85	33.85	37.98
Gain Flatness (dB)	10-4200	-----	+/-0.81	-----	+/-1.31
Input VSWR (:1)	10-4200	-----	1.89	-----	1.64
Output VSWR (:1)	10-4200	-----	2.15	-----	2.42
P1dB (dBm)	10-3700	30.43	-----	30.29	-----
	3700-4200	30.64	-----	28.14	-----
P3dB (dBm)	10-3700	31.36	-----	30.96	-----
	3700-4200	31.42	-----	29.09	-----
OIP3 (dBm)	10-4200	42.62	-----	35.78	-----
Noise Figure (dB)	10-4200	-----	12.07	-----	6.79
DC Voltage (V)	-----	-----	15	-----	15
Supply Current (A)	-----	-----	0.64	-----	0.81

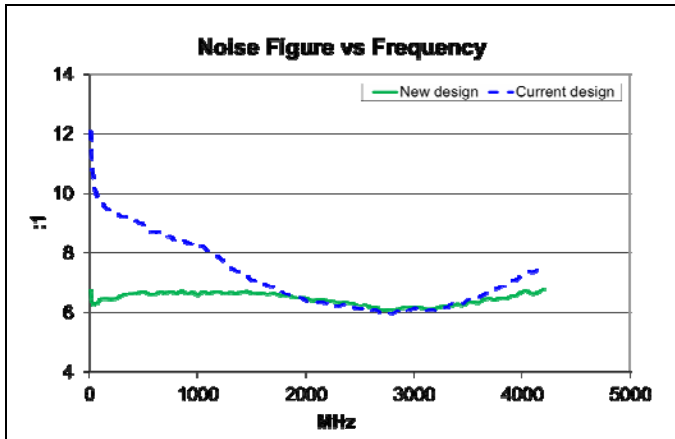
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## COMPARISON PERFORMANCE CURVES<sup>a</sup>: $T_{AMB}=25^{\circ}\text{C}$



a. Suitability within a particular system must be determined by and is solely the responsibility of the customer based on, among other things, electrical performance criteria, stimulus conditions, application, compatibility with other components and environmental conditions and stresses.

COMPARISON PERFORMANCE CURVES<sup>a</sup> (Continued):



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