

# NHF / HF100 Series

## ULTRA WIDE INPUT DC-DC CONVERTER



### FEATURES 24V, 48V Inputs / Single Output

- High Efficiency
- Industrial Standard Half Brick Size
- Six-Sided Shield (HF series)
- Fixed Frequency Operation
- Ultra Wide 4:1 Input Range
- Precision Thermal Protection (Accuracy  $\pm 3^{\circ}\text{C}$ )
- Short Circuit and Over Current Protection (Hiccup, Auto-Restart)
- Under Voltage Protection (UVLO) (Auto-Resart)
- Output Over Voltage Protection (Latch Up, Shut Down)
- Remote On/Off Control (CNT)
- Remote Sense Compensations to 10%  $V_{out}$
- Fully Isolated 1500Vdc
- 2 Years Warranty

### ELECTRICAL SPECIFICATIONS

<b>Input</b>	<ul style="list-style-type: none"> <li>• Input Range ..... DC 24V(10 or 12 - 36), 48V(18 or 22 - 75)</li> <li>• Efficiency ..... 85 - 89% Typ.</li> <li>• Remote On/Off Control ..... TTL Compatible             <ul style="list-style-type: none"> <li>On : 2.5 to 7 Vdc or Open</li> <li>Off : 0 to 0.8 Vdc</li> </ul> </li> </ul>
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<b>Output</b>	<ul style="list-style-type: none"> <li>• Output Voltages ..... 3.3V, 5V</li> <li>• Output Voltage Tolerance ..... <math>\pm 2.0\%</math></li> <li>• Line Regulation ..... <math>\pm 0.5\%</math> Max.</li> <li>• Load Regulation ..... <math>\pm 0.5\%</math> Max.</li> <li>• Ripple and Noise .....             <ul style="list-style-type: none"> <li>Bandwidth : 20MHz</li> <li>Magnitude : 1.5% of <math>V_{out}</math></li> </ul> </li> </ul>
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<b>Protection Circuit</b>	<ul style="list-style-type: none"> <li>• Short Circuit Over Current Protection ..... Hiccup, Auto-Restart at 115 - 140% of Rating</li> <li>• Under Voltage Protection ..... Auto-Restart</li> <li>• Output Over Voltage Protection ..... Latch Up (Shut Down) About 120% <math>V_{out}</math> Nom.</li> <li>• Thermal Shut Down ..... <math>100^{\circ}\text{C}</math>, Auto-Restart About <math>90^{\circ}\text{C}</math></li> </ul>
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<b>Electrically Isolated</b>	<ul style="list-style-type: none"> <li>• Isolation .....             <ul style="list-style-type: none"> <li>Input-Output / DC1500V</li> <li>Input-Case / DC1000V</li> <li>Output-Case / DC1000V</li> </ul> </li> <li>• Isolation Resistance ..... 100M</li> </ul>
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### ENVIRONMENTAL

• Operating Temperature Range	..... $-40^{\circ}\text{C}$ ~ $85^{\circ}\text{C}$
• Operating Humidity (Non-Condensing)	..... 20% ~ 90%RH
• Storage Temperature Range	..... $-40^{\circ}\text{C}$ ~ $105^{\circ}\text{C}$
• Storage Humidity (Non-Condensing)	..... 10% ~ 95%RH
• EMI / RFI	..... Six-Sided Shield
• MTBF (MIL-HDBK-217F)	..... $2.24 \times 10^4$ hrs

ORDERING INFORMATION

Input	Output	Maximum Power	Ripple&Noise Max.	Efficiency Typ.	Model Number
12 - 36V	3.3V@30.00A	99.00W	75mVp-p	88%	(N)HF100-Q24-3R3
10 - 36V	5.0V@20.00A	100.00W	75mVp-p	85%	(N)HF100-Q24-5
22 - 75V	3.3V@30.00A	99.00W	75mVp-p	89%	(N)HF100-Q48-3R3
18 - 75V	5.0V@20.00A	100.00W	75mVp-p	87%	(N)HF100-Q48-5

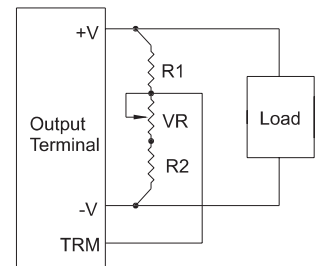
PIN ASSIGNMENTS

Single Output
1. +Vin
2. CNT
3. Case
4. - Vin
5. - Vout
6. - Sense
7. TRM
8. +Sense
9. +Vout

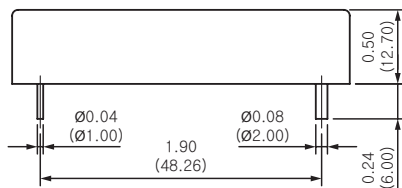
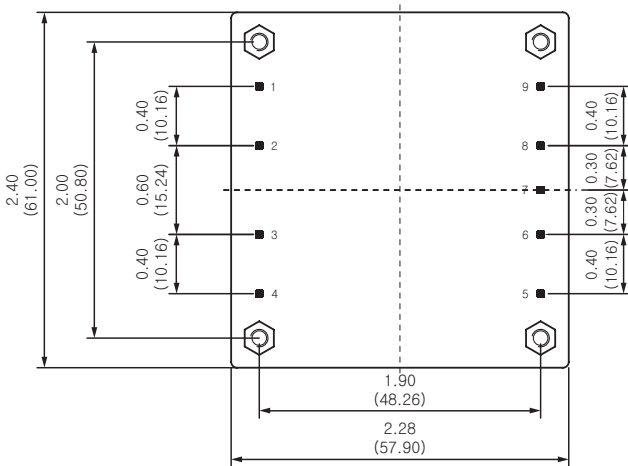
EXTERNAL PARTS

Model	Output Voltage	VR	R1	R2
HF100	3.3V	500Ω	1kΩ	560Ω
	5V	1kΩ	1kΩ	680Ω

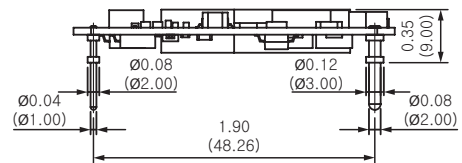
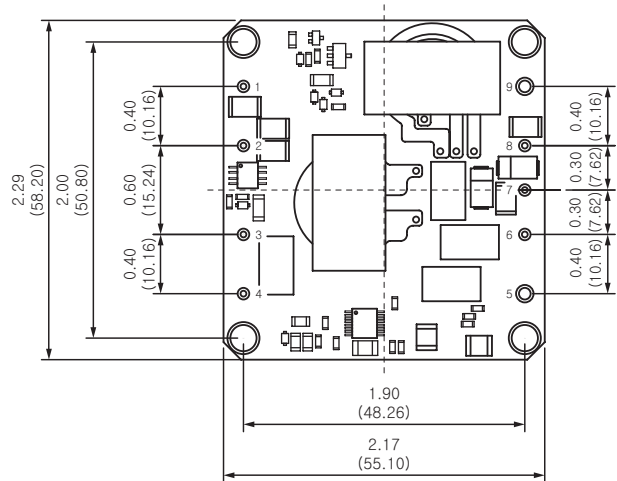
TRIM METHOD



DIMENSIONS



HF-series  
[ CASE TYPE ]



NHF-series  
[ OPEN TYPE ]

**NOTE** 1 All dimension are in inches (mm)  
 2 Weight  
 · Case Type : 180g or less  
 · Open Type : 48g or less  
 3 Case Material : Al