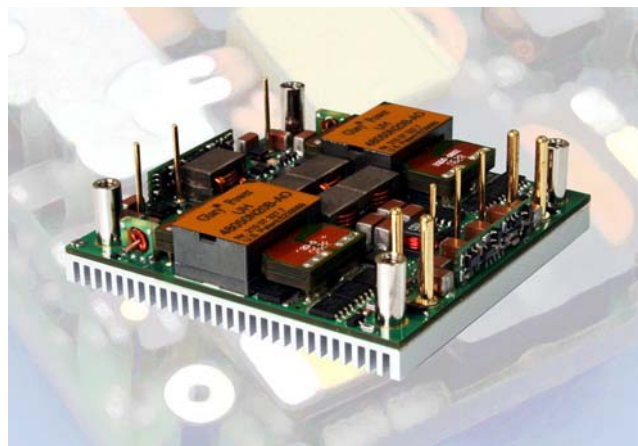


- High efficiency 93%@13V/62A
..... 94%@13V/50A
- High useable current
 - ... 13V/50A at Tc 60°C/400LFM (with 5.0mm Sink-Plate)
 - ... 13V/62A at Tc 58°C/450LFM (with 5.0mm Sink-Plate)
- Low profile footprint (1.0mm Metal-Plate)..... 2.42"×2.46" ×0.46"
- Operation temperature -40°C~110°C
- Sink-Plate (SP) flexible thermal managing capability (see drawing)

The UH48130ABCD-X62 provides up to 806W/62A outputs with industry standard half brick package. The efficient SR stage is combined with patented "Buck Reset" topology for reduce power loss to achieve 294W/in³ power density. The multi-layer single side circuit board design plus the patented Sink-Plate technology is able to enhance the thermal performance and improve its reliability. Modules are designed for Telecom, Servers, Networking equipments and other applications that use a 48V (36~75V) input bus.



Part Number *	Maximum Input		Maximum Output		Efficiency
UH48130ABCD- X62	36V~75V	866W	13V/62A	806W	93%

Part Number *	Maximum Input		Maximum Output		Efficiency

* Options for **UH48130ABCD-X62** are as follows:

- A** (Enable Logic): **P**: Positive **N**: Negative
B (Pin Length): **0**: 0.12" **1**: 0.16" **2**: 0.20" **3**: 0.24"
C (Standoff Height): **0**: 0.02" **1**: 0.08" **2**: 0.16"
D (Base-Plate/Module Thickness): **M**: 1.0mm Metal Plate/0.44"
A: 3.0mm Sink-Plate/0.55" **B**: 5.0mm Sink-Plate/0.60"
X (Current Share): **N**: Without current share
P: Current share connect in Primary **S**: Current share connect in Secondary
EF (Output): **62** for output current rating 62Amps



Example: **UH48130P20M-N62** is a **UH** series half brick 48V to 13V/62A dc/dc converter with positive control logic, 0.20" pin length, 0.02" of standoff height and 1.0mm metal plate. It features no current share function and the total height is 0.02"+0.44"=0.46"

ABSOLUTE MAXIMUM RATINGS		
Temperature	Operation	-40°C to +110°C
	Storage	-55°C to +125°C
Input Voltage Range	Operation:	
	48V Models	-0.5V to +80Vdc
Isolation Voltage	Transient (100mS):	
	48V Models	100Vdc Maximum
	Input to Output	2.0KVdc
	Input to Case	1.0KVdc
Remote Control Voltage	Output to Case	1.0KVdc
		-0.5V to +12Vdc

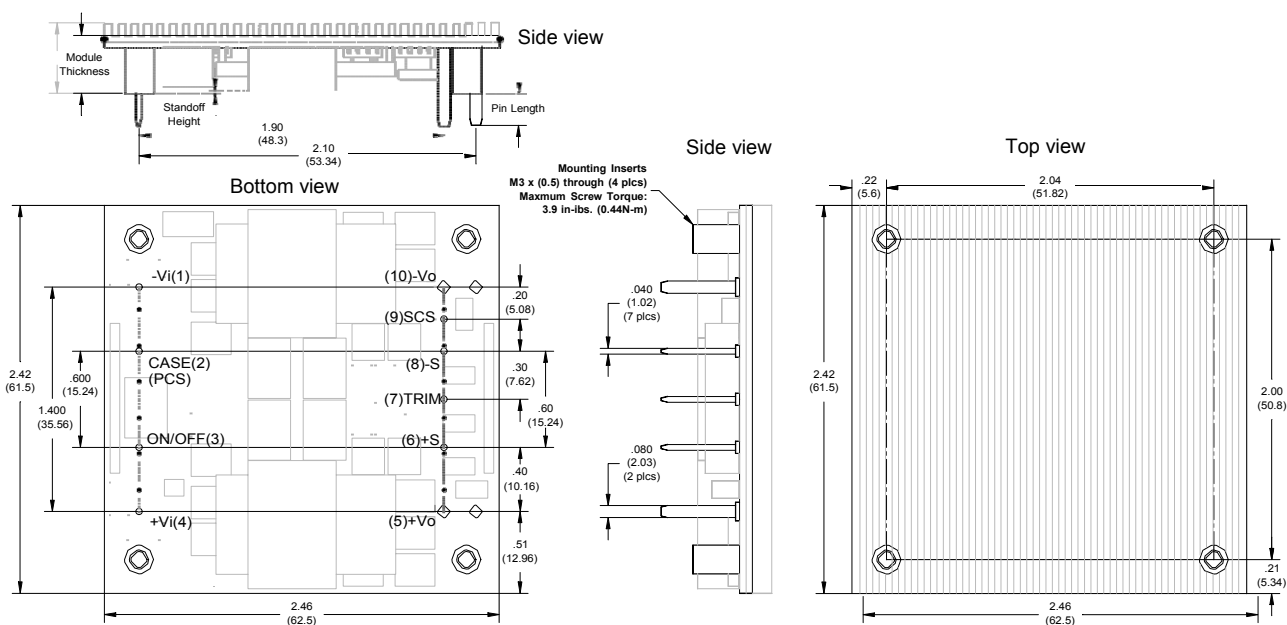
GENERAL SPECIFICATION		
Conversion Efficiency	Typical	See table
Switching Frequency	Typical	330KHz
MTBF	Bellcore	2.36×10 ⁶ hrs @GB/25°C.
	TR-332 issue 6	1.04×10 ⁶ hrs @GB/50°C.
OTP	Internal	110°C (Tc)
Weight	1mm Metal Plate	87g
	3mm Sink Plate	94g

CONTROL FUNCTIONS		
Remote Control	Logic High	+3.0V to +6.5V
	Logic Low	0V to +1.0V
Input Current of Remote Control Pin		-0.5mA ~ +1.5mA

INPUT SPECIFICATIONS		
Operation Voltage Range	48V Models	+36V to +75Vdc
Reflected Ripple Current	L _{EXT} = 20uH	30mA Max
Power ON Voltage Ranges	48V Models	+34.5V to +35.8Vdc
Power OFF Voltage Ranges	48V Models	+33.0V to +34.8Vdc
Off State Input Current	V _{NOM}	6mA Max
Latch-State Input Current	V _{NOM}	8mA Max
Input Capacitance		48.0uF Max
	48V Models	15.0uF Max

Output Voltage	V _{NOM}	50%~75% Load	-50dB
Input Ripple Rejection (<1KHz)	V _{NOM} , Full Load	6%Vo/500uS	
Step Load (2.5A/uS)			
Start-Up Delay Time			50mS/250mS

Important Note: General specifications and the performances are related to standard series only, no special customer specification display here except requested items.



Module Mechanical Data

Connection:

Designation	Function Description	Pin #
-Vi	Negative input	1
CASE (PCS)	Base plate (option: primary current share)	2
ON/OFF	Remote control. To turn-on and turn-off output.	3
+Vi	Positive input	4
+Vo	Positive output	5
+S	Positive remote sense	6
TRIM	Output voltage adjust	7
-S	Negative remote sense	8
SCS	Secondary current share bus	9
-Vo	Negative output	10

Dimensions: inches (mm)

Tolerances: .xx±0.02 (.x±0.5)

.xxx±0.01 (.x±0.25)

Weight: 87g / 1.0mm Metal Plate

94g / 3.0mm Sink-Plate

Base plate: Aluminum alloy with anode oxide

Mounting inserts: Iron alloy with Nickel plated
[Maximum Torque: 3.9 in-ibs. (0.44N-m)]

Pin material: Copper alloy or Brass

Pin plating: Golden over Nickel

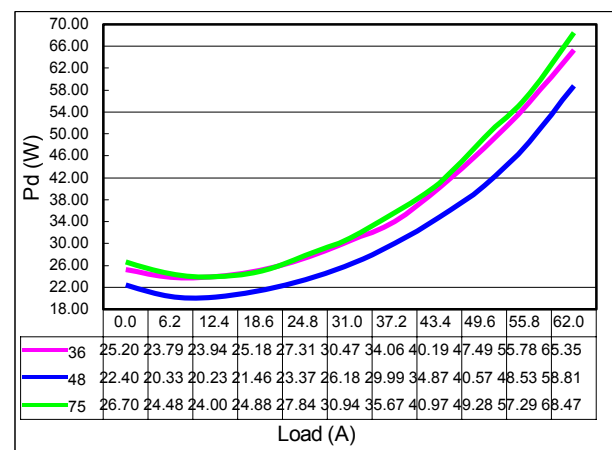
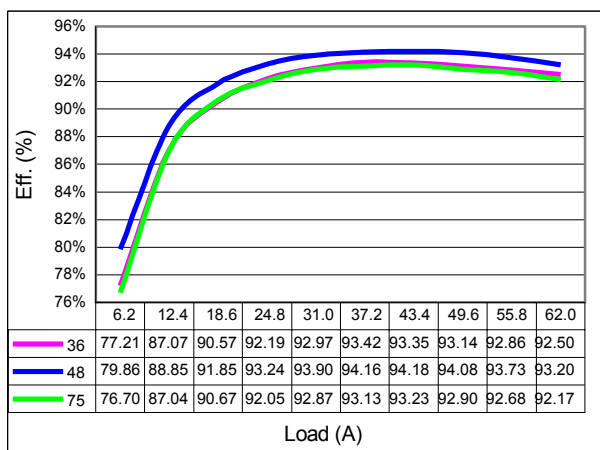
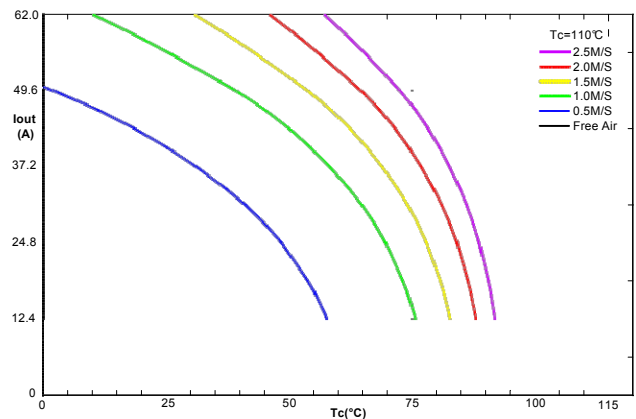
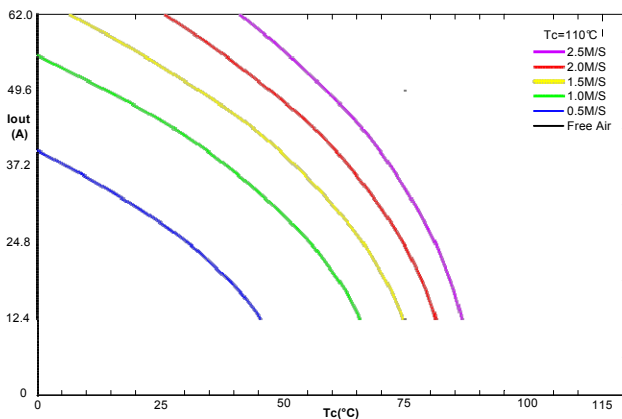
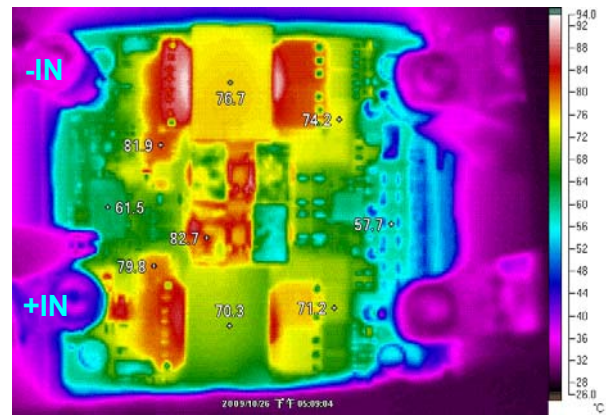
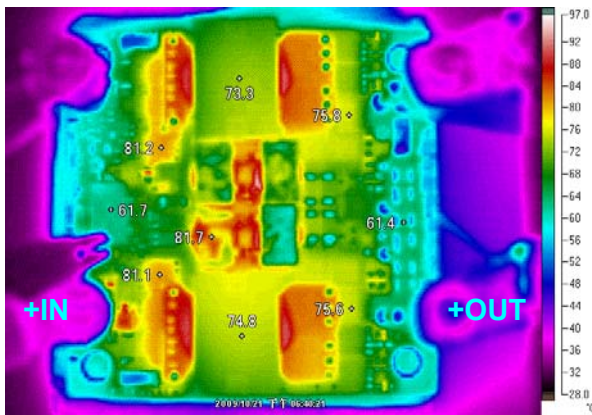
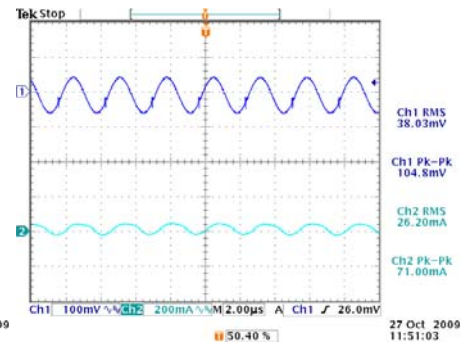
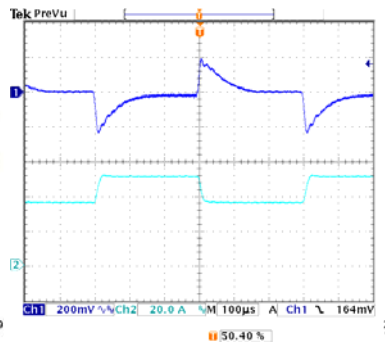
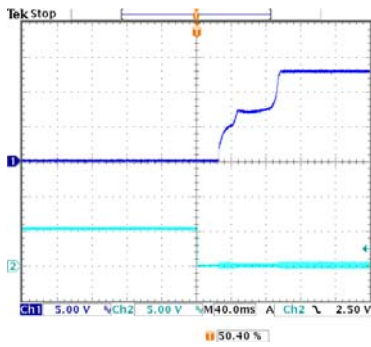
Referenced EMC Circuit:

The tested curve and referenced EMC circuit.

TBD

TBD

Important Note: General specifications and the performances related to standard series only, no special customer specification display here except requested items.



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Reliability Prediction Result of UH48130P20M-N62

Base Plate Temperature (° C): 25

Input Range: 36~75V

Output Power: 13V / 62A

The MTBF, calculated in accordance with the Parts Count Method of Bellcore TR-332 issue 6, December 1997. The General Case is used for calculations.

Parts Failure Rates

Resistors :	12.01
Capacitors :	42.45
Diodes :	25.36
BiopolarTransistors :	7.31
Field Effect Transistors :	193.07
Optocouplers :	7.31
Chokes :	29.18
Transformers :	9.92
Integreated Circuits :	91.04
Zener Diode:	3.36
Thermistor:	2.21
Total :	423.23

$$\begin{aligned}\lambda_{\text{Unit}} &= \pi_E * \sum \lambda_p \\ &= \mathbf{423.23 \text{ Failures / } 10^9 \text{ Hours}} \\ \mathbf{MTBF} &= \mathbf{2,362,763 \text{ Hours}} \\ &= \mathbf{269.722 \text{ Years}}\end{aligned}$$

The detail MTBF calculation of UH series dc/dc converters are base on specified base plate temperature with component temperature rise listed as following pages.

Reliability Prediction Result of UH48130P20M-N62

Base Plate Temperature (° C): 50

Input Range: 36~75V

Output Power: 13V / 62A

The MTBF, calculated in accordance with the Parts Count Method of Bellcore TR-332 issue 6, December 1997. The General Case is used for calculations.

Parts Failure Rates

Resistors :	18.87
Capacitors :	49.36
Diodes :	49.21
BiopolarTransistors :	60.28
Field Effect Transistors :	367.04
Optocouplers :	60.28
Chokes :	45.22
Transformers :	15.14
Integreated Circuits :	277.09
Zener Diode:	5.28
Thermistor:	7.09
Total :	954.86

$$\begin{aligned}\lambda_{\text{Unit}} &= \pi_E * \sum \lambda_p \\ &= \mathbf{954.86 \text{ Failures / } 10^9 \text{ Hours}} \\ \mathbf{MTBF} &= \mathbf{1,047,271 \text{ Hours}} \\ &= \mathbf{119.551 \text{ Years}}\end{aligned}$$

The detail MTBF calculation of UH series dc/dc converters are base on specified base plate temperature with component temperature rise listed as following pages.

Reliability Prediction Result of UH48130P20M-N62

Base Plate Temperature (° C): 75

Input Range: 36~75V

Output Power: 13V / 62A

The MTBF, calculated in accordance with the Parts Count Method of Bellcore TR-332 issue 6, December 1997. The General Case is used for calculations.

Parts Failure Rates

Resistors :	27.79
Capacitors :	56.15
Diodes :	86.82
BiopolarTransistors :	366.94
Field Effect Transistors :	637.07
Optocouplers :	366.94
Chokes :	65.84
Transformers :	21.78
Integreated Circuits :	734.60
Zener Diode:	7.77
Thermistor:	19.31
Total :	2391.04

$$\begin{aligned}\lambda_{\text{Unit}} &= \pi_E * \sum \lambda_p \\ &= \mathbf{2391.04 \text{ Failures / } 10^9 \text{ Hours}} \\ \mathbf{MTBF} &= \mathbf{418,229 \text{ Hours}} \\ &= \mathbf{47.743 \text{ Years}}\end{aligned}$$

The detail MTBF calculation of UH series dc/dc converters are base on specified base plate temperature with component temperature rise listed as following pages.