

This module provides 3.3V/120A output with 90% efficiency is designed for data communication, computer servers, enterprise networking equipment and other applications that use a 48V (36~75V) input bus.

- High efficiency ..... 90% @ 3.3V/50A  
..... 89% @ 3.3V/60A
- High useable current (with 5.0mm Sink-Plate)  
..... 3.3V/60A at 75°C 200LFM  
..... 3.3V/50A at 85°C 200LFM
- High power density ..... 100W/in<sup>3</sup>
- Low profile ..... 0.36"(9.1mm)
- Sink-Plate (SP) flexible thermal managing capability (see drawing)

## PRELIMINARY DATA SHEET

Part Number *	Input	Output	Efficiency
UH48120ABCD-EFG	36V~75V 543W	12V/42A 504W	92%
UH48050ABCD-EFG	36V~75V 543W	5.0V/100A 500W	91%
UH48033ABCD-EFG	36V~75V 435W	3.3V/120A 396W	90%

Part Number *	Input	Output	Efficiency

\* Options for UH48033ASBCD-120 are as follows:

- A** (Enable Logic): "P" for Positive or "N" for Negative.
- B** (Pin Dimension): "0" for pin length 0.110", "1" for pin length 0.145" "2" for pin length 0.180", "3" for pin length 0.250"
- C** (Double Pin): "1" for single pin "2" for double pin
- D** (Base Plate): "M" 1.2mm Metal Plate "A" 3.0mm Sink-Plate "B" 5.0mm Sink-Plate
- EFG** (Output): 000~999 for Output Current Rating

Example: UH48033N22M-120 is an "Ultra" series half brick size 48V to 3.3V/120A dc/dc converter with options of negative control logic and 0.180" pin length, double output pins and 1.2 mm metal plate.

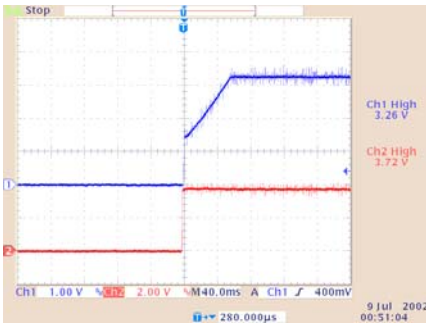
ABSOLUTE MAXIMUM RATINGS		
Temperature	Operation	-40°C to +120°C
	Storage	-55°C to +125°C
Input Voltage Range	Operation:	
	24V Models	-0.5V to +40Vdc
	48V Models	-0.5V to +80Vdc
	Transient (100mS):	
24V Models	50V Maximum	
48V Models	100V Maximum	
Isolation Voltage	Input to Output	2.0KV Minimum
	Input to Case	1.0KV Minimum
	Output to Case	1.0KV Minimum
Remote Control Voltage		-0.5V to +12Vdc

INPUT SPECIFICATIONS		
Operation Voltage Range	24V Models	+18V to +36Vdc
	48V Models	+36V to +75Vdc
Reflected Ripple Current	L <sub>EXT</sub> = 10uH	20mA Max
Power ON Voltage Ranges	24V Models	+17.5V to +17.9Vdc
	48V Models	+35.0V to +35.8Vdc
Power OFF Voltage Ranges	24V Models	+17.0V to +17.4Vdc
	48V Models	+34.0V to +34.8Vdc
Off State Input Current	V <sub>NOM</sub>	6mA Max
Latch-State Input Current	V <sub>NOM</sub>	8mA Max
Input Capacitance	24V Models	33.0uF Max
	48V Models	6.8uF Max

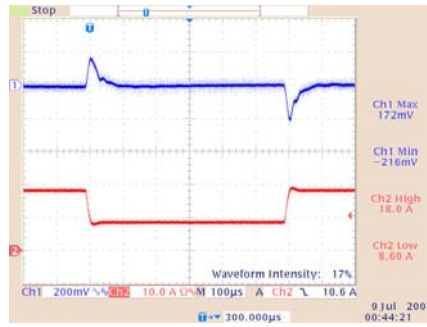
GENERAL SPECIFICATIONS		
Conversion Efficiency	Typical	See table
Switching Frequency	Typical	300KHz
MTBF	Bellcore	3.45×10 <sup>6</sup> hrs @GB.
OTP	Internal	120°C
Weight		1.9 oz
Size		2.30"×2.40"×0.36"

OUTPUT SPECIFICATIONS		
Voltage Accuracy	Typical	±1%
Line Regulation	Full Input Range	±0.2%
Load Regulation	10%~100%	±0.2%
Temperature Drift	-40°C ~100°C	±0.02%/°C
Output Tolerance Band	All Conditions	±3%
Ripple & Noise (20MHz)	Peak-Peak (RMS)	3% (1%) V <sub>o</sub>
Over Voltage Protection	V <sub>NOM</sub> , 10% Load	115~130 %V <sub>o</sub>
Output Current Limits	V <sub>NOM</sub>	105%~125%
Voltage Trim	V <sub>NOM</sub> , 10% Load	±10%
Input Ripple Rejection (<1KHz)	V <sub>NOM</sub> , Full Load	-50dB
Step Load (2.5A/uS)	50%~75% Load	300mV/300uS
Start-Up Delay Time	V <sub>NOM</sub> , Full Load	20mS/250mS

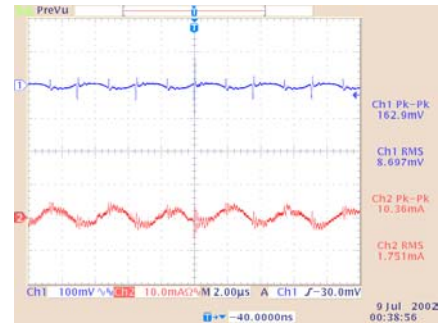
CONTROL FUNCTIONS		
Remote Control	Logic High	+3.0V to +6.5V
	Logic Low	0V to +1.0V
Input Current of Remote Control Pin		-0.5mA ~ +1.5mA



Start-Up Waveform  
(VIN: 50V, Load: 100A)



Transient Response  
(VIN: 50V, Load: 30.0A/15.0A@2.5A/μs)



Output Ripple/Noise and Input Ripple Current  
(VIN: 50V, Load: 100A, LIN=10uH)

To be provide in next version

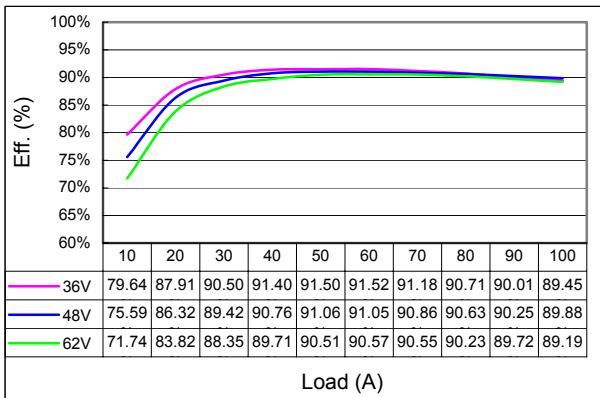
Thermal Plot with 55°C-200LFM Airflow (Direction: N to S)

To be provide in next version

Thermal Plot with 55°C-200LFM Airflow (Direction: E to W)

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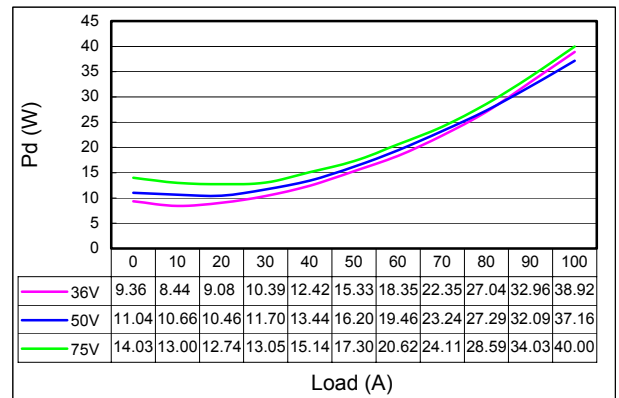
Derating Plot of UH48033-120 With 3.0mm Sink-Plate



Efficiency Plot of UH48033-100

To be provide in next version

Derating Plot of UH48033-120 With 5.0mm Sink-Plate



Power Loss Plot of UH48S033-100