

This module provides 12V/42A output with 92% efficiency is designed for data communication, computer servers, enterprise networking equipment and other applications that use a 48V (36~75V) input bus.

- High efficiency 93% @ 12V/30A
..... 93% @ 12V/40A
- High useable current (with 5.0mm Sink-Plate)
..... 12V/33A at 70°C 300LFM
..... 12V/27A at 70°C 200LFM
- High power density 217W/in³
- Low profile 0.43" (10.9mm)
- Open frame with Sink-plate options

PRELIMINARY DATA SHEET

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

Part Number *	Input	Output	Efficiency

* Options for UH48120ABCD-EF are as follows:

- A** (Enable Logic): **P**: Positive **N**: Negative
- B** (Pin Dimension): **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/0.43" **A**: 3.0mm Sink-Plate/0.51" **B**: 5.0mm Sink-Plate/0.59"
- EF** (Output): **00** to **C0** for output current rating

Example: **UH48120N20B-42** is an "Ultra" series half brick size 48V to 12V/42A dc/dc converter with options of negative control logic and 0.20" pin length, 0.02" standoff and 5.0 mm Sink-Plate. The total height is 0.02"+0.59"=0.61".

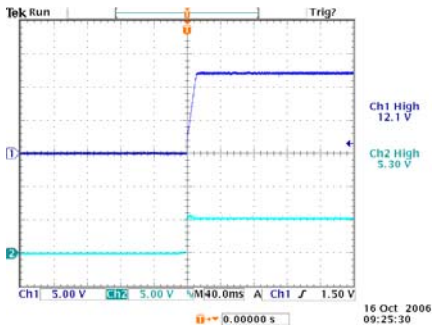
ABSOLUTE MAXIMUM RATINGS		
Temperature	Operation	-40°C to +120°C
	Storage	-55°C to +125°C
Input Voltage Range	Operation:	
	24V Models	-0.5V to +40Vdc
	48V Models	-0.5V to +80Vdc
	Transient (100mS):	
24V Models	50V Maximum	
48V Models	100V Maximum	
Isolation Voltage	Input to Output	2.0KV Minimum
	Input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

GENERAL SPECIFICATIONS		
Conversion Efficiency	Typical	See table
Switching Frequency	Typical	200KHz
MTBF	Bellcore	3.45×10 ⁶ hrs @GB.
OTP	Internal	120°C
Weight		2.3 oz
Size		2.30"×2.40"×0.36"

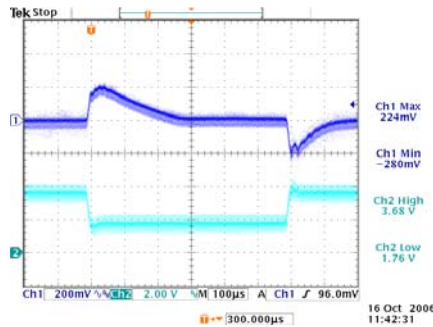
CONTROL FUNCTIONS		
Remote Control	Logic High	+3.0V to +6.5V
	Logic Low	0V to +1.0V
Input Current of Remote Control Pin		-0.5mA ~ +1.5mA

INPUT SPECIFICATIONS		
Operation Voltage Range	24V Models	+18V to +36Vdc
	48V Models	+36V to +75Vdc
Reflected Ripple Current	L _{EXT} = 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 _{NOM}	6mA Max
Latch-State Input Current	V _{NOM}	8mA Max
Input Capacitance	24V Models	33.0uF Max
	48V Models	6.8uF Max

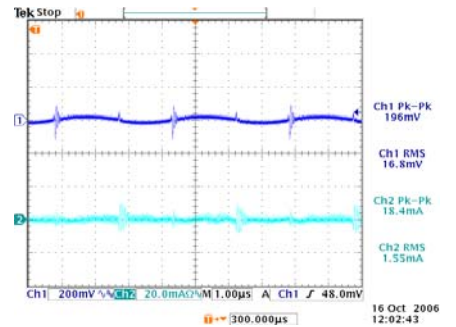
OUTPUT SPECIFICATIONS		
Voltage Accuracy	Typical	±1%
Line Regulation	Full Input Range	±0.2%
Load Regulation	10%~100%	±0.2%
Temperature Drift	-40°C ~100°C	±0.02%/°C
Output Tolerance Band	All Conditions	±3%
Ripple & Noise (20MHz)	Peak-Peak (RMS)	3% (1%) V _O
Over Voltage Protection	V _{NOM} , 10% Load	115~130 %V _O
Output Current Limits	V _{NOM}	105%~125%
Voltage Trim	V _{NOM} , 10% Load	±10%
Input Ripple Rejection (<1KHz)	V _{NOM} , Full Load	-50dB
Step Load (2.5A/uS)	50%~75% Load	±6%V _O /300uS
Start-Up Delay Time	V _{NOM} , Full Load	20mS/250mS



Start-Up Waveform
(VIN: 50V, Load: 40A)



Transient Response
(VIN: 50V, Load: 20.0A/10.0A@2.5A/μs)

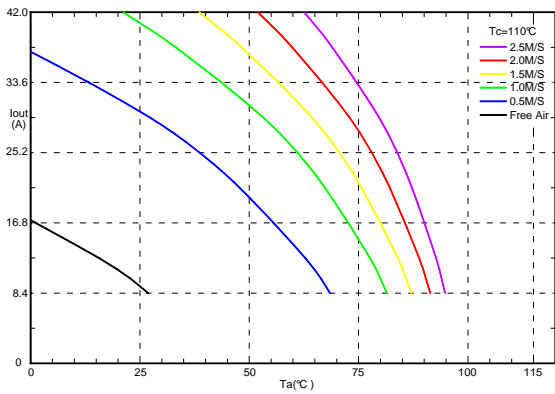


Output Ripple/Noise and Input Ripple Current
(VIN: 50V, Load: 40A, LIN=10uH)

To be provide in next version

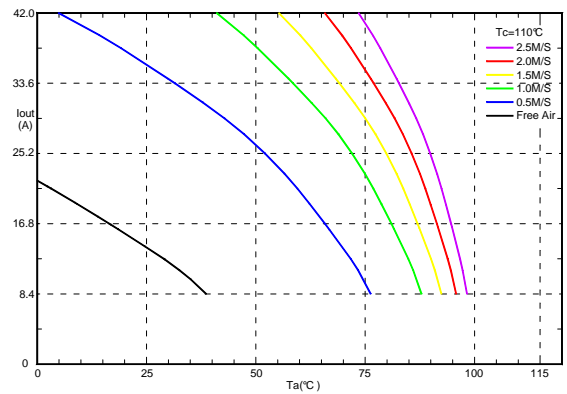
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Thermal Plot with 55°C-200LFM Airflow (Direction: N to S)

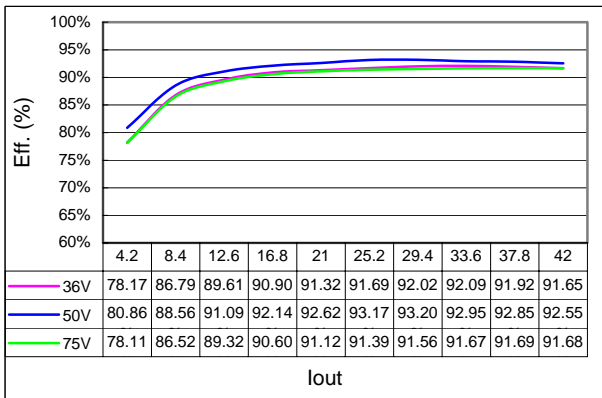


Derating Plot With 3.0mm Sink-Plate

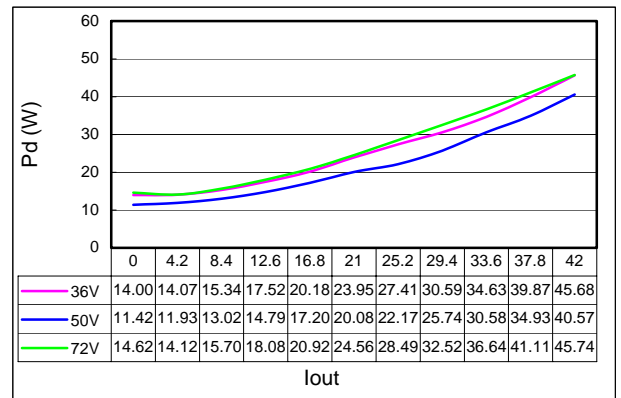
Thermal Plot with 55°C-200LFM Airflow (Direction: E to W)



Derating Plot With 5.0mm Sink-Plate



Efficiency Plot



Power Loss Plot

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