



IDEALPOWER

experts in power conversion

Ideal Power Ltd Product Specification Document

Description	Int. PSU - DC/DC
Model Number	27U64_
Revision	A0
Notes	Series

Ideal Power Ltd

Ideal Power, Ideal House, Tree Beech Enterprise Park, Gunn, Barnstaple, Devon, EX32 7NZ, England, UK

Tel: +44 (0) 845 260 3400

Email: sales@idealpower.co.uk

Web: www.idealpower.co.uk

Glary Power Technology

U64 Series Nano Brick 40W/8A



The ultra-compact high efficiency **U64** Nano-brick provides up to 40W/8A output with 0.7"×0.7" footprint, which is designed with the efficiently patented "Coupled-Inductor SR" topology. The DOSA compatible pin assignments and 60% more of available power are designed to help system designers with up to 50% of space saving for the power circuit area in the majority of the current application boards by simply a drop in replacement for system upgrade.

Preliminary Data Sheet

PART NUMBER SYSTEM

U64	48	050	a	b	c	d	-	08	XX	X
Series Name	Input Voltage	Output Voltage	Enable Logic	Pin Dimension	Standoff Height	Base-Plate		Output Current	Suffix	Version
U64	48=36V~75V	Unit: 0.1V Increments 120=12V 050=5V	P: Positive N: Negative	0 : 0.12" 1 : 0.16" 2 : 0.20"	0 : 0.02"	O : Open frame standard type	-	00~08 : For output current rating		For marketing purpose only

MODEL LIST (Contact to factory for special input / output)

Part Number *	Maximum Input	Maximum Output	Efficiency	Part Number *	Maximum Input	Maximum Output	Efficiency
U6448120abcd-03XXX	36V~75V	44W	12.0V/3.3A	40W	93%		
U6448050abcd-08XXX	36V~75V	45W	5.0V/8A	40W	91%		
U6448033abcd-10XXX	36V~75V	37W	3.3V/8A	27W	89%		
N6448025abcd-10XXX	36V~75V	29W	2.5V/8A	25W	87%		

REFERENCED THERMAL IMAGES

To be updated in next version	To be updated in next version
U6448033abcO-08 (I _o = ?A@50°C/100LFM)	U6448033abcO-08 (I _o = ?A@55°C/200LFM)

SPECIFICATIONS

Absolute Maximum Ratings

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

General Parameters

Conversion Efficiency	Typical	See table
Switching Frequency	Typical	400KHz
MTBF	Bellcore TR-332 issue 6	7.6×10 ⁶ hrs @GB/25°C (U6448050abcd-08XXX)
OTP	Internal	110°C(Tc) ±5°C
Weight		6g

Control Functions

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

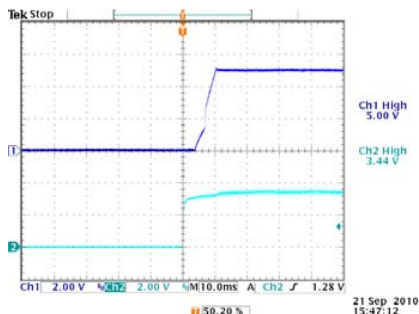
Input

Operation Voltage Range	48V Models	+36V to +75Vdc
Reflected Ripple Current	L _{EXT} = 10uH, C _{EXT} = 47uF	30mA rms/100mAp-p
Power ON Voltage Ranges	48V Models	+34.0V to +36.0Vdc
Power OFF Voltage Ranges	48V Models	+31.2V to +33.2Vdc
Off State Input Current	V _{NOM}	3mA Max
Latch-State Input Current	V _{NOM}	8mA Max
Input Capacitance	48V Models	6.0uF Max

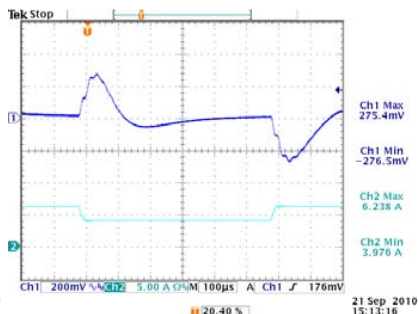
Output

Voltage Accuracy	Typical	±1.0%
Line Regulation	Full Input Range	±0.2%
Load Regulation	10%~100%	±0.2%
Temperature Drift	-40°C ~100°C	±0.03%/°C
Output Tolerance Band	All Conditions	±4%
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}	108%~125%
Voltage Trim	V _{NOM} , 10% Load	±10%
Input Ripple Rejection (<1KHz)	V _{NOM} , Full Load	-50dB
Step Load (2.5A/μS)	50%~75% Load	±6%Vo/500μS
Start-Up Delay Time	V _{NOM} , Full Load	20mS/250mS

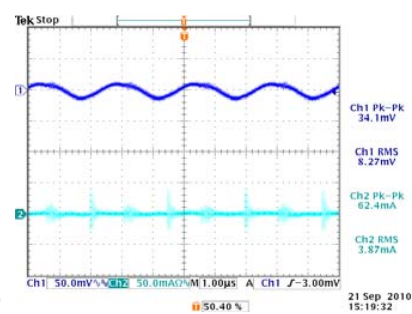
TYPICAL WAVES AND CURVES



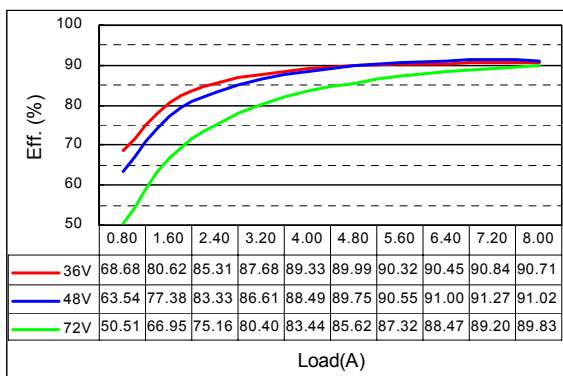
Start-up waveform of U6448050abcd-08XXX (VIN: 48V, Load: 8A)



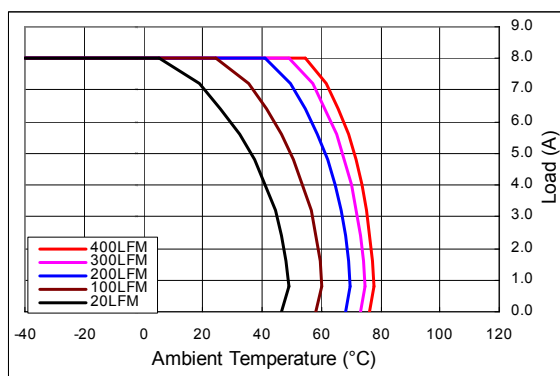
Transient response of U6448050abcd-08XXX (VIN: 48V, Load: 6.0A/4.0A@2.5A/μS)



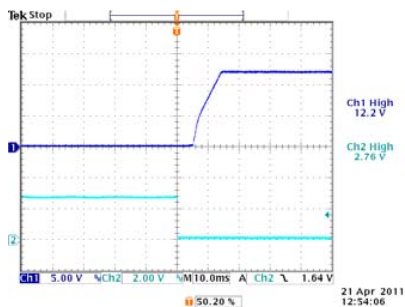
Input/Output ripples of U6448050abcd-08XXX (VIN: 48V, Load: 8A, LIN=10uH, CIN=47uF)



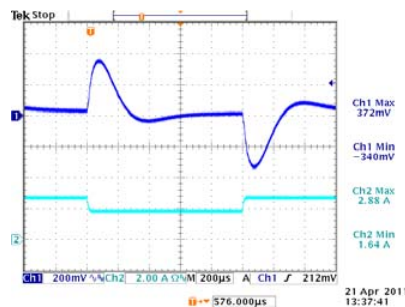
Efficiency plot of U6448050abcd-08XXX



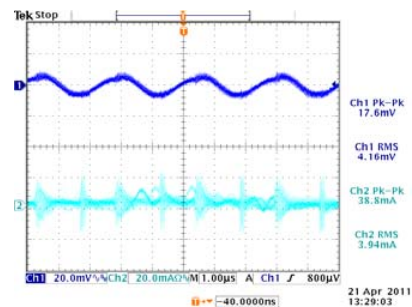
Derating curves of U6448050abcd-08XXX for T_c = 110°C



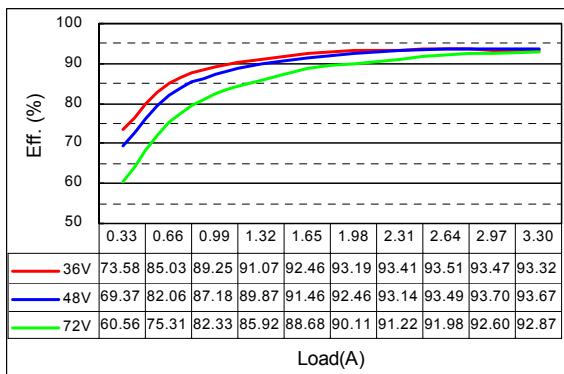
Start-up waveform of U6448120N000-03XXX (VIN: 48V, Load: 3.3A)



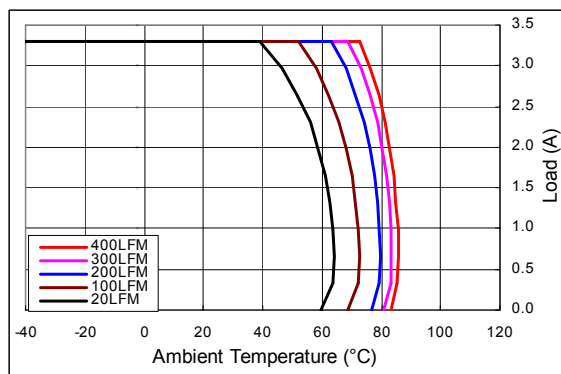
Transient response of U6448120N000-04XXX (VIN: 48V, Load: 2.5A/1.65A@2.5A/μS)



Input/Output ripples of U6448120N000-04XXX (VIN: 48V, Load: 3.3A, LIN=10uH)

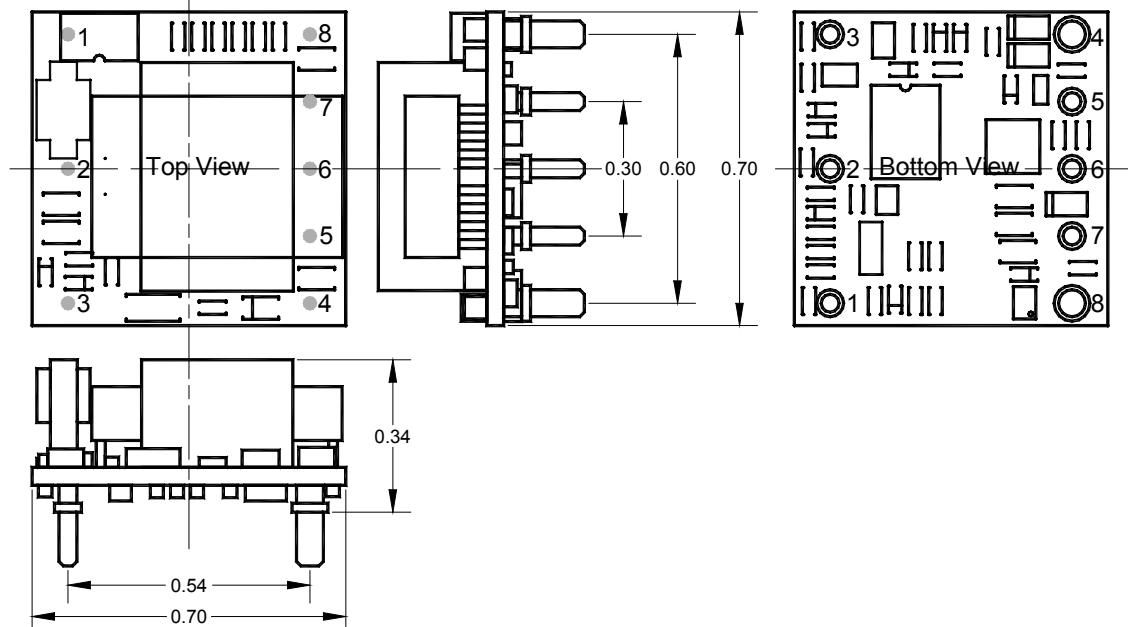


Efficiency plot of U6448120N000-03XXX



Derating curves of U6448120N000-03XXX for T_c = 110°C

OPEN FRAME PACKAGE



Nano-Brick U64 series

Dimensions and Pin Connections

Designation	Function Description	Pin #
+Vi	Positive input	1
Remote	ON/OFF control	2
-Vi	Negative input	3
-Vo	Negative output	4
-S	Negative remote sense	5
TRIM	Output voltage adjust	6
+S	Positive remote sense	7
+Vo	Positive output	8

Dimensions: inches (mm)

Tolerances: .xx±0.02 (.x±0.5)

.xxx±0.01 (.x±0.25)

Mass: 6g / Nano brick

Base plate: None

Pin material: Copper alloy or Brass

Pin plating: Golden over Nickel

NOTE:

1. It is recommended that the input should be protected by fuses or other protection devices.
2. All specifications are typical at nominal input, full load and 25°C unless otherwise noted.
3. Specifications are subject to change without notice.
4. Printed or downloaded datasheets are not subject to Glary document control.
5. Product labels shown, including safety agency certificates, may vary based on the date of manufacture.
6. Information provided in this documentation is for ordering purposes only.
7. This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications, which necessitate specific safety and regulatory standards other than the ones listed in this datasheet.