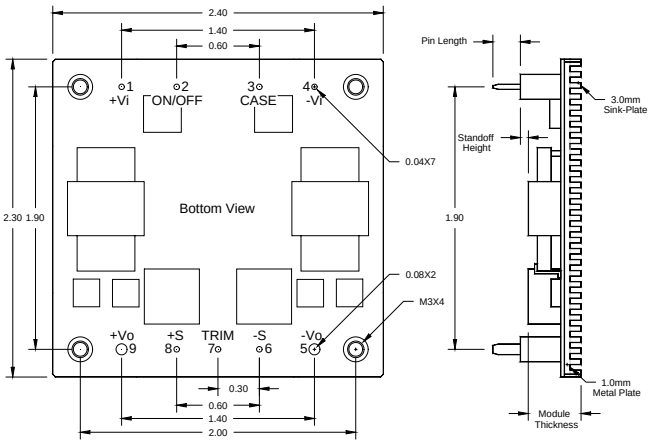
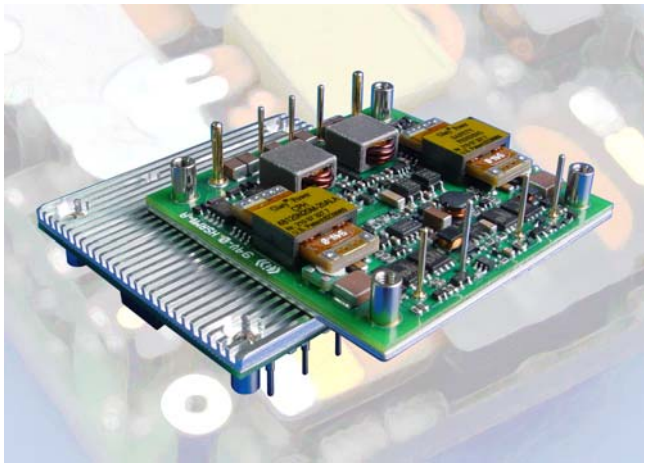
Glary Power Technology

CPH 350W/100A
1/2 Brick DC/DC Converters





The CPH series provides up to 350W/100A outputs with industry standard half brick package. The efficient SR stage combining with patented "Buck Reset" topology reduce power loss to achieve 162W/in^3 power density, the single component side board designed with Sink-Plate technology eliminate the hot spot gives converter better thermal performance. Modules are designed for Telecom, Servers, Networking equipments and other applications that use a 24V or 48V (36~75V) input bus.

- High efficiency ..... 90%@5.0V/70A
  ..... 89%@3.3V/70A
  ..... 85%@1.8V/100A
- High useable current (with 5.0mm sink-Plate)
  ..... 5.0V/70A at 40°C 200LFM
  ..... 3.3V/70A at 60°C 200LFM
  ..... 1.8V/100A at 60°C 200LFM
- Sink-Plate (SP) flexible thermal managing capability (see drawing)

Part Number *	Maximum Input		Maximum Output		Efficiency
CPH48120ABCD-EFG	36V~75V	390W	12V/29A	348W	90%
CPH48050ABCD-EFG	36V~75V	390W	5.0V/70A	350W	90%
CPH48033ABCD-EFG	36V~75V	260W	3.3V/70A	231W	89%
CPH48025ABCD-EFG	36V~75V	230W	2.5V/80A	200W	88%
CPH48018ABCD-EFG	36V~75V	215W	1.8V/100A	180W	85%
CPH48015ABCD-EFG	36V~75V	185W	1.5V/100A	150W	84%

Part Number *	Maximum Input		Maximum Output		Efficiency
CPH24120ABCD-EFG	18V~36V	334W	12V/25A	300W	90%
CPH24050ABCD-EFG	18V~36V	395W	5.0V/70A	350W	89%
CPH24033ABCD-EFG	18V~36V	265W	3.3V/70A	231W	88%
CPH24025ABCD-EFG	18V~36V	235W	2.5V/80A	200W	87%
CPH24018ABCD-EFG	18V~36V	220W	1.8V/100A	180W	84%
CPH24015ABCD-EFG	18V~36V	190W	1.5V/100A	150W	83%

* Options for **CPH Series** are listed 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/0.34" **A**: 3.0mm Sink-Plate/0.42" **B**: 5.0mm Sink-Plate/0.50"
EFG (Output): **000** to **100** for output current rating

E219417

Example: **CPH48033N00A-070** is a ***CPH*** series half brick 48V to 3.3V/70A dc/dc converter with negative control logic, 0.12" pin length, 0.02" of standoff height and 3.0mm Sink-Plate. The total height of this module is 0.02"+0.42"=0.44"

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	300KHz
MTBF	Bellcore	3.45×10^6 hrs @GB.
OTP	Internal	115°C
Weight		1.9 oz
Size		2.30"×2.40"×0.36"

CONTROL FUNCTIONS

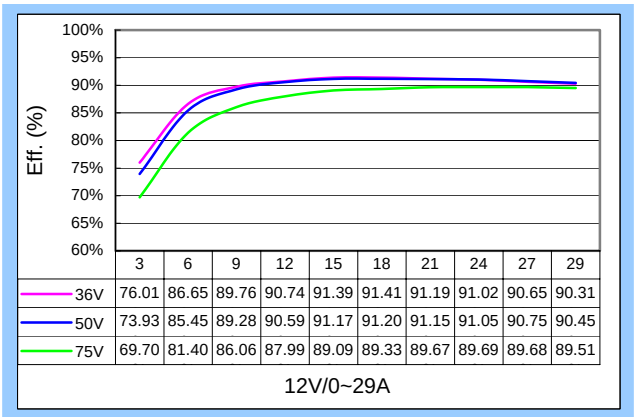
Remote Control	Logic High	+3.0V t0 +6.5V
	Logic Low	0V to +1.0V
Input Current of Remote Control Pin		-0.5mA ~ +1.5mA

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

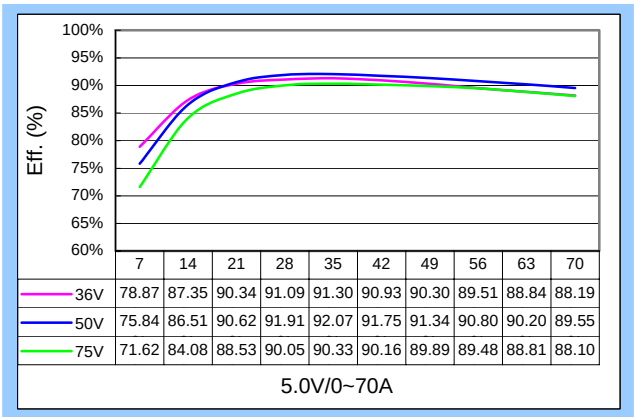
Voltage Accuracy	Typical	±1%
Line Regulation	Full Input Range	±0.2%
Load Regulation	10%~100%	±0.2%
Temperature Drift	-40°C ~100°C	±0.02%/°C
Output Tolerance Band	All Conditions	±3%
Ripple & Noise (20MHz)	Peak-Peak (RMS)	3% (1%) V_o
Over Voltage Protection	V_{NOM}, 10% Load	115~130 %Vo
Output Current 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	300mV/500uS
Start-Up Delay Time	V_{NOM}, Full Load	20mS/250mS



	3	6	9	12	15	18	21	24	27	29
36V	76.01	86.65	89.76	90.74	91.39	91.41	91.19	91.02	90.65	90.31
50V	73.93	85.45	89.28	90.59	91.17	91.20	91.15	91.05	90.75	90.45
75V	69.70	81.40	86.06	87.99	89.09	89.33	89.67	89.69	89.68	89.51

12V/0~29A

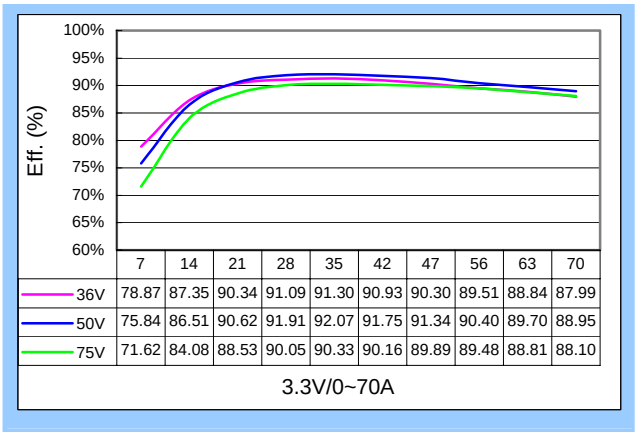
Efficiency Plot of CPH48120ABCD-029



	7	14	21	28	35	42	49	56	63	70
36V	78.87	87.35	90.34	91.09	91.30	90.93	90.30	89.51	88.84	88.19
50V	75.84	86.51	90.62	91.91	92.07	91.75	91.34	90.80	90.20	89.55
75V	71.62	84.08	88.53	90.05	90.33	90.16	89.89	89.48	88.81	88.10

5.0V/0~70A

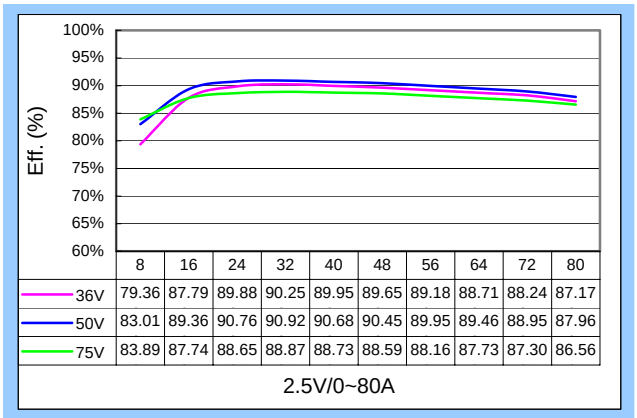
Efficiency Plot of CPH48050ABCD-070



	7	14	21	28	35	42	47	56	63	70
36V	78.87	87.35	90.34	91.09	91.30	90.93	90.30	89.51	88.84	87.99
50V	75.84	86.51	90.62	91.91	92.07	91.75	91.34	90.40	89.70	88.95
75V	71.62	84.08	88.53	90.05	90.33	90.16	89.89	89.48	88.81	88.10

3.3V/0~70A

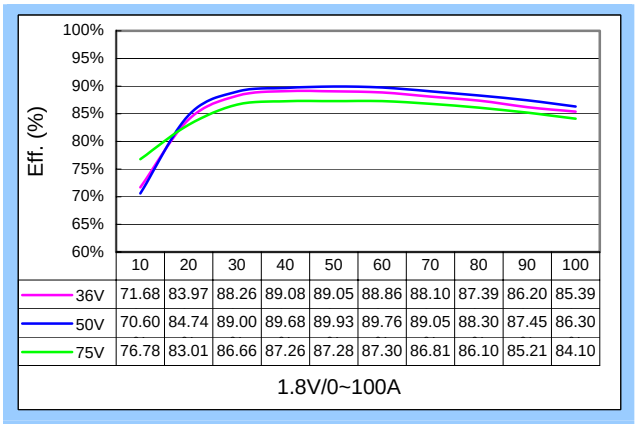
Efficiency Plot of CPH48033ABCD-070



	8	16	24	32	40	48	56	64	72	80
36V	79.36	87.79	89.88	90.25	89.95	89.65	89.18	88.71	88.24	87.17
50V	83.01	89.36	90.76	90.92	90.68	90.45	89.95	89.46	88.95	87.96
75V	83.89	87.74	88.65	88.87	88.73	88.59	88.16	87.73	87.30	86.56

2.5V/0~80A

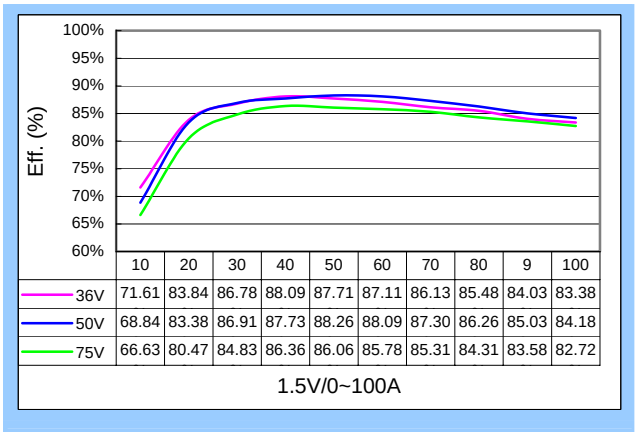
Efficiency Plot of CPH48025ABCD-080



	10	20	30	40	50	60	70	80	90	100
36V	71.68	83.97	88.26	89.08	89.05	88.86	88.10	87.39	86.20	85.39
50V	70.60	84.74	89.00	89.68	89.93	89.76	89.05	88.30	87.45	86.30
75V	76.78	83.01	86.66	87.26	87.28	87.30	86.81	86.10	85.21	84.10

1.8V/0~100A

Efficiency Plot of CPH48018ABCD-100



	10	20	30	40	50	60	70	80	9	100
36V	71.61	83.84	86.78	88.09	87.71	87.11	86.13	85.48	84.03	83.38
50V	68.84	83.38	86.91	87.73	88.26	88.09	87.30	86.26	85.03	84.18
75V	66.63	80.47	84.83	86.36	86.06	85.78	85.31	84.31	83.58	82.72

1.5V/0~100A

Efficiency Plot of CPH48015ABCD-100

NOTE

1. 20MHz bandwidth current probe measured without an external filter.
2. Output ripple and noise is measured by using the proposed test method of Glary Power Technology Co. Ltd.
3. Input fusing is required and recommended to base on surge current and maximum input current.
4. Case and base-plate should be connected to AC ground to maintain good EMC performance.
5. Case and base-plate should be inaccessible to prevent the damage from highly operating temperature.
6. Contact Glary Power Technology for non-standard inquiry.