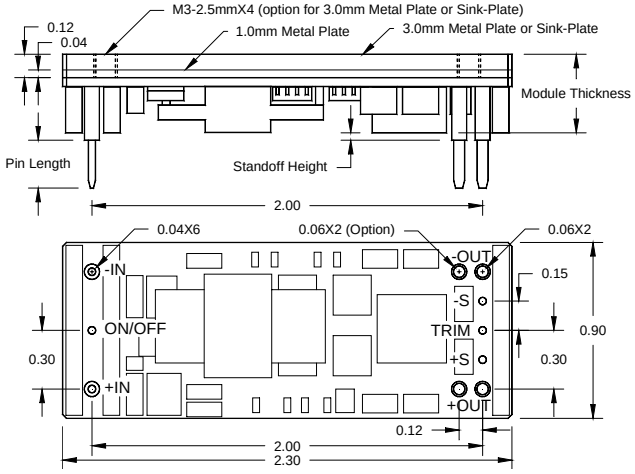
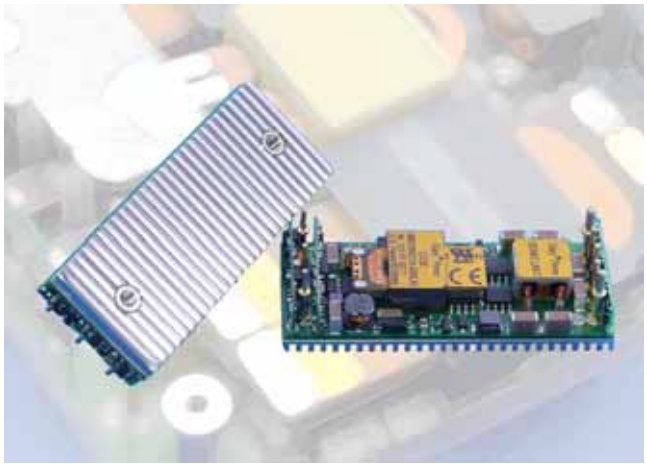
Glary Power Technology

COE 132W/50A
1/8 Brick DC/DC Converters





The COE series provides up to 132W/50A outputs with industry standard eighth brick package. The efficient SR stage combining with patented "Buck Reset" topology reduce power loss to achieve 177W/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 ..... 91%@5.0V/25A
  ..... 89%@2.5V/40A
  .....87%@1.8V/50A
- High useable current (with 5.0mm sink-Plate)
  ..... 2.5V/21A at 70°C 200LFM
  ..... 1.8V/25A at 70°C 200LFM
  ..... 1.5V/25A at 70°C 200LFM
- Sink-Plate (SP) flexible thermal managing capability (see drawing)

Part Number *	Maximum Input		Maximum Output		Efficiency
COE48120ABCD-EF	36V~75V	145W	12.0V/11A	132W	92%
COE48050ABCD-EF	36V~75V	138W	5.0V/25A	125W	91%
COE48033ABCD-EF	36V~75V	111W	3.3V/30A	99W	90%
COE48025ABCD-EF	36V~75V	114W	2.5V/40A	100W	89%
COE48018ABCD-EF	36V~75V	106W	1.8V/50A	90W	87%
COE48015ABCD-EF	36V~75V	90W	1.5V/50A	75W	85%

Part Number *	Maximum Input		Maximum Output		Efficiency
COE24120ABCD-EF	18V~36V	133W	12.0V/10A	120W	91%
COE24050ABCD-EF	18V~36V	139W	5.0V/25A	125W	90%
COE24033ABCD-EF	18V~36V	111W	3.3V/30A	99W	89%
COE24025ABCD-EF	18V~36V	114W	2.5V/40A	100W	89%
COE24018ABCD-EF	18V~36V	106W	1.8V/50A	90W	87%
COE24015ABCD-EF	18V~36V	90W	1.5V/50A	75W	85%

* Options for **COE 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"
EF (Output): **00** to **99** for output current rating

c UL us E219417 CE

Example: **COE48033N00A-30** is a ***COE*** series eighth brick 48V to 3.3V/30A 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	4.94×10^6 hrs @GB.
OTP	Internal	115°C
Weight		1.0 oz
Size		2.30"×0.9"×0.36"

CONTROL FUNCTIONS

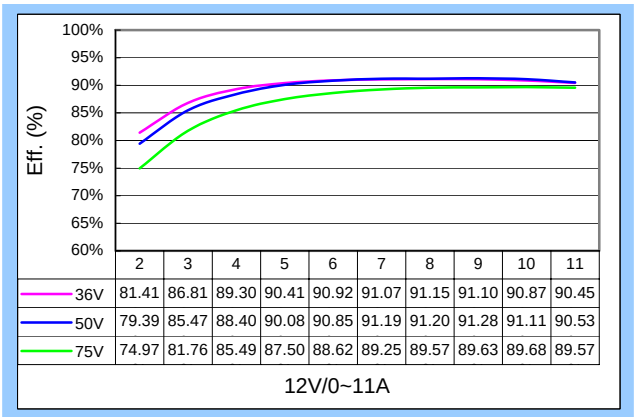
Remote Control	Logic High	+3.0V t0 +6.5V
	Logic Low	0V to +1.0V
Input Current of Remote Control Pin		-0.5mA ~ +1.5mA

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

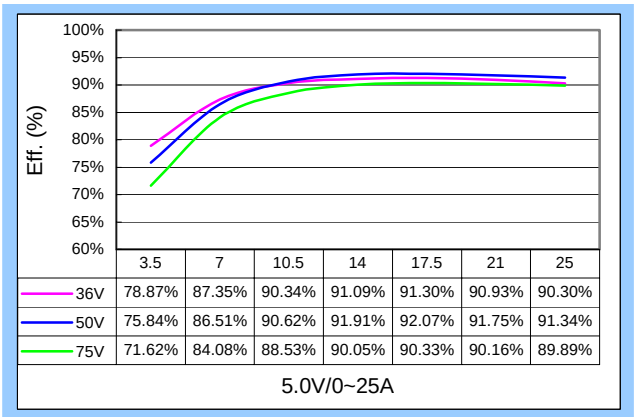
Voltage Accuracy	Typical	±1%
Line Regulation	Full Input Range	±0.2%
Load Regulation	10%~100%	±0.2%
Temperature Drift	-40°C ~100°C	±0.02%/°C
Output Tolerance Band	All Conditions	±3%
Ripple & Noise (20MHz)	Peak-Peak (RMS)	3% (1%) V_o
Over Voltage Protection	V_{NOM}, 10% Load	115~130 %Vo
Output Current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



	2	3	4	5	6	7	8	9	10	11
36V	81.41	86.81	89.30	90.41	90.92	91.07	91.15	91.10	90.87	90.45
50V	79.39	85.47	88.40	90.08	90.85	91.19	91.20	91.28	91.11	90.53
75V	74.97	81.76	85.49	87.50	88.62	89.25	89.57	89.63	89.68	89.57

12V/0~11A

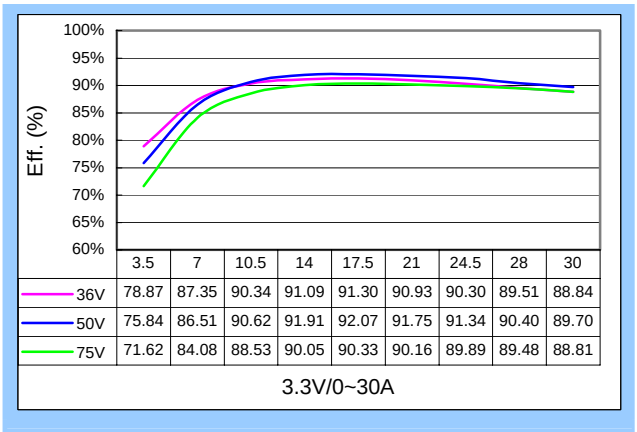
Efficiency Plot of COE48120ABCD-11



	3.5	7	10.5	14	17.5	21	25
36V	78.87%	87.35%	90.34%	91.09%	91.30%	90.93%	90.30%
50V	75.84%	86.51%	90.62%	91.91%	92.07%	91.75%	91.34%
75V	71.62%	84.08%	88.53%	90.05%	90.33%	90.16%	89.89%

5.0V/0~25A

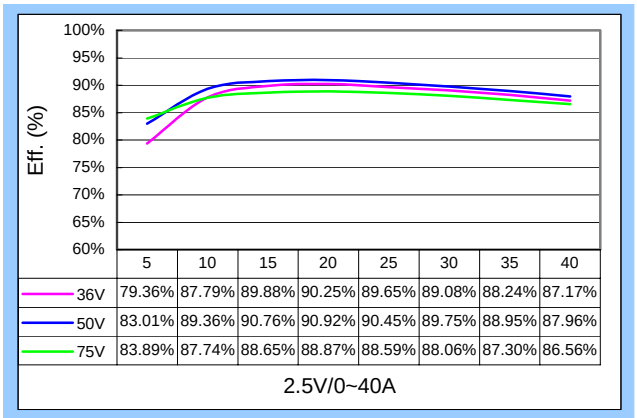
Efficiency Plot of COE48050ABCD-25



	3.5	7	10.5	14	17.5	21	24.5	28	30
36V	78.87	87.35	90.34	91.09	91.30	90.93	90.30	89.51	88.84
50V	75.84	86.51	90.62	91.91	92.07	91.75	91.34	90.40	89.70
75V	71.62	84.08	88.53	90.05	90.33	90.16	89.89	89.48	88.81

3.3V/0~30A

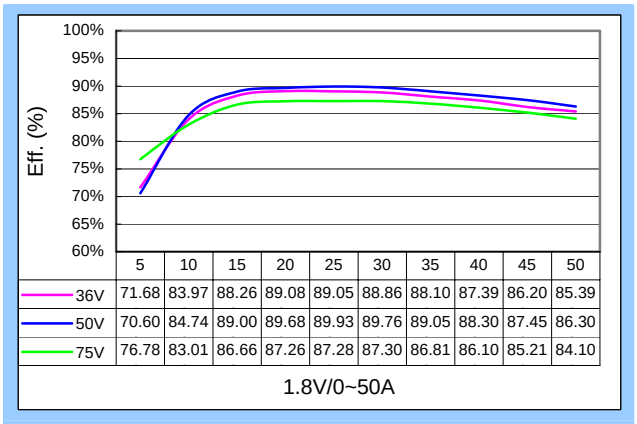
Efficiency Plot of COE48033ABCD-30



	5	10	15	20	25	30	35	40
36V	79.36%	87.79%	89.88%	90.25%	89.65%	89.08%	88.24%	87.17%
50V	83.01%	89.36%	90.76%	90.92%	90.45%	89.75%	88.95%	87.96%
75V	83.89%	87.74%	88.65%	88.87%	88.59%	88.06%	87.30%	86.56%

2.5V/0~40A

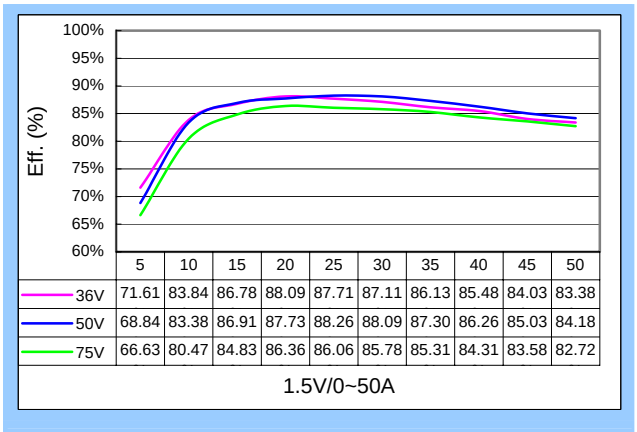
Efficiency Plot of COE48025ABCD-40



	5	10	15	20	25	30	35	40	45	50
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/0~50A

Efficiency Plot of COE48018ABCD-50



	5	10	15	20	25	30	35	40	45	50
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/0~50A

Efficiency Plot of COE48015ABCD-50

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.