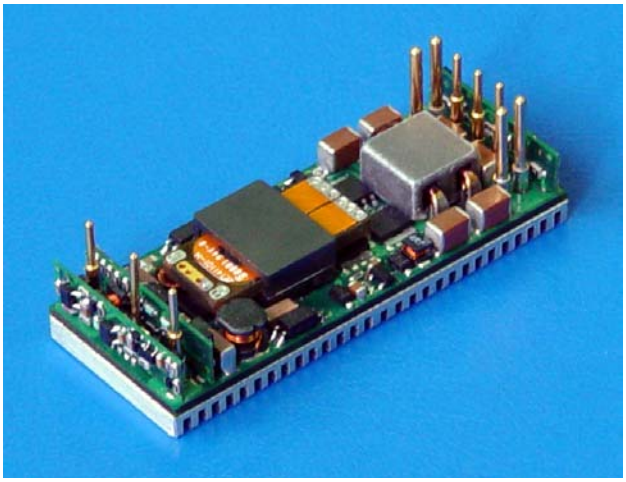
Glary Power Technology

COE Advanced Eighth Brick Size Converter

- High efficiency ..... 91%@5.0V/25A
  ..... 89%@2.5V/40A
  .....87%@1.8V/50A
- High useable current
  ..... 2.5V/21A at 70°C 200LFM
  ..... 1.8V/25A at 70°C 200LFM
  ..... 1.5V/25A at 70°C 200LFM
- High power density .....158W/in^3
- Low profile ..... 0.40"(10.2mm)
- Operation temperature ..... -40°C~120°C
- Open frame and metal enclosed package
- Quarter brick pin out compatible



PRELIMINARY DATA SHEET

The *"Advanced"* COE series high efficiency dc/dc converter is co-developed by *Glary Power Technology* and *Idealise Research* to provide up to 50A delivered current with new industry standard double-pin packaging. The efficient SR technology combining with patented *"Buck Reset"* topology cut power loss to improve the efficiency. The low profile converter was integrated with patent pending *"Sink-Plate"* structure gives converter the most effected thermal managing function that able to eliminate the hot spot and improve the thermal resistance greatly. This module is designed to meet high-reliability and/or high-density applications that supplied by a 24V or 48V (36~75V) input bus.

Part Number *	Input		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 *	Input		Output		Efficiency
COE24120ABCD-EF	18V~36V	147W	12.0V/11A	132W	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/50A	125W	89%
COE24018ABCD-EF	18V~36V	106W	1.8V/50A	90W	87%
COE24015ABCD-EF	18V~36V	90W	1.5V/50A	75W	85%

* Options for **COEXXXXXABCD-EF** are as follows:

A (Enable Logic):	"P" for Positive or "N" for Negative.			
B (Pin Length):	"0" for Pin Length 0.120"	"1" for Pin Length 0.16"	"2" for Pin Length 0.20"	"3" for Pin Length 0.240"
C (Total Height):	"0" for 0.36"	"1" for 0.40"	"2" for 0.45"	"3" for 0.50"
D (Base Plate):	"M" 1.0mm Metal Plate	"S" 3.0mm Base Plate	"A" 3.0mm Sink-Plate	"B" 5.0mm Sink-Plate
EF (Output):	00~99 for Output Current Rating			

Example: **COE48018P31M-40** is a "Cool" series ***OPEN*** version eighth brick size 48V to 1.8V/40A dc/dc converter with options of positive control logic, 0.240" pin length, 0.40" total height and 1.0mm 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

GENERAL SPECIFICATIONS

Conversion Efficiency	Typical	See table
Switching Frequency	Typical	300KHz
MTBF	Bellcore	4.94×10^6 hrs @GB.
OTP	Internal	120°C Latched
Weight		1.0 oz
Size		2.30"×0.90"×0.36"

CONTROL FUNCTIONS

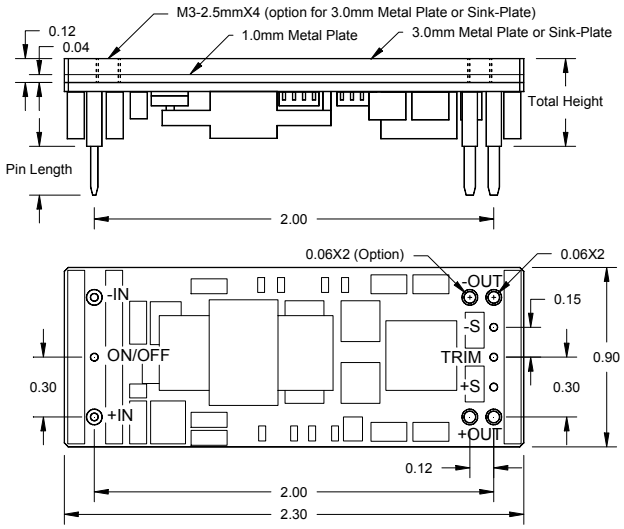
Remote Control	Logic High	+3.0V t0 +6.5V
	Logic Low	0V to +1.0V
Input Current of Remote Control Pin		-0.5mA ~ +1.5mA

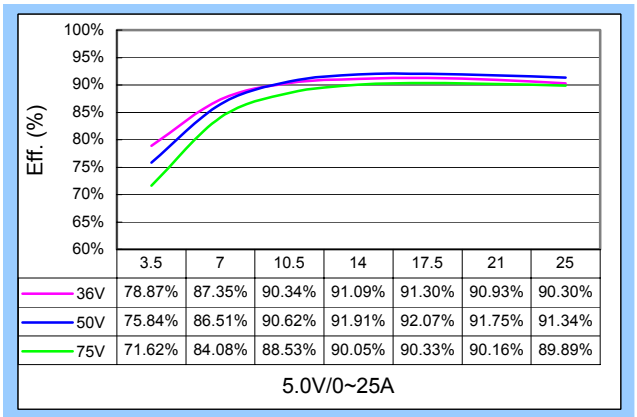
INPUT SPECIFICATIONS

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	10.0uF Max
	48V Models	2.2uF 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/300uS
Start-Up Delay Time	V_{NOM}, Full Load	20mS/250mS

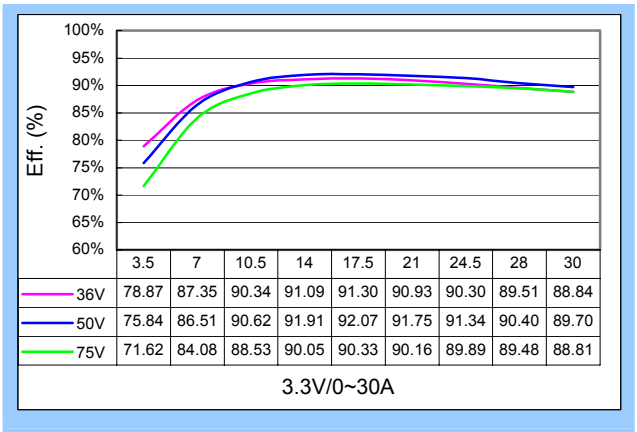




	3.5	7	10.5	14	17.5	21	25
36V	78.87%	87.35%	90.34%	91.09%	91.30%	90.93%	90.30%
50V	75.84%	86.51%	90.62%	91.91%	92.07%	91.75%	91.34%
75V	71.62%	84.08%	88.53%	90.05%	90.33%	90.16%	89.89%

5.0V/0~25A

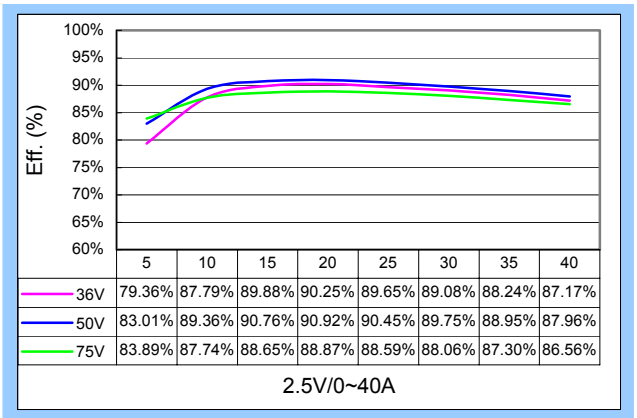
Efficiency Change by Output Current of COE48S050-25



	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

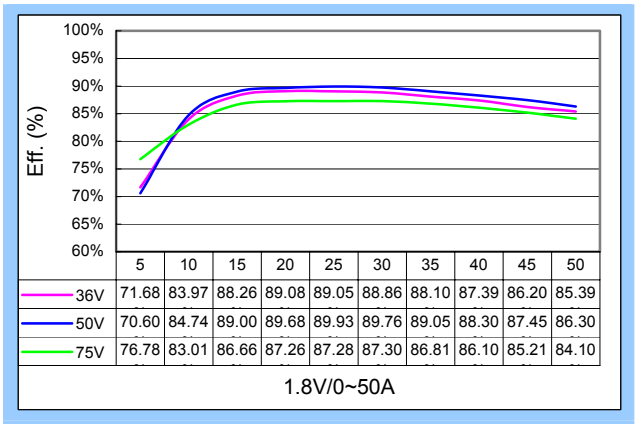
Efficiency Change by Output Current of COE48S033-30



	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

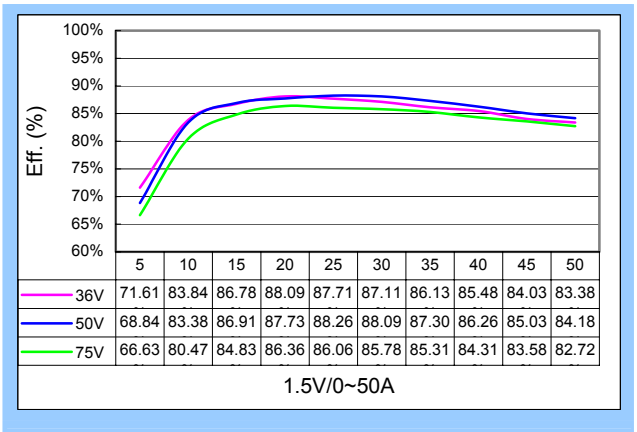
Efficiency Change by Output Current of COE48S025-40



	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 Change by Output Current of COE48S018-50



	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 Change by Output Current of COE48S015-50

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.