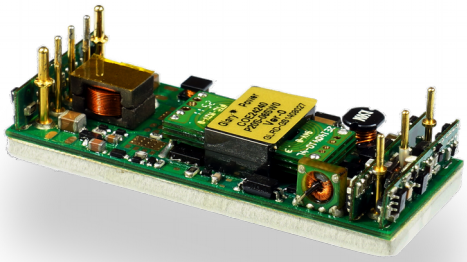
Efficiency >93% | 142W/in³ | Open Frame Package | Remote ON OFF | 4.8Mhrs MTBF

OCP | OTP | OVP | INPUT 2:1

c UL us E219417 | CE

Pb | RoHS 2002/95/EC



The **COE Standard Series** provides three outputs including 12V/11A, 5V/25A and 3.3V/30A from 18~36V or 36~75V input ranges with industry standard eighth brick pin assignment. The efficient converter core is designed with patented ***"Buck-Reset Forward"*** topology, which is capable to cooperate with ***Synchronous-Rectifier*** technology at high frequency for efficiently delivering more power to achieve 142W/in^3 power density. The high-frequency high-efficiency converter core design also unveils a low profile open frame construction that reduces the shadow effect of airflow to get better thermal performance.

A proprietary ultra-fast current limiting circuit technology is also embedded in the converter core of the **COE Standard Series** to eliminate the long existing technical challenge of ***"Short-Circuit-Current-Runaway"***, which is an extremely high output current drove by the minimum output voltage in proportion with the propagation delay flowing through the short circuit loop or the low-impedance non-Ohmic loads such as motor or loads with large capacitors in parallel. The propagation delay of the **COE Standard Series** with ultra-fast current limiting can be as short as 60nS, effectively shifting the current limit set point higher than that of conventional converters without reliability impact, and makes it even more suitable for powering the non-Ohmic loads. On the other hand, the 300nS typical propagation delay of the current loop for conventional modules designed with commercial PWM controllers can cause high current stress and high power loss, which can be reduced by using hiccup mode current limiting function provided by the controller, but such countermeasure would leave the high short circuit current stress as it was.

Not only focusing on the conversion performances, the **COE Standard Series** is also designed with higher reliability. All the power semiconductor chips are attached onto a 3.0mm Aluminum base-plate to mitigate the hot spots by spreading the heat to other areas, and further result in lower thermal resistance and lower temperature. All the special design efforts embedded in this product effectively simplify the system power design of Telecom, Servers, Networking equipments and other industrial applications.

MODEL NUMBER SYSTEM

COE	24	120	a	b	c	d	-	XX	XX	X
Series Name	Input Voltage	Output Voltage	Enable Logic	Pin Length	Standoff Height	Base-Plate / module thickness		Setting	Suffix	Version
COE	**24:**18V~36V **48:**36V~75V	**Unit:** 0.1V Increments **120= 12V** **050= 5.0**V	**P:** Positive **N:** Negative	**0:** 0.12" **1:** 0.16" **2:** 0.20" **3:** 0.24"	**0:** 0.02" **1:** 0.08" **2:** 0.16"	M: 1.0mm Metal Plate / 0.34" S: 3.0mm Metal Plate / 0.42" A: 3.0mm Sink-Plate / 0.42" B: 5.0mm Sink-Plate / 0.50"	-	For customer function only	For marketing purpose only	

The selected option codes for the "abcd" section in the model number determine what options will be applied in production. For example, the **COE24120P20S-11GP0** module is configured to has positive enable logic, 0.20" pin length, 0.02" standoff height and 3.0mm metal-plate, which result in 0.42" of the module thickness. The total height is 0.44" obtained by summing up the 0.02" standoff height and the 0.42" module thickness.

MODEL LIST (Contact factory for special input / output)

Model Number	Maximum Input		Maximum Output		Efficiency
COE24033P20S-30GP0	18V-36V	111W	3.3V/30A	100W	90.0%
COE24050P20S-25GP0	18V-36V	138W	5.0V/25A	125W	90.5%
COE24120P20S-11GP0	18V-36V	143W	12V/11A	132W	92.0%

Model Number	Maximum Input		Maximum Output		Efficiency
COE48033P20S-30GP0	36V-75V	111W	3.3V/30A	100W	90.0%
COE48050P20S-25GP0	36V-75V	137W	5.0V/25A	125W	91.5%
COE48120P20S-11GP0	36V-75V	142W	12V/11A	132W	93.0%

COMMON SPECIFICATIONS

Absolute Maximum Ratings

Temperature	Operation Storage	-40°C to +110°C -55°C to +125°C
Input Voltage Range	Operation: 48V Models 24V Models Transient (100mS): 48V Models 24V Models	 -0.5V to +80Vdc -0.5V to +40Vdc 100V Maximum 50V Maximum
Isolation Voltage	Input to Output Input to Case Output to Case	2.0KV Minimum 1.0KV Minimum 1.0KV Minimum
Remote Control		-0.5V to +12Vdc

General Parameters

MTBF	Bellcore TR-332 issue 6	4.80×10^6 hrs @GB/25°C (COE48050abcd-25XXX)
OTP	T_{AVG} or T_C	110°C ±5°C for standard setting
Weight	3.0mm Base-plate	32g

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 24V Models	+36V to +75Vdc +18V to +36Vdc
Power ON Voltage Ranges	48V Models 24V Models	+34.0V to +36.0Vdc +17.0V to +18.0Vdc
Power OFF Voltage Ranges	48V Models 24V Models	+31.2V to +33.2Vdc +15.6V to +16.6Vdc
Off State Input Current	V_{NOM}	6mA Max
Latch-State Input Current	V_{NOM}	8mA Max
Input Capacitance	48V Models 24V Models	20.0uF Max 40.0uF Max

Output Limitations

Part Number	Capacitive Load C_E	Pre-biased Voltage V_B	Reverse Current I_B	Short Circuit Output Current I_S	Note
COE24033P20S-30GP0	<22000uF@110mΩ Load	<3.1V	<100mA@V_B	<60A @ 2mΩ Load	
COE24050P20S-25GP0	<10000uF@200mΩ Load	<4.75V	<100mA@V_B	<50A @ 2mΩ Load	
COE24120P20S-11GP0	<1000uF@1100mΩ Load	<11.4V	<100mA@V_B	<25A @ 2mΩ Load	
COE48033P20S-30GP0	<22000uF@110mΩ Load	<3.1V	<100mA@V_B	<60A @ 2mΩ Load	
COE48050P20S-25GP0	<10000uF@200mΩ Load	<4.75V	<100mA@V_B	<50A @ 2mΩ Load	
COE48120P20S-11GP0	<1000uF@1100mΩ Load	<11.4V	<100mA@V_B	<25A @ 2mΩ Load	

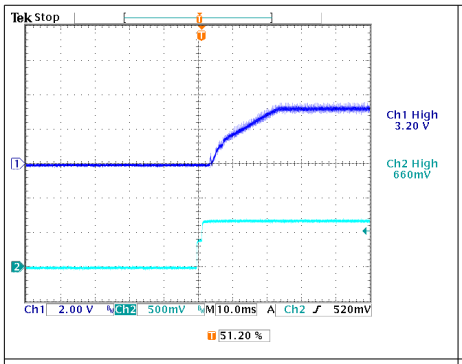
Model Number: COE24033P20S-30GP0

MODEL PARAMETERS

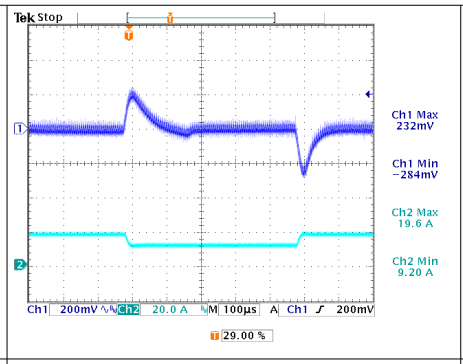
General		
Conversion Efficiency	Typical	See efficiency plots
Switching Frequency	Typical	330KHz

Input/Output		
Reflected Input Ripple Current	L_{EXT} = 10uH	20mA rms/60mAp-p
Input Ripple Rejection (<1KHz)	V_{NOM}, Full Load	-50dB
Voltage Accuracy	Typical	±1.0%
Line Regulation	Full Input Range	±0.2%
Load Regulation	0%~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%
Step Load (2.5A/μS)	50%~75% Load	±6%Vo/500μS
Start-Up Delay Time	V_{NOM}, Full Load	20mS/250mS

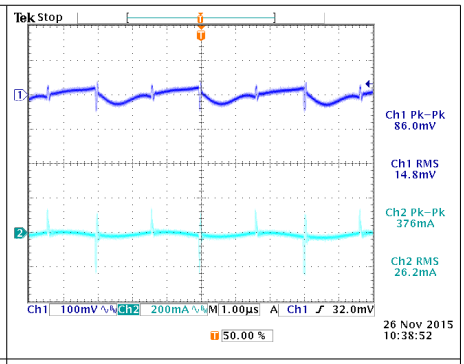
TYPICAL WAVES AND CURVES



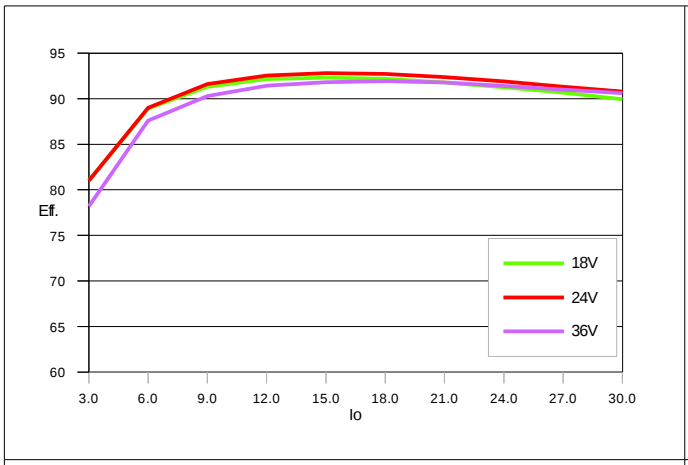
Start-up waveform of COE24033P20S-30GP0
(V_{IN}: 24V, Load: 30A)



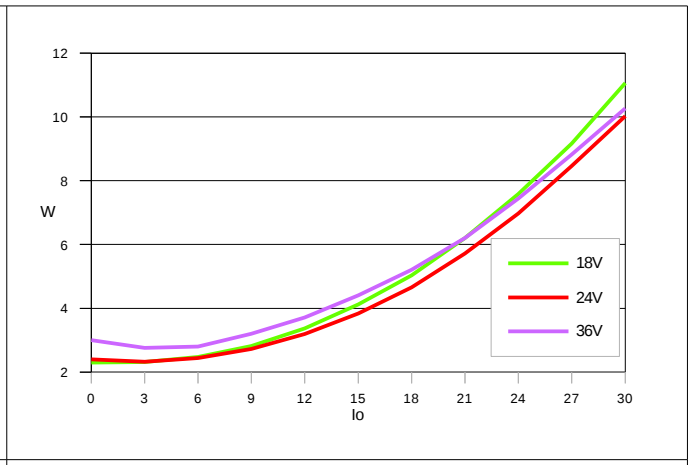
Transient response of COE24033P20S-30GP0
(V_{IN}: 24V, Load: 22.5A/15A@2.5A/μS)



Input/Output ripples of COE24033P20S-30GP0
(V_{IN}: 24V, Load: 30A, L_{IN}=10uH)



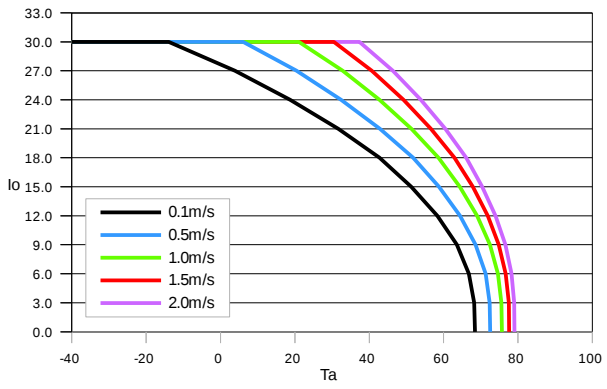
Efficiency plot of COE24033P20S-30GP0



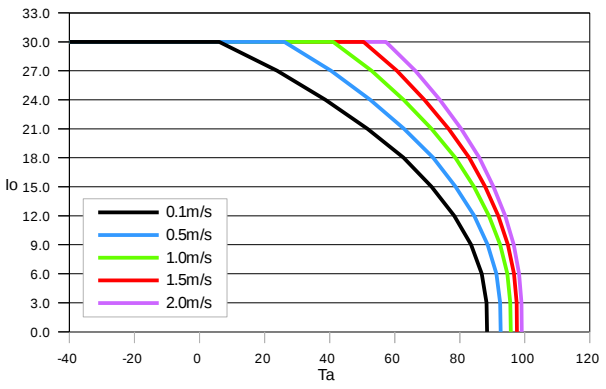
Power loss curves of COE24033P20S-30GP0

Model Number: COE24033P20S-30GP0

Derating Curves

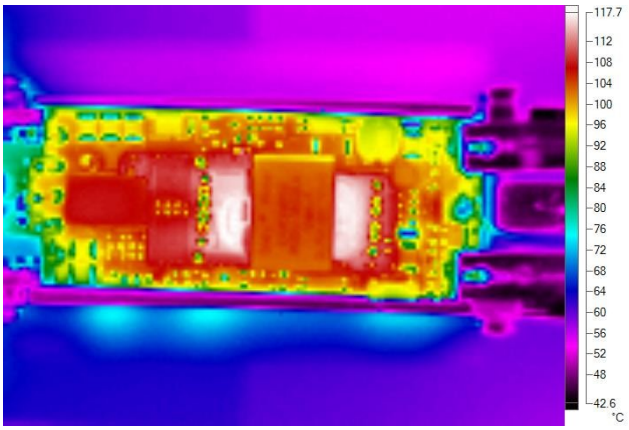


Calculated derating of COE24033P20S-30GP0 (T_C= 90ºC)

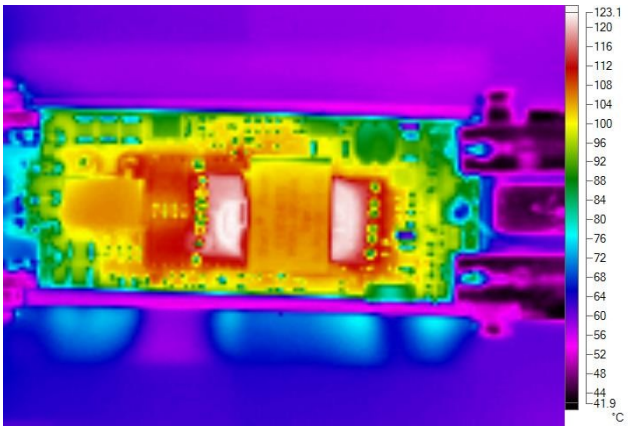


Calculated derating of COE24033P20S-30GP0 (T_C= 110ºC)

Referenced Thermal Images



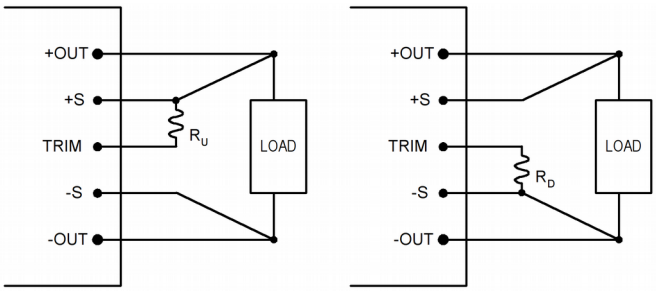
COE24033P20S-30GP0 (Io= 19.5A@57˚C/0.1m/Sec.)



COE24033P20S-30GP0 (Io= 24A@62˚C/2.0m/Sec.)

Trim and Trim Table

The output of the power module can be adjusted for higher or lower than the rated voltage level by connecting the TRIM pin through a resistor to the pins of +S or -S respectively as shown as on the right hand side. The resistor for trimming output voltage higher or lower are denoted as R_U and R_D, which have different resistances for each different output voltage level. The resistance table for trimming the output voltage with 1% of step are listed as below for reference.



Trim Up	+1%	+2%	+3%	+4%	+5%	+6%	+7%	+8%	+9%	+10%	-	-	-	-	-	-	-	-	-	-
R_U (KΩ)	42.81	21.41	14.27	10.70	8.56	7.13	6.12	5.35	4.76	4.28	-	-	-	-	-	-	-	-	-	-

Trim Down	-1%	-2%	-3%	-4%	-5%	-6%	-7%	-8%	-9%	-10%	-	-	-	-	-	-	-	-	-	-
R_D (KΩ)	10.15	4.81	3.03	2.14	1.60	1.25	0.99	0.80	0.65	0.53	-	-	-	-	-	-	-	-	-	-

** Please contact Glary Power if a trim range beyond ±10% is needed.*

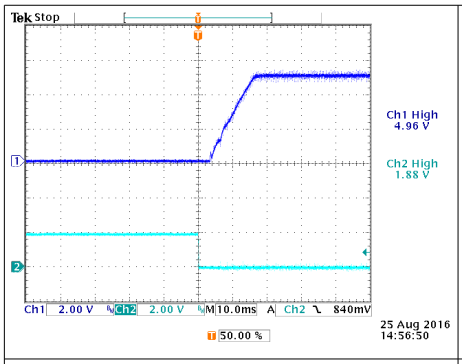
Model Number: COE24050P20S-25GP0

MODEL PARAMETERS

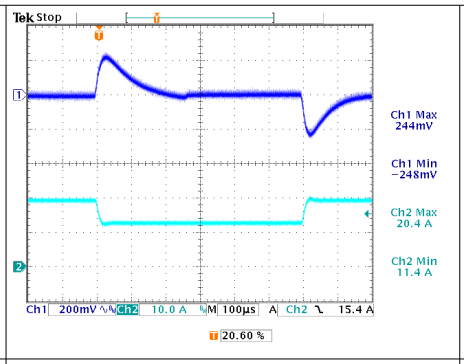
General		
Conversion Efficiency	Typical	See efficiency plots
Switching Frequency	Typical	330KHz

Input/Output		
Reflected Input Ripple Current	L_{EXT} = 10uH	20mA rms/60mAp-p
Input Ripple Rejection (<1KHz)	V_{NOM}, Full Load	-50dB
Voltage Accuracy	Typical	±1.0%
Line Regulation	Full Input Range	±0.2%
Load Regulation	0%~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%
Step Load (2.5A/μS)	50%~75% Load	±6%Vo/500μS
Start-Up Delay Time	V_{NOM}, Full Load	20mS/250mS

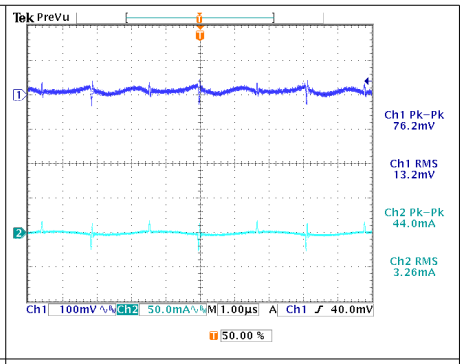
TYPICAL WAVES AND CURVES



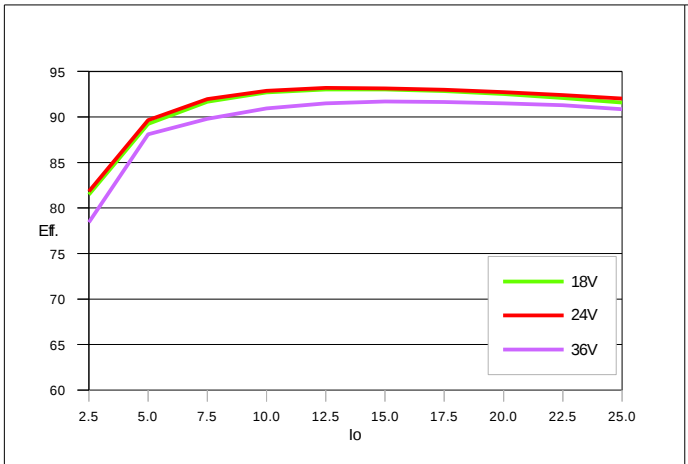
Start-up waveform of COE24050P20S-25GP0
(V_{IN}: 24V, Load: 25A)



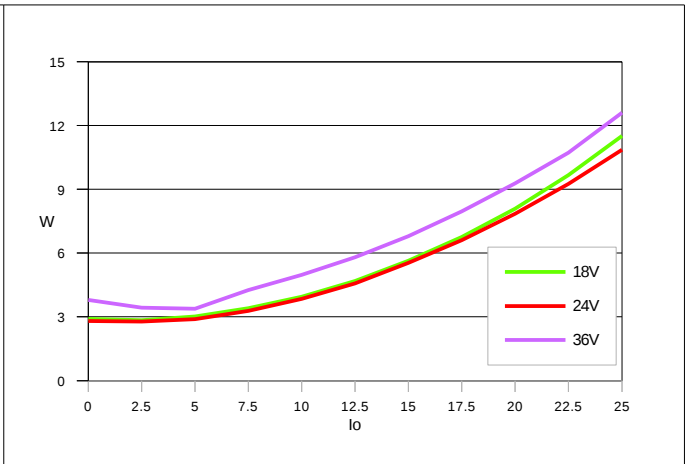
Transient response of COE24050P20S-25GP0
(V_{IN}: 24V, Load: 18.75A/12.5A@2.5A/μS)



Input/Output ripples of COE24050P20S-25GP0
(V_{IN}: 24V, Load: 25A, L_{IN}=10uH)



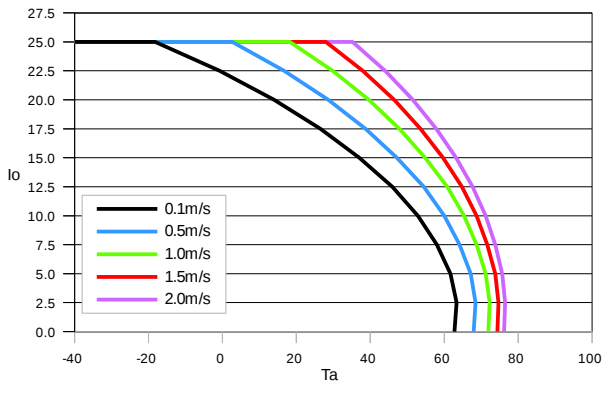
Efficiency plot of COE24050P20S-25GP0



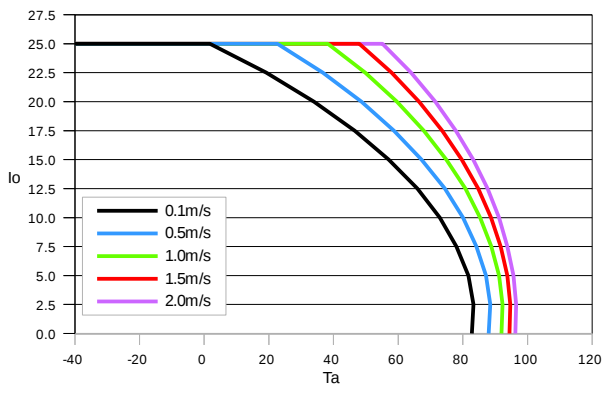
Power loss curves of COE24050P20S-25GP0

Model Number: COE24050P20S-25GP0

Derating Curves

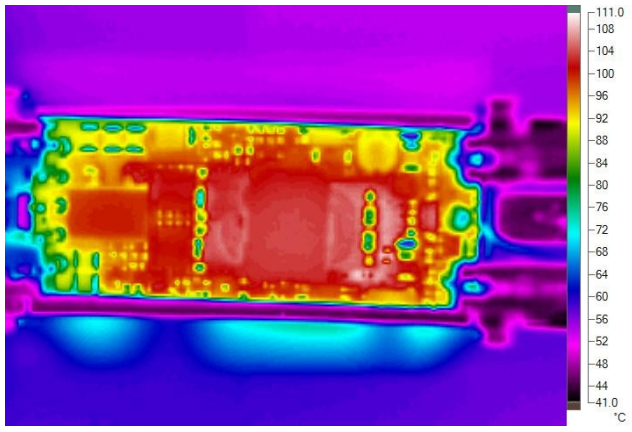


Calculated derating of COE24050P20S-25GP0 (T_C= 90ºC)

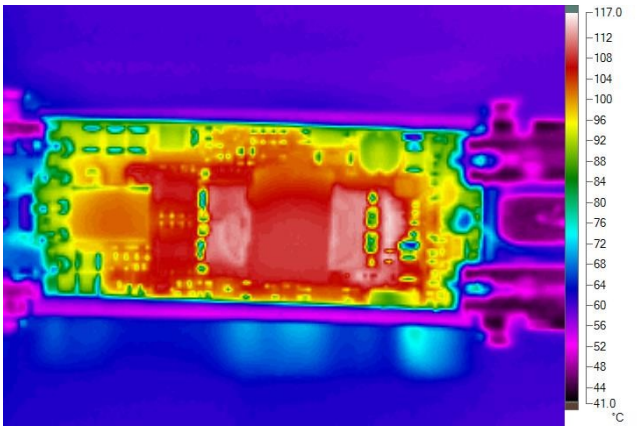


Calculated derating of COE24050P20S-25GP0 (T_C= 110ºC)

Referenced Thermal Images



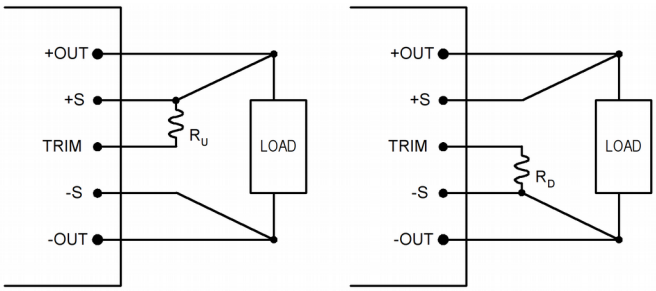
COE24050P20S-25GP0 (Io= 13.5A@57˚C/0.1m/Sec.)



COE24050P20S-25GP0 (Io= 18A@64˚C/2.0m/Sec.)

Trim and Trim Table

The output of the power module can be adjusted for higher or lower than the rated voltage level by connecting the TRIM pin through a resistor to the pins of +S or -S respectively as shown as on the right hand side. The resistor for trimming output voltage higher or lower are denoted as R_U and R_D, which have different resistances for each different output voltage level. The resistance table for trimming the output voltage with 1% of step are listed as below for reference.



Trim Up	+1%	+2%	+3%	+4%	+5%	+6%	+7%	+8%	+9%	+10%	-	-	-	-	-	-	-	-	-	-
R_U (KΩ)	63.40	32.20	21.47	16.10	12.88	10.73	9.20	8.05	7.16	6.44	-	-	-	-	-	-	-	-	-	-

Trim Down	-1%	-2%	-3%	-4%	-5%	-6%	-7%	-8%	-9%	-10%	-	-	-	-	-	-	-	-	-	-
R_D (KΩ)	15.11	7.15	4.50	3.18	2.38	1.85	1.47	1.19	0.97	0.79	-	-	-	-	-	-	-	-	-	-

** Please contact Glary Power if a trim range beyond ±10% is needed.*

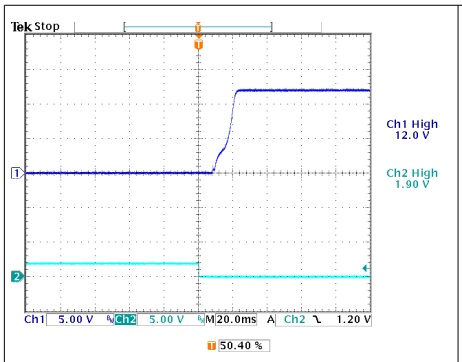
Model Number: COE24120P20S-11GP0

MODEL PARAMETERS

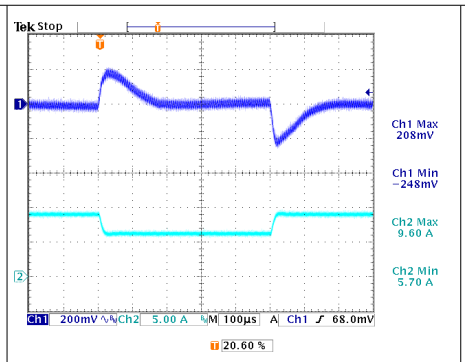
General		
Conversion Efficiency	Typical	See efficiency plots
Switching Frequency	Typical	330KHz

Input/Output		
Reflected Input Ripple Current	L_{EXT} = 10uH	20mA rms/60mAp-p
Input Ripple Rejection (<1KHz)	V_{NOM}, Full Load	-50dB
Voltage Accuracy	Typical	±1.0%
Line Regulation	Full Input Range	±0.2%
Load Regulation	0%~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%
Step Load (2.5A/μS)	50%~75% Load	±6%Vo/500μS
Start-Up Delay Time	V_{NOM}, Full Load	20mS/250mS

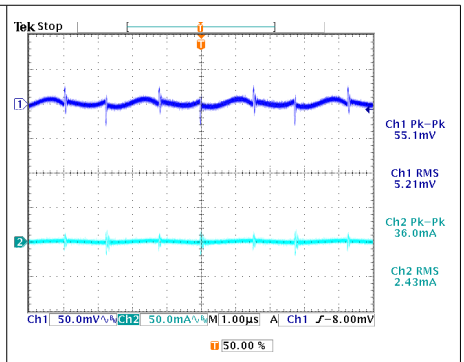
TYPICAL WAVES AND CURVES



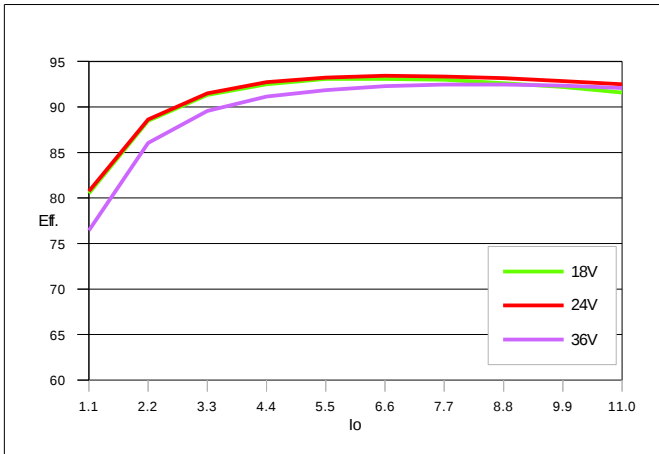
Start-up waveform of COE24120P20S-11GP0
(V_{IN}: 24V, Load: 11A)



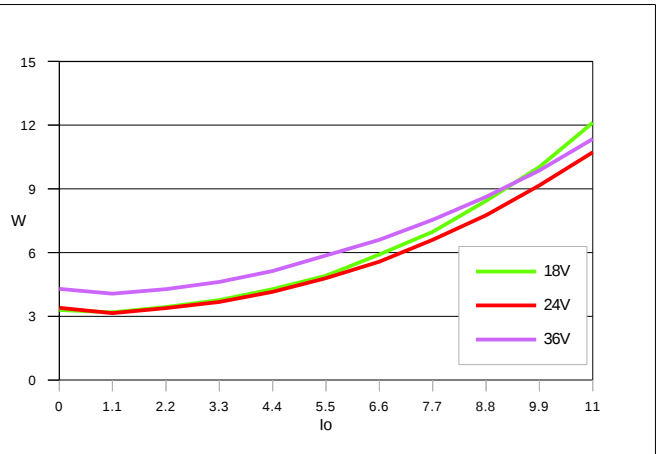
Transient response of COE24120P20S-11GP0
(V_{IN}: 24V, Load: 8.25A/5.5A@2.5A/μS)



Input/Output ripples of COE24120P20S-11GP0
(V_{IN}: 24V, Load: 11A, L_{IN}=10uH)



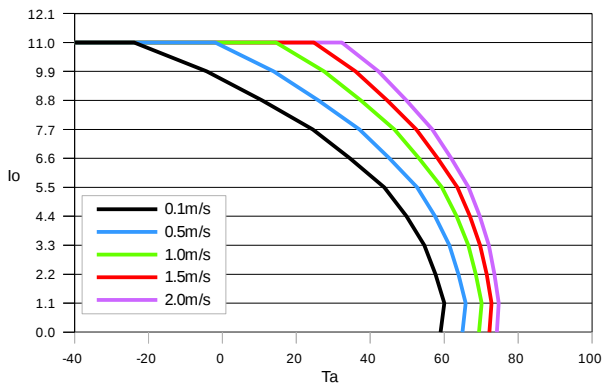
Efficiency plot of COE24120P20S-11GP0



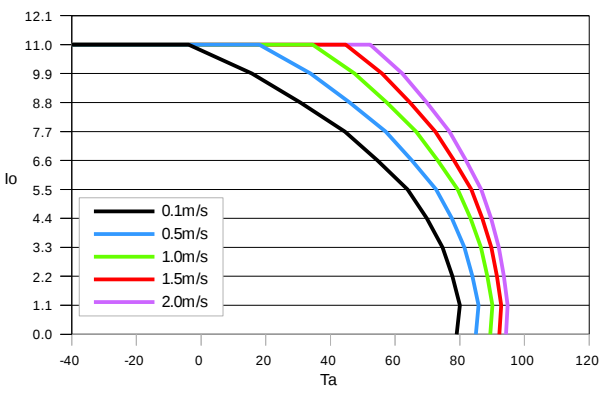
Power loss curves of COE24120P20S-11GP0

Model Number: COE24120P20S-11GP0

Derating Curves

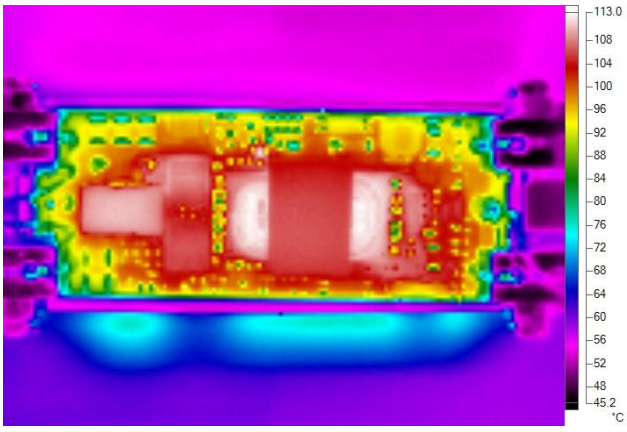


Calculated derating of COE24120P20S-11GP0 (T_C= 90ºC)

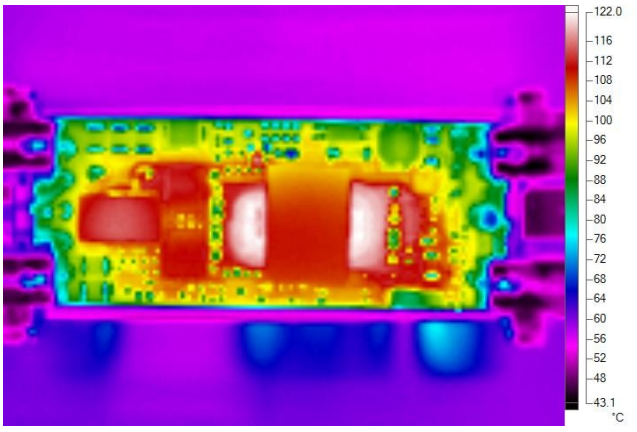


Calculated derating of COE24120P20S-11GP0 (T_C= 110ºC)

Referenced Thermal Images



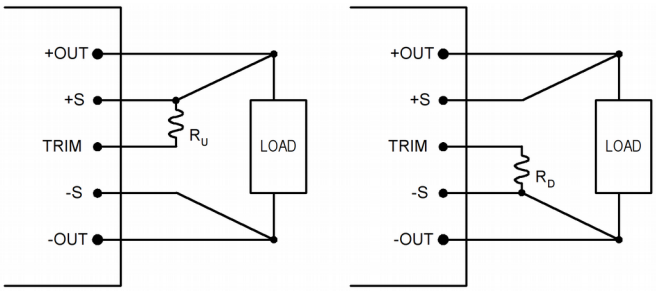
COE24120P20S-11GP0 (Io= 7.0A@55˚C/0.1m/Sec.)



COE24120P20S-11GP0 (Io= 9.0A@59˚C/2.0m/Sec.)

Trim and Trim Table

The output of the power module can be adjusted for higher or lower than the rated voltage level by connecting the TRIM pin through a resistor to the pins of +S or -S respectively as shown as on the right hand side. The resistor for trimming output voltage higher or lower are denoted as R_U and R_D, which have different resistances for each different output voltage level. The resistance table for trimming the output voltage with 1% of step are listed as below for reference.



Trim Up	+1%	+2%	+3%	+4%	+5%	+6%	+7%	+8%	+9%	+10%	-	-	-	-	-	-	-	-	-	-
R_U (KΩ)	159.0	79.50	53.00	39.75	31.80	26.50	22.71	19.87	17.67	15.90	-	-	-	-	-	-	-	-	-	-

Trim Down	-1%	-2%	-3%	-4%	-5%	-6%	-7%	-8%	-9%	-10%	-	-	-	-	-	-	-	-	-	-
R_D (KΩ)	39.00	18.50	11.67	8.25	6.20	4.83	3.86	3.13	2.56	2.10	-	-	-	-	-	-	-	-	-	-

** Please contact Glary Power if a trim range beyond ±10% is needed.*

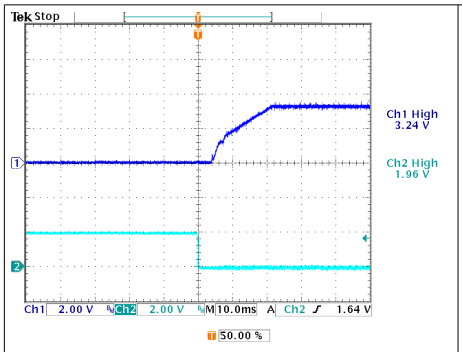
Model Number: COE48033P20S-30GP0

MODEL PARAMETERS

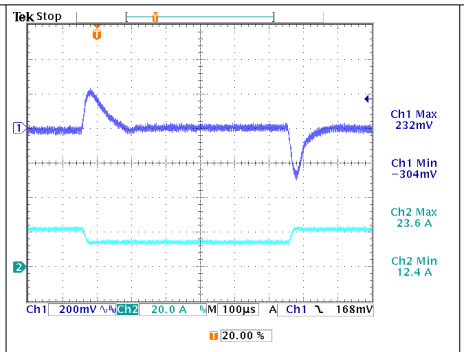
General		
Conversion Efficiency	Typical	See efficiency plots
Switching Frequency	Typical	330KHz

Input/Output		
Reflected Input Ripple Current	L_{EXT} = 10uH	20mA rms/60mAp-p
Input Ripple Rejection (<1KHz)	V_{NOM}, Full Load	-50dB
Voltage Accuracy	Typical	±1.0%
Line Regulation	Full Input Range	±0.2%
Load Regulation	0%~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%
Step Load (2.5A/μS)	50%~75% Load	±6%Vo/500μS
Start-Up Delay Time	V_{NOM}, Full Load	20mS/250mS

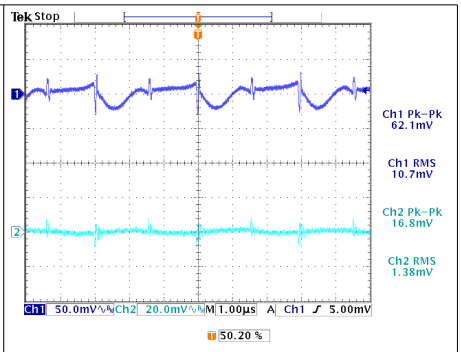
TYPICAL WAVES AND CURVES



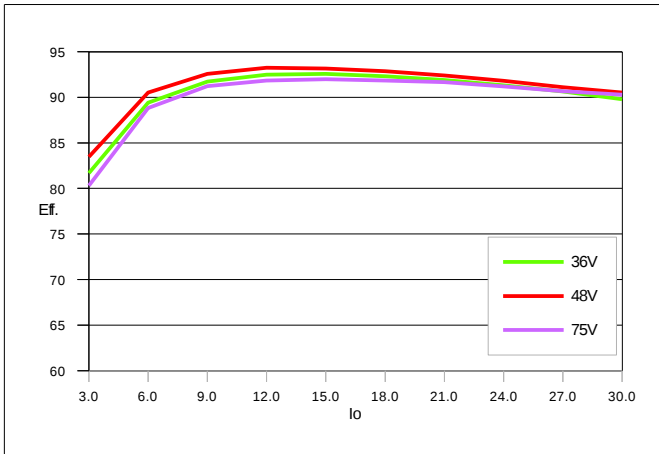
Start-up waveform of COE48033P20S-30GP0
(V_{IN}: 48V, Load: 30A)



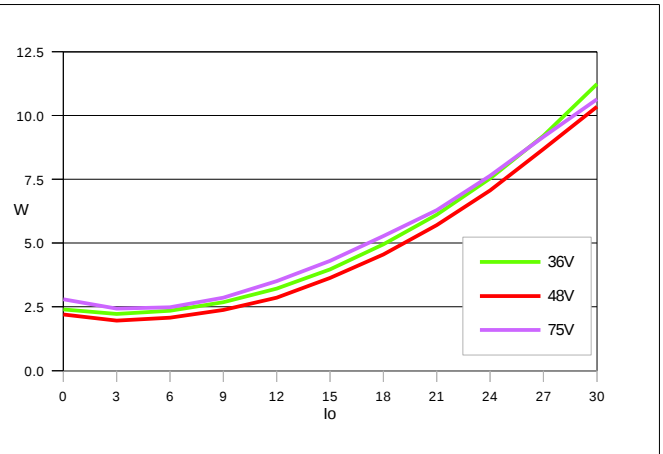
Transient response of COE48033P20S-30GP0
(V_{IN}: 48V, Load: 22.5A/15A@2.5A/μS)



Input/Output ripples of COE48033P20S-30GP0
(V_{IN}: 48V, Load: 30A, L_{IN}=10uH)



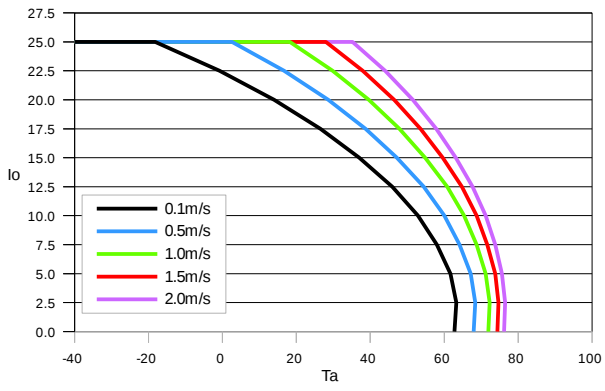
Efficiency plot of COE48033P20S-30GP0



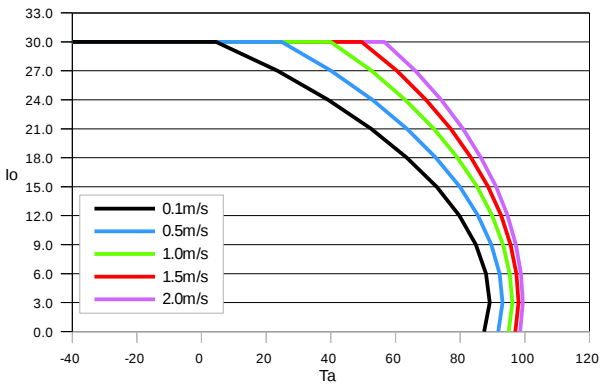
Power loss curves of COE48033P20S-30GP0

Model Number: COE48033P20S-30GP0

DERATING CURVES

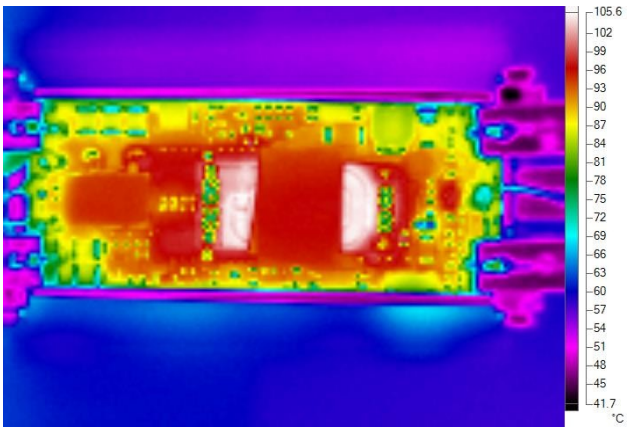


Calculated derating of COE48033P20S-30GP0 (T_C= 90ºC)

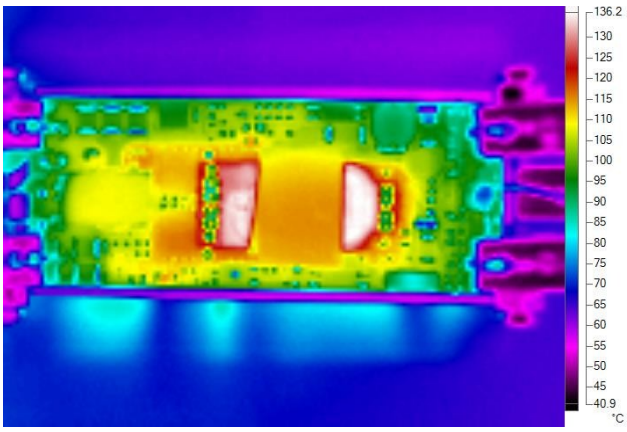


Calculated derating of COE48033P20S-30GP0 (T_C= 110ºC)

REFERENCED THERMAL IMAGES



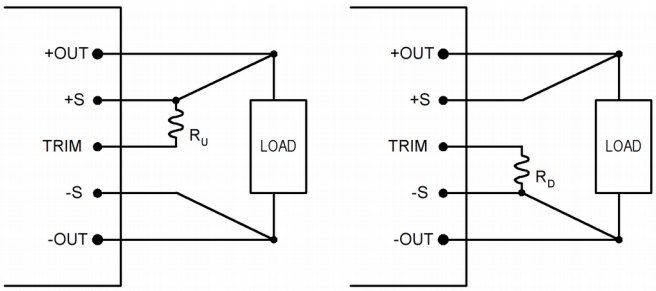
COE48033P20S-30GP0 (Io= 17.8A@62˚C/0.1m/Sec.)



COE48033P20S-30GP0 (Io= 27A@70˚C/2.0m/Sec.)

TRIM AND TRIM TABLE

The output of the power module can be adjusted for higher or lower than the rated voltage level by connecting the TRIM pin through a resistor to the pins of +S or -S respectively as shown as on the right hand side. The resistor for trimming output voltage higher or lower are denoted as R_U and R_D, which have different resistances for each different output voltage level. The resistance table for trimming the output voltage with 1% of step are listed as below for reference.



Trim Up	+1%	+2%	+3%	+4%	+5%	+6%	+7%	+8%	+9%	+10%	-	-	-	-	-	-	-	-	-	-
R_U (KΩ)	42.81	21.41	14.27	10.70	8.56	7.13	6.12	5.35	4.76	4.28	-	-	-	-	-	-	-	-	-	-

Trim Down	-1%	-2%	-3%	-4%	-5%	-6%	-7%	-8%	-9%	-10%	-	-	-	-	-	-	-	-	-	-
R_D (KΩ)	10.15	4.81	3.03	2.14	1.60	1.25	0.99	0.80	0.65	0.53	-	-	-	-	-	-	-	-	-	-

** Please contact Glary Power if a trim range beyond ±10% is needed.*

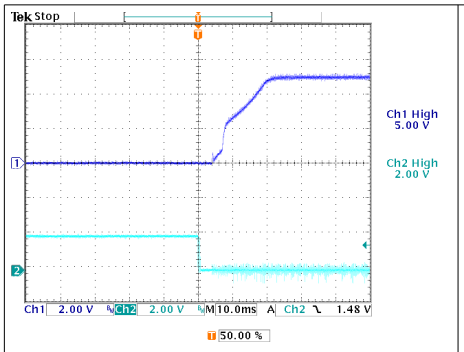
Model Number: COE48050P20S-25GP0

MODEL PARAMETERS

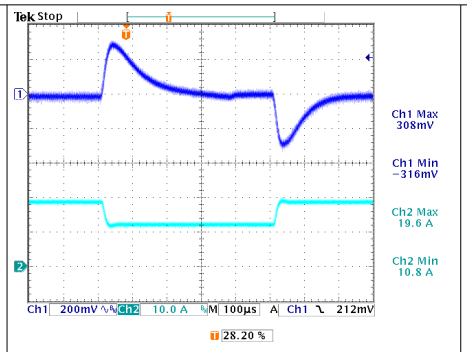
General		
Conversion Efficiency	Typical	See efficiency plots
Switching Frequency	Typical	330KHz

Input/Output		
Reflected Input Ripple Current	L_{EXT} = 10uH	20mA rms/60mAp-p
Input Ripple Rejection (<1KHz)	V_{NOM}, Full Load	-50dB
Voltage Accuracy	Typical	±1.0%
Line Regulation	Full Input Range	±0.2%
Load Regulation	0%~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%
Step Load (2.5A/μS)	50%~75% Load	±6%Vo/500μS
Start-Up Delay Time	V_{NOM}, Full Load	20mS/250mS

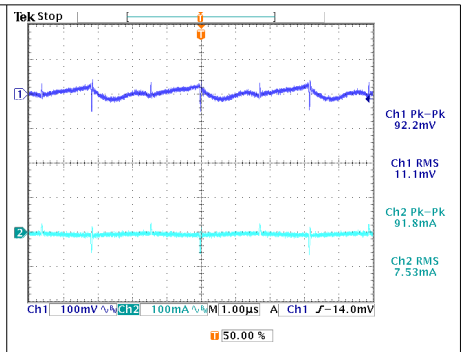
TYPICAL WAVES AND CURVES



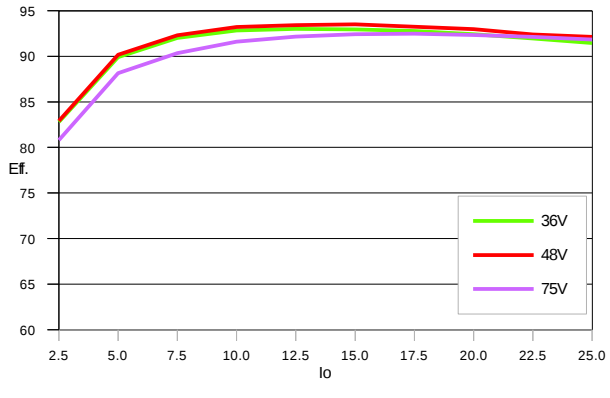
Start-up waveform of COE48050P20S-25GP0
(V_{IN}: 48V, Load: 25A)



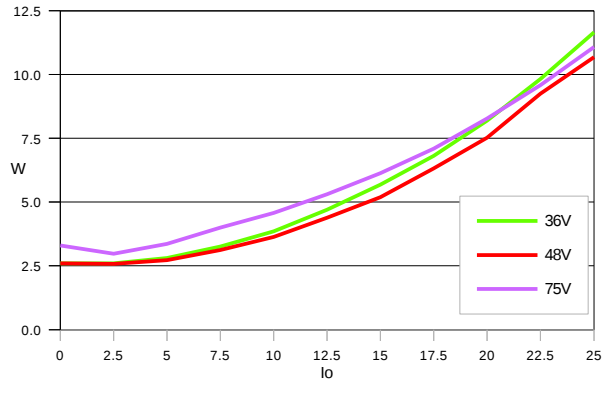
Transient response of COE48050P20S-25GP0
(V_{IN}: 48V, Load: 18.75A/12.5A@2.5A/μS)



Input/Output ripples of COE48050P20S-25GP0
(V_{IN}: 48V, Load: 25A, L_{IN}=10uH)



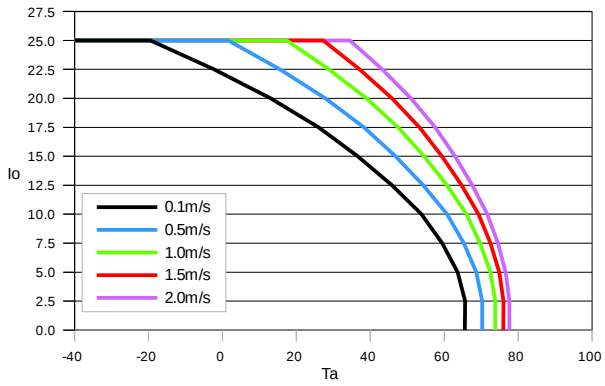
Efficiency plot of COE48050P20S-25GP0



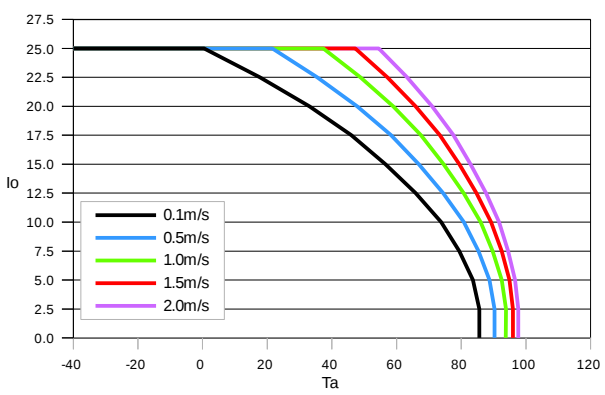
Power loss curves of COE48050P20S-25GP0

Model Number: COE48050P20S-25GP0

DERATING CURVES

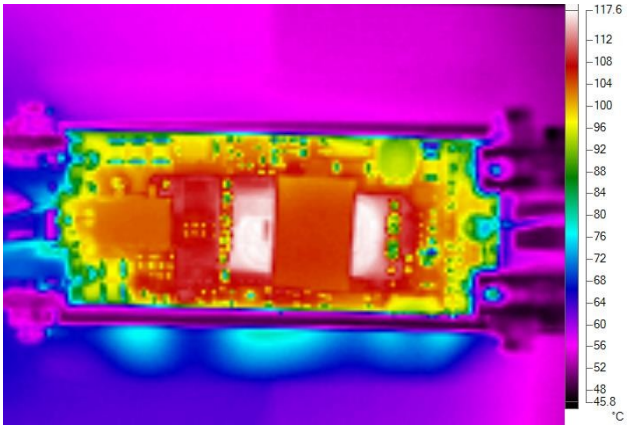


Calculated derating of COE48050P20S-25GP0 (T_C= 90ºC)

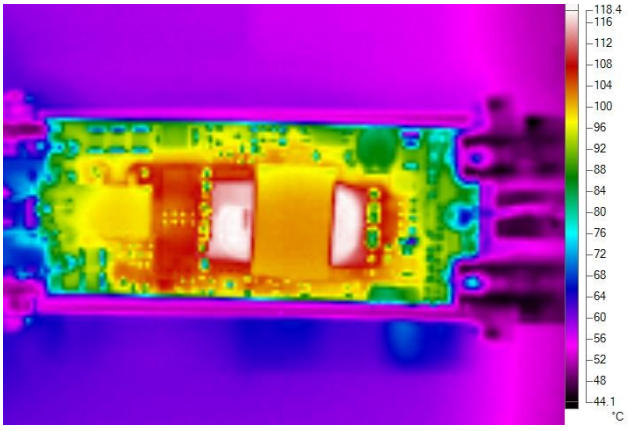


Calculated derating of COE48050P20S-25GP0 (T_C= 110ºC)

REFERENCED THERMAL IMAGES



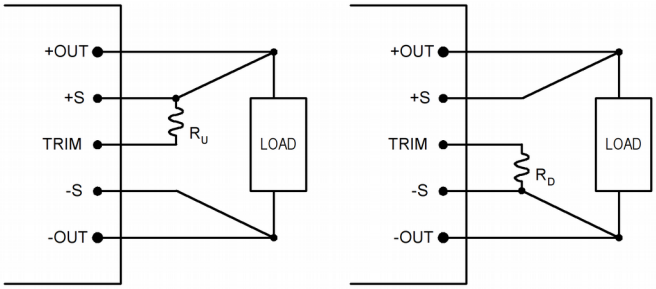
COE48050P20S-25GP0 (Io= 15.2A@57˚C/0.1m/Sec.)



COE48050P20S-25GP0 (Io= 18.8A@60˚C/2.0m/Sec.)

TRIM AND TRIM TABLE

The output of the power module can be adjusted for higher or lower than the rated voltage level by connecting the TRIM pin through a resistor to the pins of +S or -S respectively as shown as on the right hand side. The resistor for trimming output voltage higher or lower are denoted as R_U and R_D, which have different resistances for each different output voltage level. The resistance table for trimming the output voltage with 1% of step are listed as below for reference.



Trim Up	+1%	+2%	+3%	+4%	+5%	+6%	+7%	+8%	+9%	+10%	-	-	-	-	-	-	-	-	-	-
R_U (KΩ)	63.40	32.20	21.47	16.10	12.88	10.73	9.20	8.05	7.16	6.44	-	-	-	-	-	-	-	-	-	-

Trim Down	-1%	-2%	-3%	-4%	-5%	-6%	-7%	-8%	-9%	-10%	-	-	-	-	-	-	-	-	-	-
R_D (KΩ)	15.11	7.15	4.50	3.18	2.38	1.85	1.47	1.19	0.97	0.79	-	-	-	-	-	-	-	-	-	-

** Please contact Glary Power if a trim range beyond ±10% is needed.*

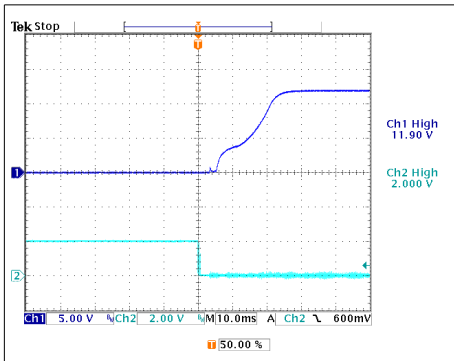
Model Number: COE48120P20S-11GP0

MODEL PARAMETERS

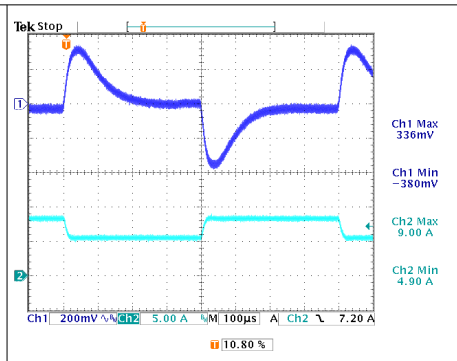
General		
Conversion Efficiency	Typical	See efficiency plots
Switching Frequency	Typical	330KHz

Input/Output		
Reflected Input Ripple Current	L_{EXT} = 10uH	20mA rms/60mAp-p
Input Ripple Rejection (<1KHz)	V_{NOM}, Full Load	-50dB
Voltage Accuracy	Typical	±1.0%
Line Regulation	Full Input Range	±0.2%
Load Regulation	0%~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%
Step Load (2.5A/μS)	50%~75% Load	±6%Vo/500μS
Start-Up Delay Time	V_{NOM}, Full Load	20mS/250mS

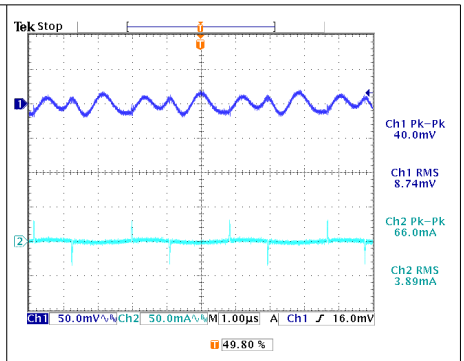
TYPICAL WAVES AND CURVES



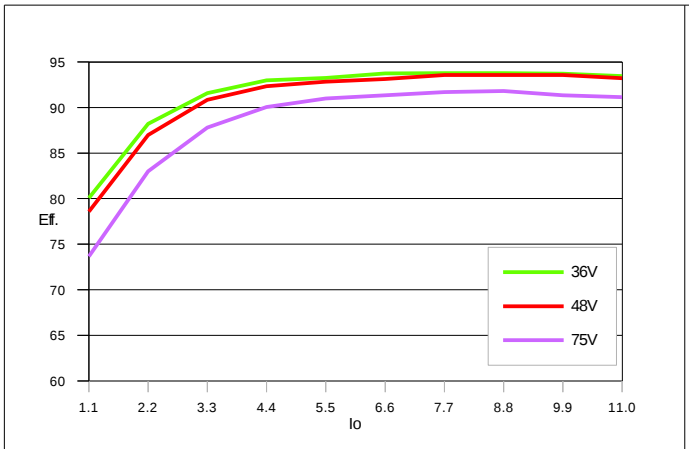
Start-up waveform of COE48120P20S-11GP0
(V_{IN}: 48V, Load: 11A)



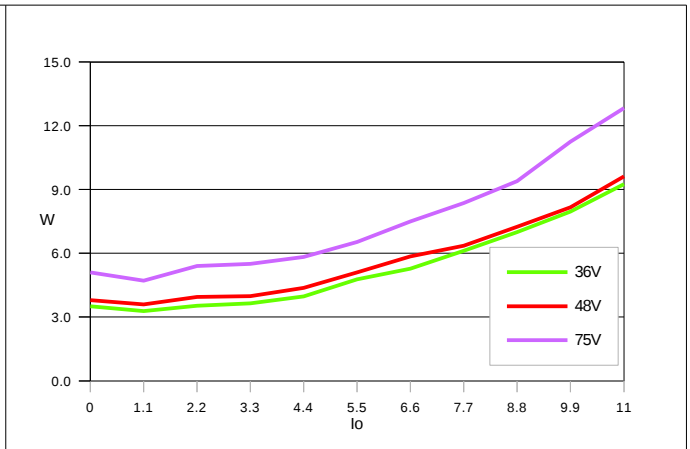
Transient response of COE48120P20S-11GP0
(V_{IN}: 48V, Load: 8.25A/5.5A@2.5A/μS)



Input/Output ripples of COE48120P20S-11GP0
(V_{IN}: 48V, Load: 11A, L_{IN}=10uH)



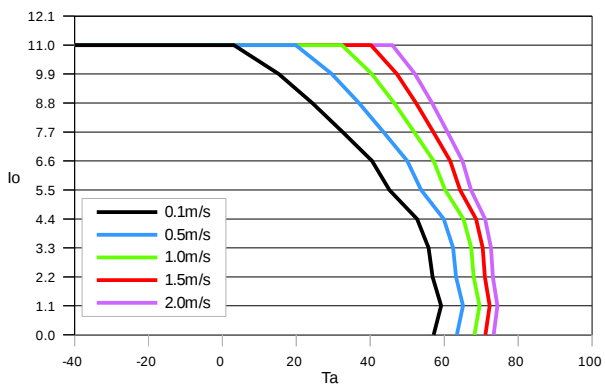
Efficiency plot of COE48120P20S-11GP0



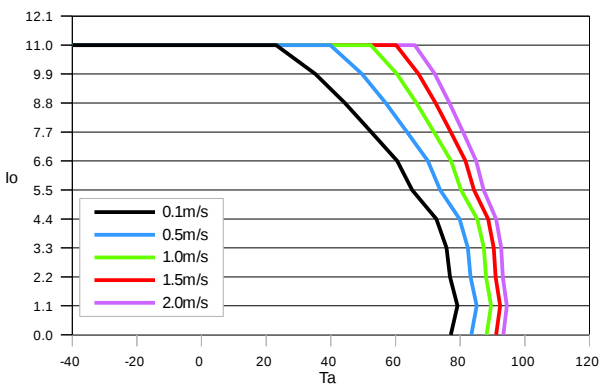
Power loss curves of COE48120P20S-11GP0

Model Number: COE48120P20S-11GP0

DERATING CURVES

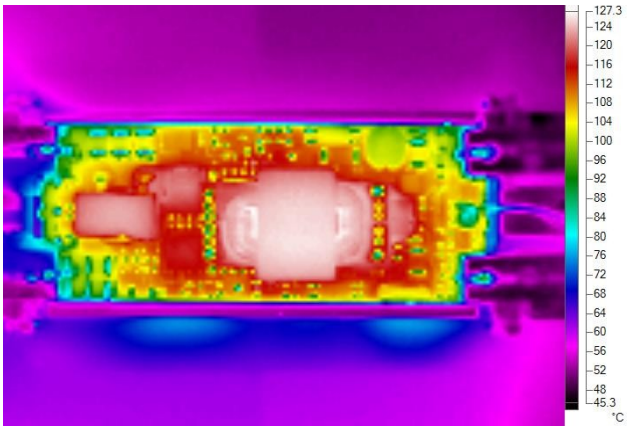


Calculated derating of COE48120P20S-11GP0 (T_C= 90ºC)

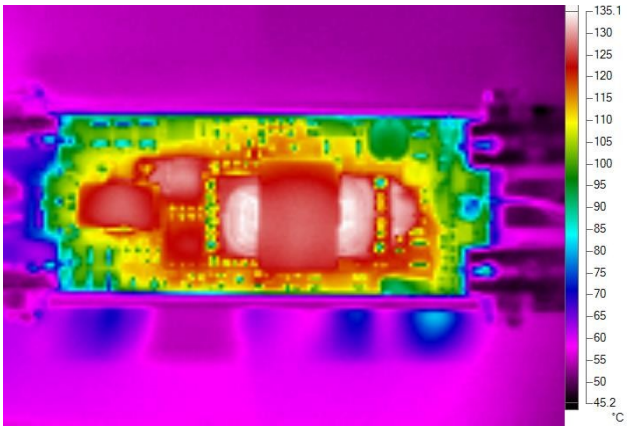


Calculated derating of COE48120P20S-11GP0 (T_C= 110ºC)

REFERENCED THERMAL IMAGES



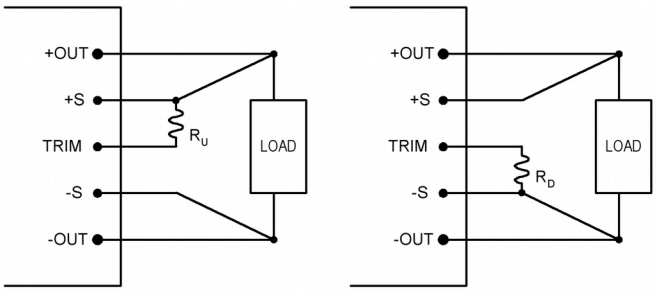
COE48120P20S-11GP0 (Io= 8.0A@51˚C/0.1m/Sec.)



COE48120P20S-11GP0 (Io= 8.0A@51˚C/2.0m/Sec.)

TRIM AND TRIM TABLE

The output of the power module can be adjusted for higher or lower than the rated voltage level by connecting the TRIM pin through a resistor to the pins of +S or -S respectively as shown as on the right hand side. The resistor for trimming output voltage higher or lower are denoted as R_U and R_D, which have different resistances for each different output voltage level. The resistance table for trimming the output voltage with 1% of step are listed as below for reference.

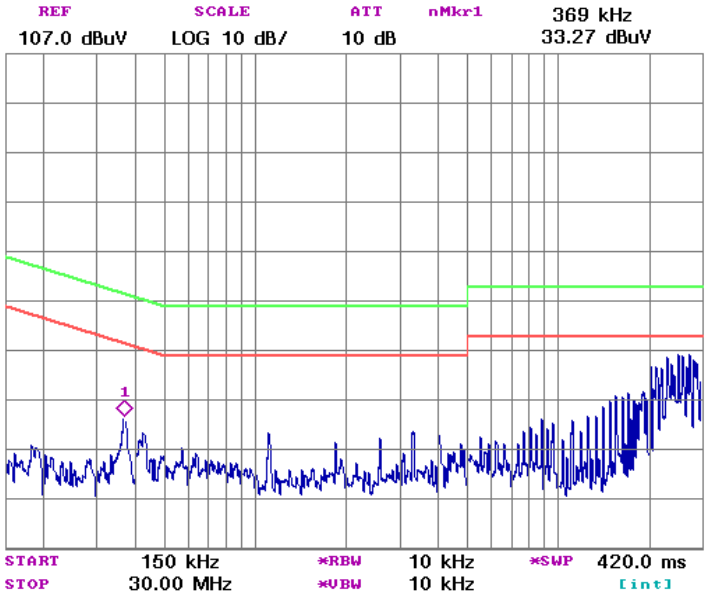


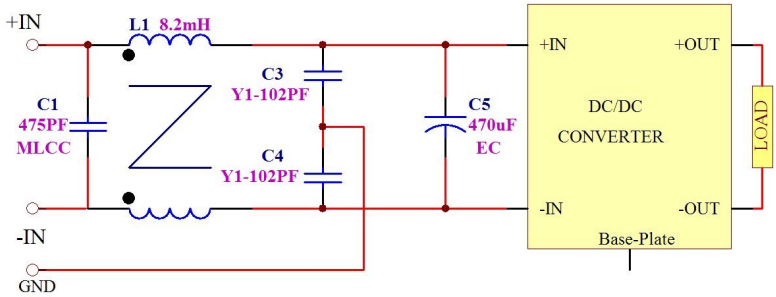
Trim Up	+1%	+2%	+3%	+4%	+5%	+6%	+7%	+8%	+9%	+10%	-	-	-	-	-	-	-	-	-	-
R_U (KΩ)	159.0	79.50	53.00	39.75	31.80	26.50	22.71	19.87	17.67	15.90	-	-	-	-	-	-	-	-	-	-

Trim Down	-1%	-2%	-3%	-4%	-5%	-6%	-7%	-8%	-9%	-10%	-	-	-	-	-	-	-	-	-	-
R_D (KΩ)	39.00	18.50	11.67	8.25	6.20	4.83	3.86	3.13	2.56	2.10	-	-	-	-	-	-	-	-	-	-

** Please contact Glary Power if a trim range beyond ±10% is needed.*

REFERENCED EMC CIRCUIT





Measured conductive level of COE48050abcd-XXXXX and referenced filter circuit

Referenced EMC Performance

The tested result shown in left-hand side is obtained by loading the power module with a resistive load only. It can be used as a design reference for customer system. However! The performance of customer's system depends on the whole system design. It should be noted that modifications on the circuit parameters and fine adjustment of the final layout would affect the final EMC performance greatly.

Bandwidth of EMC Components

No components are ideal for infinite frequency range. The bandwidth of EMC components should be taking into consideration when designing an EMC filter circuit. To connect ceramic capacitor with electrolytic capacitor in parallel and connect low inductance inductor in series with high inductance inductor could get a better bandwidth.

NOTE:

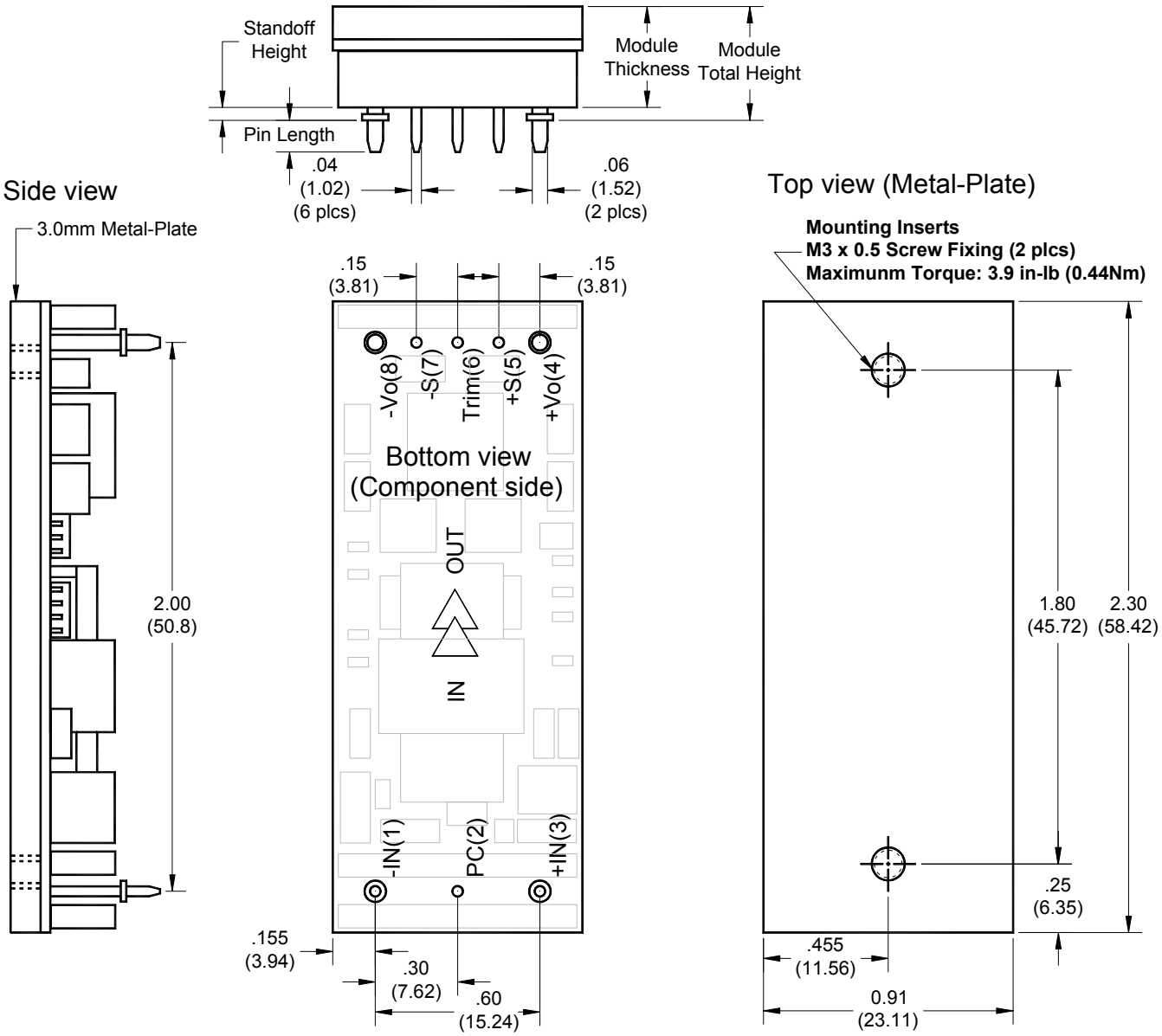
1. **It is recommended that the input should be protected by fuses or other protection devices.**
2. All specifications are typical at nominal input, full load and 25°C unless otherwise noted.
3. Specifications are subject to change without notice.
4. Printed or downloaded datasheets are not subject 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.

IMPORTANT

※ General specifications and the performances are related to standard series only, no special customer specification display here except requested items.

※ In order to secure effective usage of converter and the validity of Glary's service and warranty coverage, please refer to the application notes for general usage. For needs of usage beyond the application notes, please contact to Glary headquarter or our regional sales representative office for help.

MECHANICAL DRAWING



Dimensions and Pin Connections

Designation	Function Description	Pin #
-IN	Negative input	**1**
PC	Remote control. To turn-on and turn-off output.	**2**
+IN	Positive input	**3**
+Vo	Positive output	**4**
+S	Positive remote sense	**5**
TRIM	Output voltage adjust	**6**
-S	Negative remote sense	**7**
-Vo	Negative output	**8**

Dimensions: inches (mm)

Tolerances: .xx±0.02 (.x±0.5)
.xxx±0.01 (.x±0.25)

Weight: 32g / 3.0mm metal plate
Base plate: Anode oxide aluminum alloy

Mounting inserts: Stainless steel for M3
Maximum torque: 3.9 in-lb (0.44Nm)

Pin material: Copper alloy or Brass

Pin plating: Golden over Nickel