E32 SERIES

Hex-Brick DC/DC Converter

230W / 25A · 36-75V or 18-36V Input · Patented Buck-Reset Forward
> 94% Peak Efficiency · 230 W/in³ · 4.80 × 10■ hrs MTBF

OCP | OVP | OTP | Remote ON/OFF | Voltage Trim ±10% | Remote Sense | -60°C to +130°C | 100 Bar Pressure | RoHS | CE Approved

230W	25A	>94%	230 W/in³	4.80M hrs	480 kHz
MAX OUTPUT	MAX CURRENT	PEAK EFF.	POWER DENSITY	MTBF	SWITCH FREQ

PRODUCT OVERVIEW

The E32 Series is the industry-first Hex-Brick isolated DC/DC converter providing 5V/25A, 12V/10A and 24V/5A from 18-36V or 36-75V input ranges. Operating at -60°C to +130°C, the E32 is engineered for the most demanding environments: deep-water probes (1 mBar to 100 Bar), high-altitude instruments, defense systems, and harsh industrial equipment where conventional DC/DC modules cannot survive. The patented Buck-Reset Forward topology with Partial-Resonant-Synchronous-Rectifier stage at 480 kHz achieves 94% efficiency and 230 W/in³. A 60 nS ultra-fast current limiting circuit eliminates Short-Circuit-Current-Runaway for non-Ohmic loads. Wide-band Droop Current Sharing allows direct parallel connection without a current share bus.

PART NUMBER SYSTEM

E32	24 / 48	050 / 120 / 240	P / N	XYZ
Series	Input Voltage	Output Voltage	Enable Logic	Suffix

Input: 24 = 18V~36V | 48 = 36V~75V Output: 050 = 5.0V | 120 = 12.0V | 240 = 24.0V
Enable: P = Positive Logic (+3V-6.5V = ON) | N = Negative Logic (0V-1V = ON)
Note: A factory-issued Part Code is required in addition to the model number for all E32 orders.

TARGET APPLICATIONS

Deep Water Probes 1 mBar – 100 Bar	**High Altitude Instruments** -60°C Operation	**Defense & Military** Harsh Vibration
Industrial Extreme Sealed Metal Case	**Parallel Power Systems** Droop Current Share	**Non-Ohmic Loads** 60 nS Ultra-fast OCP

OUTPUT CAPACITIVE LOAD & SHORT CIRCUIT LIMITS

Part Number	Max Cap Load	Pre-bias VB	Reverse IB	Short Circ IS
E3224050a / E3248050a	<10,000 uF @ 200 mOhm	<4.75V	<100mA	<50A @ 2mOhm
E3224120a / E3248120a	<1,000 uF @ 1,200 mOhm	<11.4V	<100mA	<25A @ 2mOhm
E3224240a / E3248240a	<330 uF @ 4,800 mOhm	<22.8V	<100mA	<10A @ 2mOhm

DROOP CURRENT SHARING — KEY FEATURES

Feature	E32 Droop Current Sharing
No Share Bus	Direct parallel output connection — no noise-sensitive current share bus
Bandwidth	Droop loop BW equals voltage loop — responds to 2.5A/uS load transients
Step Load	0A → 20A step at 2.5A/uS: settling within 20uS, no overshoot
Share Error	< 5% current share error per module at 30A total output current
Max Parallel	Multiple E32 modules — e.g. 3× E3248120a = 360W @ 12V

INPUT

48V Operating Range	**+36V to +75V DC**
24V Operating Range	**+18V to +36V DC**
48V Transient (100ms)	**100V Maximum**
24V Transient (100ms)	**50V Maximum**
48V Power-ON Threshold	**+34.0V to +36.0V**
24V Power-ON Threshold	**+17.0V to +18.0V**
48V Power-OFF Threshold	**+31.2V to +33.2V**
24V Power-OFF Threshold	**+15.6V to +16.6V**
Off-State Input Current	**6 mA Max (at Vnom)**
Latch-State Input Current	**8 mA Max (at Vnom)**
Reflected Ripple Current	**20 mA rms / 60 mA p-p**
Input Capacitance (48V)	**14.0 uF Max**
Input Capacitance (24V)	**20.0 uF Max**
Ripple Rejection (<1 kHz)	**-50 dB (Vnom, Full Load)**

REMOTE CONTROL

Logic High — Enable	**+3.0V to +6.5V**
Logic Low — Disable	**0V to +1.0V**
PC Pin Voltage Range	**-0.5V to +12V DC**
PC Pin Input Current	**-0.5 mA to +1.5 mA**
Positive Logic (P)	**High = Output ON**
Negative Logic (N)	**Low = Output ON**

OUTPUT

Voltage Accuracy	**+/-1.0% typical**
Line Regulation	**+/-0.2% (full range)**
Load Regulation	**+/-0.2% (10-100% load)**
Temperature Drift	**+/-0.03%/degC (-60 to +130)**
Output Tolerance Band	**+/-4% (all conditions)**
Ripple & Noise (20 MHz)	**3% p-p / 1% RMS of Vo**
Over-Voltage Protection	**115-130% Vo**
Over-Current Limit	**120-140% Io (at Vnom)**
Voltage Trim Range	**+/-10% Vo (Vnom, 10% load)**
Step Load (2.5 A/uS)	**+/-6% Vo / 500 uS**
Start-Up Delay	**20 ms / 250 ms (full load)**

GENERAL PARAMETERS

Switching Frequency	**480 kHz typical**
MTBF (Bellcore TR-332 #6)	**4.80x10^6 hrs @ GB/25 degC**
OTP Trip Point	**130 degC (Tc) +/-5 degC**
Weight	**16 g**

MECHANICAL

Dimensions (L x W x H)	**25.49 x 26.50 x 11.00 mm**
Base Plate	**Anodized aluminum alloy**
Mounting Inserts	**M2 stainless steel, 2 places**
Max Torque	**1.0 in-lb (0.1 Nm)**
Pin Material	**Copper alloy or Brass**
Pin Plating	**Golden over Nickel**
Pressure Rating	**1 mBar to 100 Bar**

ISOLATION VOLTAGE

Input to Output	**2.0 kV Minimum**
Input to Case	**1.0 kV Minimum**
Output to Case	**1.0 kV Minimum**

ABSOLUTE MAXIMUM RATINGS

Input Voltage 24V Models	**-0.5V to +40V DC**
Input Voltage 48V Models	**-0.5V to +80V DC**
Remote Control	**-0.5V to +12V DC**
Operating Temperature	**-60 degC to +130 degC**
Storage Temperature	**-60 degC to +155 degC**

WARNING — Do Not Exceed Absolute Maximum Ratings
Exceeding these limits may permanently damage the device and voids warranty. Always protect input with a fuse.

Compliance & Approvals: RoHS 2002/95/EC Bellcore TR-332 MTBF

48V Bus Series (36V ~ 75V Input)

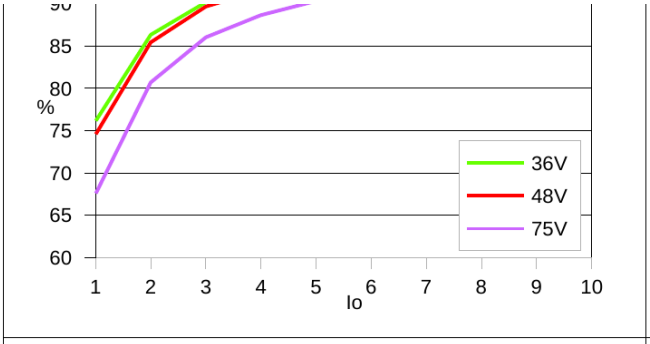
Part Number	Input	Vout	Iout	Pout	Eff.
E3248050a	36-75V	5.0V	25A	125W	92%
E3248120a	36-75V	12.0V	10A	120W	94%
E3248240a	36-75V	24.0V	5A	120W	93%

24V Bus Series (18V ~ 36V Input)

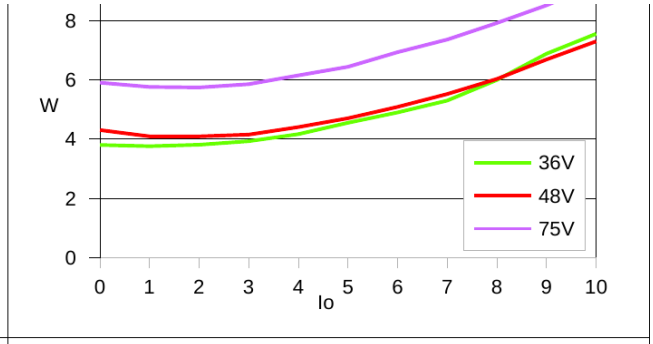
Part Number	Input	Vout	Iout	Pout	Eff.
E3224050a	18-36V	5.0V	25A	125W	91%
E3224120a	18-36V	12.0V	10A	120W	93%
E3224240a	18-36V	24.0V	5A	120W	92%

** Contact OneTech Integration for special input/output configurations. Factory Part Code required for all orders.*

EFFICIENCY VS. LOAD CURRENT — E3248120A (VIN: 36V / 48V / 75V)



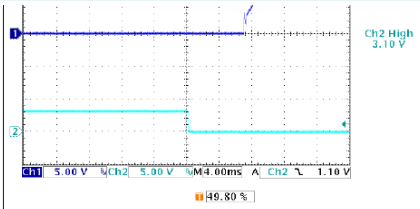
Efficiency plot of E3248120a



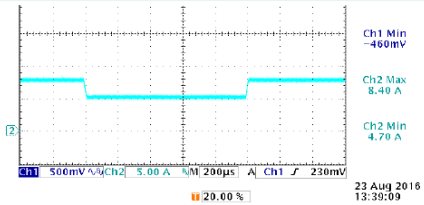
Power loss curves of E3248120a

TYPICAL WAVEFORMS — E3248120A (VIN: 48V, LOAD: 10A)

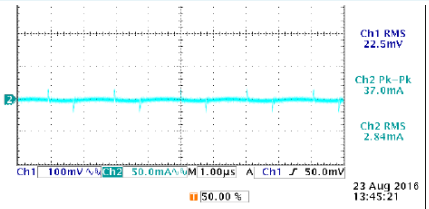
Start-up Waveform · Transient Response (5A/7.5A @ 2.5A/uS) · Input/Output Ripple (LIN=10uH)



Start-up waveform of E3248120a
(V_{IN}: 48V, Load: 10A)



Transient response of E3248120a
(V_{IN}: 48V, Load: 5A/7.5A@2.5A/µS)



Input/Output ripples of E3248120a
(V_{IN}: 48V, Load: 10A, L_{IN}=10uH)

KEY PERFORMANCE DATA — E3248120a (48V Input, 12V/10A Output, Representative)

Peak Efficiency	**>94% @ 48V Input, 6A Load**	Step Load Transient	**+/-6% Vo within 500 uS**
Efficiency @ Full Load	**~92.5% @ 48V, 10A**	Transient Recovery	**<500 uS to +/-1% Vo band**
Power Loss @ Full Load	**~7.4W (92.5% efficiency)**	Input Ripple Rejection	**-50 dB at <1 kHz**
Switching Frequency	**480 kHz (typical)**	Output Ripple (20MHz)	**<3% pk-pk / <1% RMS of Vo**
Start-up Time	**20mS (to 90% Vo) / 250mS (to Vnom)**	Droop Share Settling	**<20 uS for 0A→20A step**

Model Number: E3224050a — 18-36V Input · 5.0V/25A Output · 450 kHz

MODEL PARAMETERS — ALL SPECIFICATIONS AT NOMINAL INPUT, FULL LOAD, 25°C UNLESS OTHERWISE NOTED

Conversion Efficiency	**See efficiency plots below**	Ripple & Noise (20MHz)	**3% (1%) Vo peak-peak (RMS)**
Switching Frequency	**450 kHz (typical)**	Over Voltage Protection	**115-130% Vo @ Vnom, 10% Load**
Voltage Accuracy	**+/-1.0% typical**	Output Current Limits	**120-140% @ Vnom**
Line Regulation	**+/-0.2% (full input range)**	Voltage Trim	**+/-10% @ Vnom, 10% Load**
Load Regulation	**+/-0.2% (10-100%, sensing pins connected)**	Input Ripple Rejection	**-50 dB (<1 kHz, Vnom, Full Load)**
Temperature Drift	**+/-0.03%/degC (-60 to +130 degC)**	Step Load (2.5A/uS)	**+/-6% Vo / 500uS (50-75% Load)**
Output Tolerance Band	**+/-4% (all conditions)**	Start-Up Delay Time	**20mS / 250mS @ Vnom, Full Load**

APPLICATION NOTES

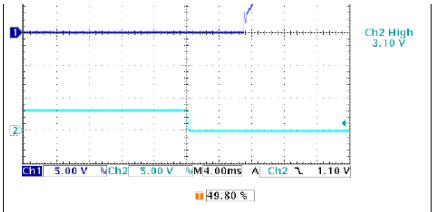
Input E3224050a operates from 18-36V DC. Fuse each input individually. External input capacitor recommended to eliminate source oscillation.

Output Rated 5.0V/25A. Trim +/-10% via TRIM pin resistor to -S or +S. R-S resistor configures V-BUS compensation and droop sharing.

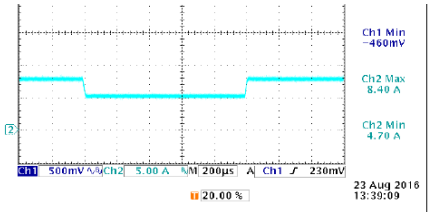
Thermal Operating range -60 degC to +130 degC. Forced-air and cold-plate cooling both supported. Double-side M2 screw attachment for secure mounting.

OCP Note 60 nS ultra-fast current limit eliminates Short-Circuit-Current-Runaway. Effective for capacitive, inductive, and non-Ohmic load applications.

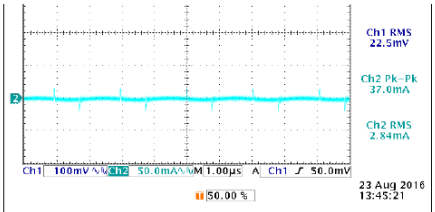
TYPICAL WAVES AND CURVES — E3248120A (VIN: 48V, LOAD: 10A, REPRESENTATIVE)



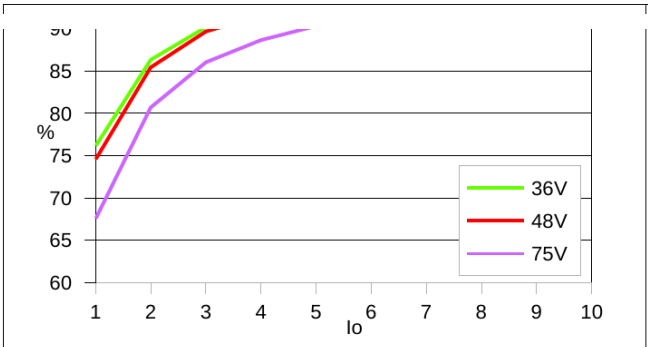
Start-up waveform of E3248120a
(V_{IN}: 48V, Load: 10A)



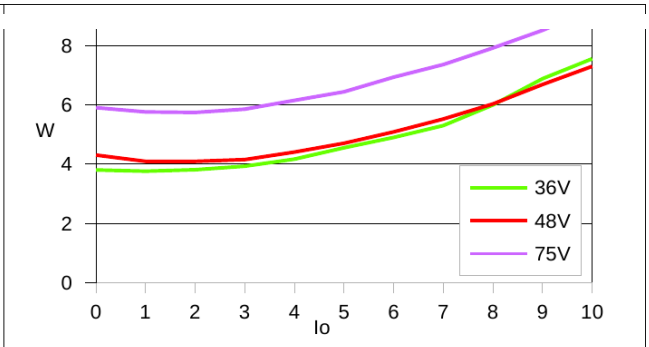
Transient response of E3248120a
(V_{IN}: 48V, Load: 5A/7.5A@2.5A/µS)



Input/Output ripples of E3248120a
(V_{IN}: 48V, Load: 10A, L_{IN}=10uH)



Efficiency plot of E3248120a



Power loss curves of E3248120a

Model Number: E3224120a — 18-36V Input · 12.0V/10A Output · 480 kHz

MODEL PARAMETERS — ALL SPECIFICATIONS AT NOMINAL INPUT, FULL LOAD, 25°C UNLESS OTHERWISE NOTED

Conversion Efficiency	**See efficiency plots below**	Ripple & Noise (20MHz)	**3% (1%) Vo peak-peak (RMS)**
Switching Frequency	**480 kHz (typical)**	Over Voltage Protection	**115-130% Vo @ Vnom, 10% Load**
Voltage Accuracy	**+/-1.0% typical**	Output Current Limits	**120-140% @ Vnom**
Line Regulation	**+/-0.2% (full input range)**	Voltage Trim	**+/-10% @ Vnom, 10% Load**
Load Regulation	**+/-0.2% (10-100%, sensing pins connected)**	Input Ripple Rejection	**-50 dB (<1 kHz, Vnom, Full Load)**
Temperature Drift	**+/-0.03%/degC (-60 to +130 degC)**	Step Load (2.5A/uS)	**+/-6% Vo / 500uS (50-75% Load)**
Output Tolerance Band	**+/-4% (all conditions)**	Start-Up Delay Time	**20mS / 250mS @ Vnom, Full Load**

APPLICATION NOTES

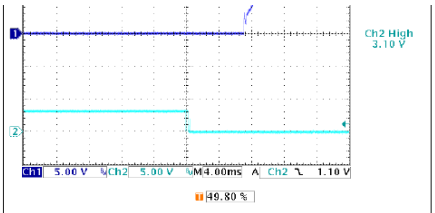
Input E3224120a operates from 18-36V DC. Fuse each input individually. External input capacitor recommended to eliminate source oscillation.

Output Rated 12.0V/10A. Trim +/-10% via TRIM pin resistor to -S or +S. R-S resistor configures V-BUS compensation and droop sharing.

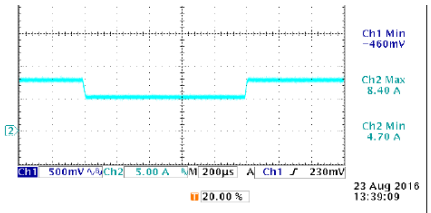
Thermal Operating range -60 degC to +130 degC. Forced-air and cold-plate cooling both supported. Double-side M2 screw attachment for secure mounting.

OCP Note 60 nS ultra-fast current limit eliminates Short-Circuit-Current-Runaway. Effective for capacitive, inductive, and non-Ohmic load applications.

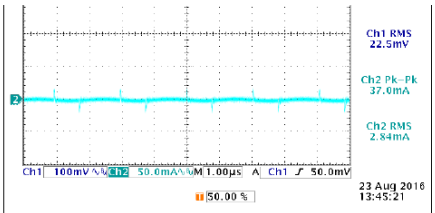
TYPICAL WAVES AND CURVES — E3248120A (VIN: 48V, LOAD: 10A, REPRESENTATIVE)



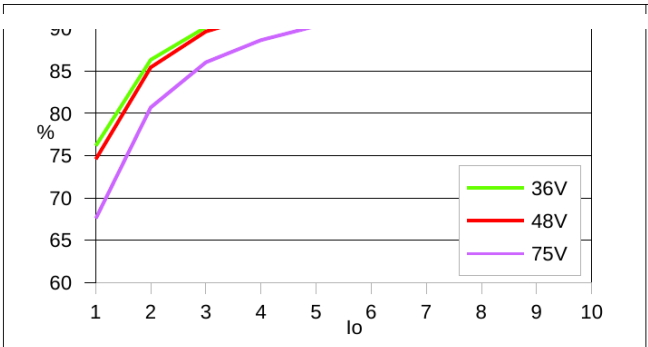
Start-up waveform of E3248120a
(V_{IN}: 48V, Load: 10A)



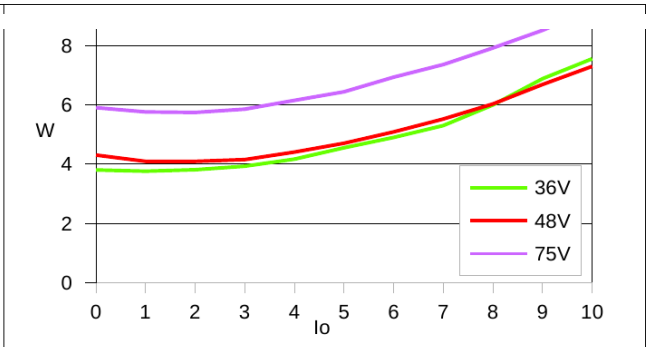
Transient response of E3248120a
(V_{IN}: 48V, Load: 5A/7.5A@2.5A/µS)



Input/Output ripples of E3248120a
(V_{IN}: 48V, Load: 10A, L_{IN}=10uH)



Efficiency plot of E3248120a



Power loss curves of E3248120a

Model Number: E3224240a — 18-36V Input · 24.0V/5A Output · 480 kHz

MODEL PARAMETERS — ALL SPECIFICATIONS AT NOMINAL INPUT, FULL LOAD, 25°C UNLESS OTHERWISE NOTED

Conversion Efficiency	**See efficiency plots below**	Ripple & Noise (20MHz)	**3% (1%) Vo peak-peak (RMS)**
Switching Frequency	**480 kHz (typical)**	Over Voltage Protection	**115-130% Vo @ Vnom, 10% Load**
Voltage Accuracy	**+/-1.0% typical**	Output Current Limits	**120-140% @ Vnom**
Line Regulation	**+/-0.2% (full input range)**	Voltage Trim	**+/-10% @ Vnom, 10% Load**
Load Regulation	**+/-0.2% (10-100%, sensing pins connected)**	Input Ripple Rejection	**-50 dB (<1 kHz, Vnom, Full Load)**
Temperature Drift	**+/-0.03%/degC (-60 to +130 degC)**	Step Load (2.5A/uS)	**+/-6% Vo / 500uS (50-75% Load)**
Output Tolerance Band	**+/-4% (all conditions)**	Start-Up Delay Time	**20mS / 250mS @ Vnom, Full Load**

APPLICATION NOTES

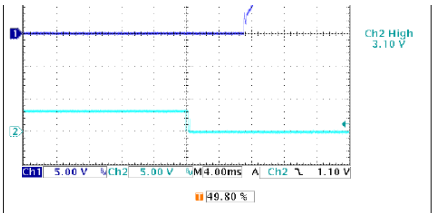
Input E3224240a operates from 18-36V DC. Fuse each input individually. External input capacitor recommended to eliminate source oscillation.

Output Rated 24.0V/5A. Trim +/-10% via TRIM pin resistor to -S or +S. R-S resistor configures V-BUS compensation and droop sharing.

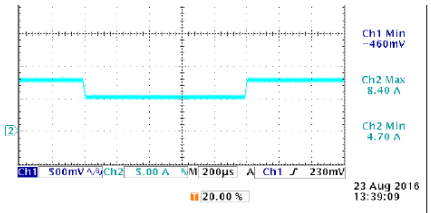
Thermal Operating range -60 degC to +130 degC. Forced-air and cold-plate cooling both supported. Double-side M2 screw attachment for secure mounting.

OCP Note 60 nS ultra-fast current limit eliminates Short-Circuit-Current-Runaway. Effective for capacitive, inductive, and non-Ohmic load applications.

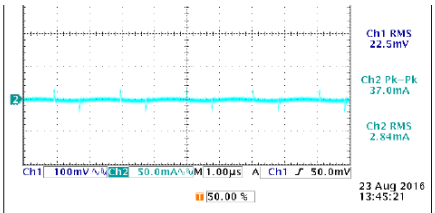
TYPICAL WAVES AND CURVES — E3248120A (VIN: 48V, LOAD: 10A, REPRESENTATIVE)



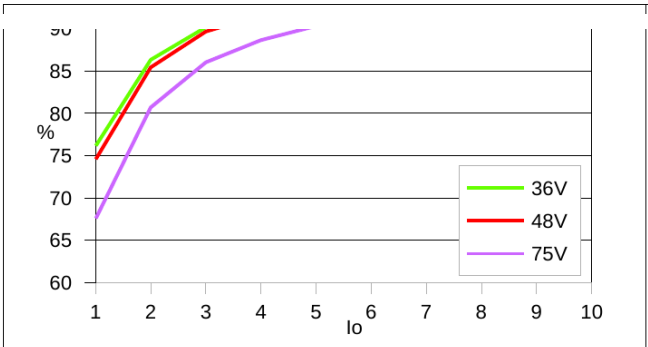
Start-up waveform of E3248120a
(V_{IN}: 48V, Load: 10A)



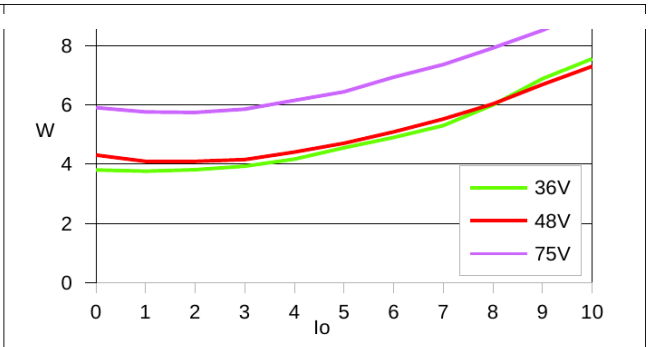
Transient response of E3248120a
(V_{IN}: 48V, Load: 5A/7.5A@2.5A/µS)



Input/Output ripples of E3248120a
(V_{IN}: 48V, Load: 10A, L_{IN}=10uH)



Efficiency plot of E3248120a



Power loss curves of E3248120a

Model Number: E3248050a — 36-75V Input · 5.0V/25A Output · 470 kHz

MODEL PARAMETERS — ALL SPECIFICATIONS AT NOMINAL INPUT, FULL LOAD, 25°C UNLESS OTHERWISE NOTED

Conversion Efficiency	**See efficiency plots below**	Ripple & Noise (20MHz)	**3% (1%) Vo peak-peak (RMS)**
Switching Frequency	**470 kHz (typical)**	Over Voltage Protection	**115-130% Vo @ Vnom, 10% Load**
Voltage Accuracy	**+/-1.0% typical**	Output Current Limits	**120-140% @ Vnom**
Line Regulation	**+/-0.2% (full input range)**	Voltage Trim	**+/-10% @ Vnom, 10% Load**
Load Regulation	**+/-0.2% (10-100%, sensing pins connected)**	Input Ripple Rejection	**-50 dB (<1 kHz, Vnom, Full Load)**
Temperature Drift	**+/-0.03%/degC (-60 to +130 degC)**	Step Load (2.5A/uS)	**+/-6% Vo / 500uS (50-75% Load)**
Output Tolerance Band	**+/-4% (all conditions)**	Start-Up Delay Time	**20mS / 250mS @ Vnom, Full Load**

APPLICATION NOTES

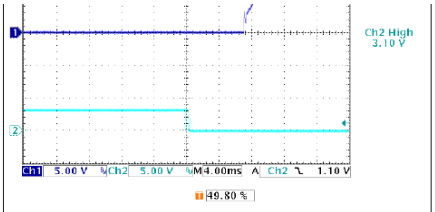
Input E3248050a operates from 36-75V DC. Fuse each input individually. External input capacitor recommended to eliminate source oscillation.

Output Rated 5.0V/25A. Trim +/-10% via TRIM pin resistor to -S or +S. R-S resistor configures V-BUS compensation and droop sharing.

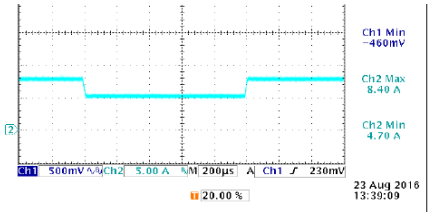
Thermal Operating range -60 degC to +130 degC. Forced-air and cold-plate cooling both supported. Double-side M2 screw attachment for secure mounting.

OCP Note 60 nS ultra-fast current limit eliminates Short-Circuit-Current-Runaway. Effective for capacitive, inductive, and non-Ohmic load applications.

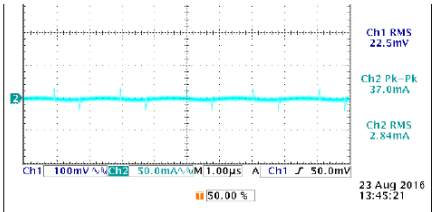
TYPICAL WAVES AND CURVES — E3248120A (VIN: 48V, LOAD: 10A, REPRESENTATIVE)



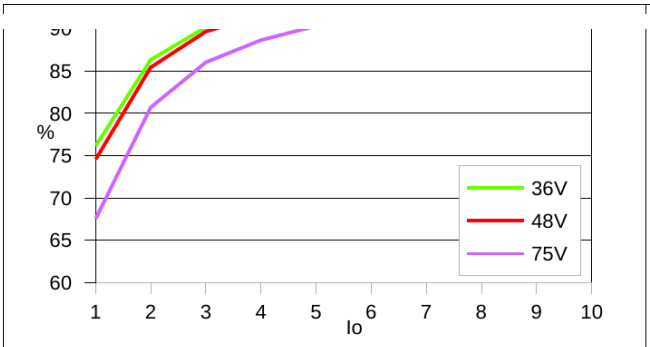
Start-up waveform of E3248120a
(V_{IN}: 48V, Load: 10A)



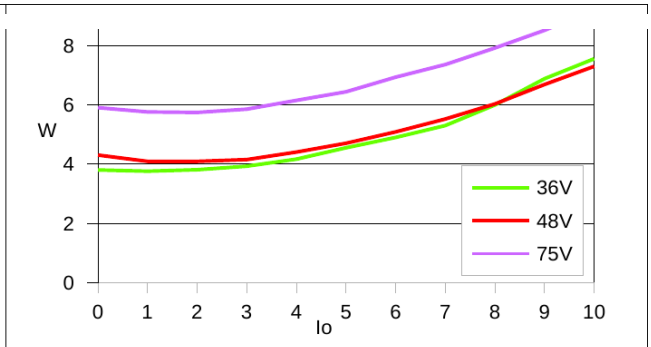
Transient response of E3248120a
(V_{IN}: 48V, Load: 5A/7.5A@2.5A/µS)



Input/Output ripples of E3248120a
(V_{IN}: 48V, Load: 10A, L_{IN}=10uH)



Efficiency plot of E3248120a



Power loss curves of E3248120a

Model Number: E3248120a — 36-75V Input · 12.0V/10A Output · 480 kHz

MODEL PARAMETERS — ALL SPECIFICATIONS AT NOMINAL INPUT, FULL LOAD, 25°C UNLESS OTHERWISE NOTED

Conversion Efficiency	**See efficiency plots below**	Ripple & Noise (20MHz)	**3% (1%) Vo peak-peak (RMS)**
Switching Frequency	**480 kHz (typical)**	Over Voltage Protection	**115-130% Vo @ Vnom, 10% Load**
Voltage Accuracy	**+/-1.0% typical**	Output Current Limits	**120-140% @ Vnom**
Line Regulation	**+/-0.2% (full input range)**	Voltage Trim	**+/-10% @ Vnom, 10% Load**
Load Regulation	**+/-0.2% (10-100%, sensing pins connected)**	Input Ripple Rejection	**-50 dB (<1 kHz, Vnom, Full Load)**
Temperature Drift	**+/-0.03%/degC (-60 to +130 degC)**	Step Load (2.5A/uS)	**+/-6% Vo / 500uS (50-75% Load)**
Output Tolerance Band	**+/-4% (all conditions)**	Start-Up Delay Time	**20mS / 250mS @ Vnom, Full Load**

APPLICATION NOTES

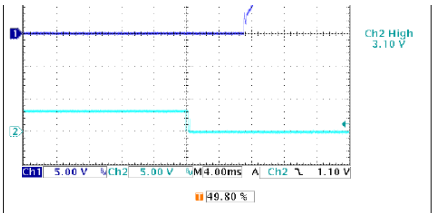
Input E3248120a operates from 36-75V DC. Fuse each input individually. External input capacitor recommended to eliminate source oscillation.

Output Rated 12.0V/10A. Trim +/-10% via TRIM pin resistor to -S or +S. R-S resistor configures V-BUS compensation and droop sharing.

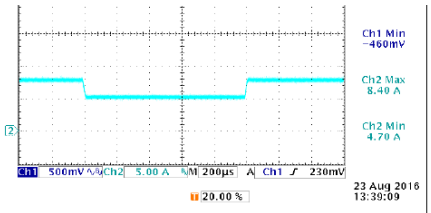
Thermal Operating range -60 degC to +130 degC. Forced-air and cold-plate cooling both supported. Double-side M2 screw attachment for secure mounting.

OCP Note 60 nS ultra-fast current limit eliminates Short-Circuit-Current-Runaway. Effective for capacitive, inductive, and non-Ohmic load applications.

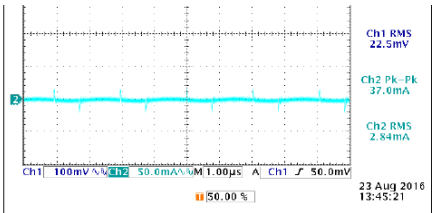
TYPICAL WAVES AND CURVES — E3248120A (VIN: 48V, LOAD: 10A, REPRESENTATIVE)



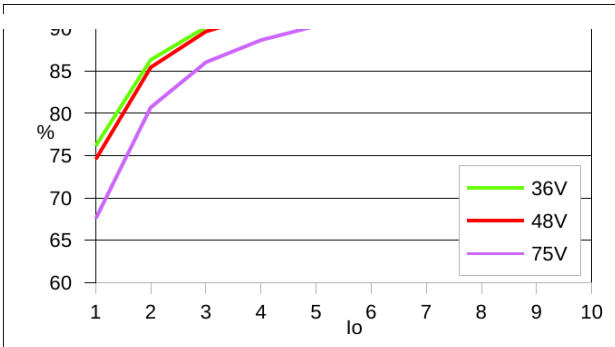
Start-up waveform of E3248120a
(V_{IN}: 48V, Load: 10A)



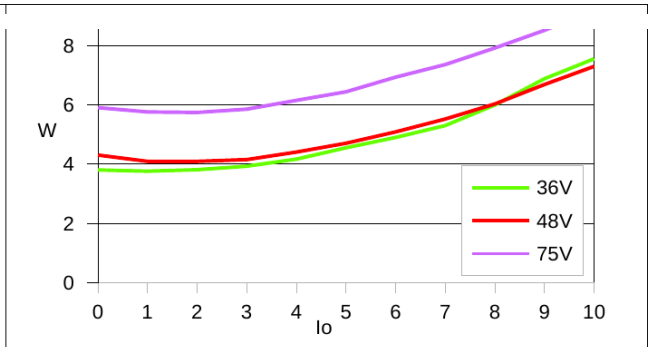
Transient response of E3248120a
(V_{IN}: 48V, Load: 5A/7.5A@2.5A/µS)



Input/Output ripples of E3248120a
(V_{IN}: 48V, Load: 10A, L_{IN}=10uH)



Efficiency plot of E3248120a



Power loss curves of E3248120a

Model Number: E3248240a — 36-75V Input · 24.0V/5A Output · 480 kHz

MODEL PARAMETERS — ALL SPECIFICATIONS AT NOMINAL INPUT, FULL LOAD, 25°C UNLESS OTHERWISE NOTED

Conversion Efficiency	**See efficiency plots below**	Ripple & Noise (20MHz)	**3% (1%) Vo peak-peak (RMS)**
Switching Frequency	**480 kHz (typical)**	Over Voltage Protection	**115-130% Vo @ Vnom, 10% Load**
Voltage Accuracy	**+/-1.0% typical**	Output Current Limits	**120-140% @ Vnom**
Line Regulation	**+/-0.2% (full input range)**	Voltage Trim	**+/-10% @ Vnom, 10% Load**
Load Regulation	**+/-0.2% (10-100%, sensing pins connected)**	Input Ripple Rejection	**-50 dB (<1 kHz, Vnom, Full Load)**
Temperature Drift	**+/-0.03%/degC (-60 to +130 degC)**	Step Load (2.5A/uS)	**+/-6% Vo / 500uS (50-75% Load)**
Output Tolerance Band	**+/-4% (all conditions)**	Start-Up Delay Time	**20mS / 250mS @ Vnom, Full Load**

APPLICATION NOTES

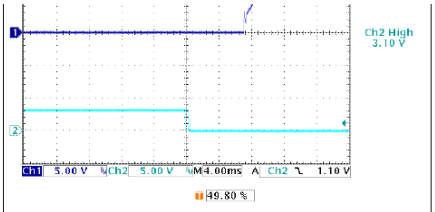
Input E3248240a operates from 36-75V DC. Fuse each input individually. External input capacitor recommended to eliminate source oscillation.

Output Rated 24.0V/5A. Trim +/-10% via TRIM pin resistor to -S or +S. R-S resistor configures V-BUS compensation and droop sharing.

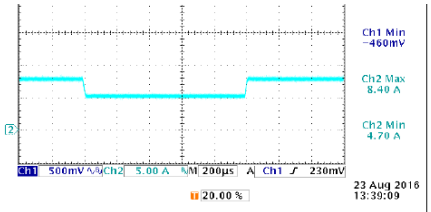
Thermal Operating range -60 degC to +130 degC. Forced-air and cold-plate cooling both supported. Double-side M2 screw attachment for secure mounting.

OCP Note 60 nS ultra-fast current limit eliminates Short-Circuit-Current-Runaway. Effective for capacitive, inductive, and non-Ohmic load applications.

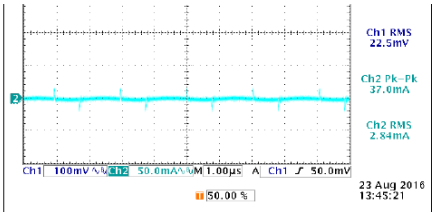
TYPICAL WAVES AND CURVES — E3248120A (VIN: 48V, LOAD: 10A, REPRESENTATIVE)



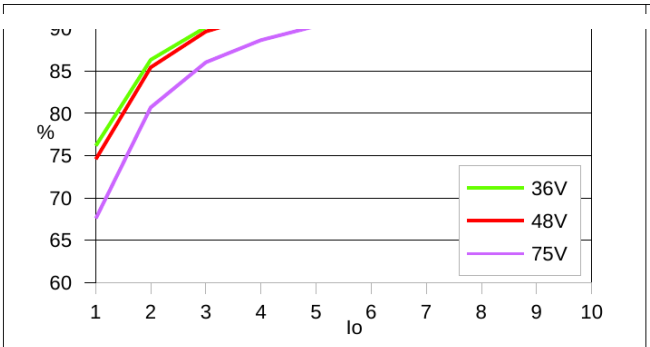
Start-up waveform of E3248120a
(V_{IN}: 48V, Load: 10A)



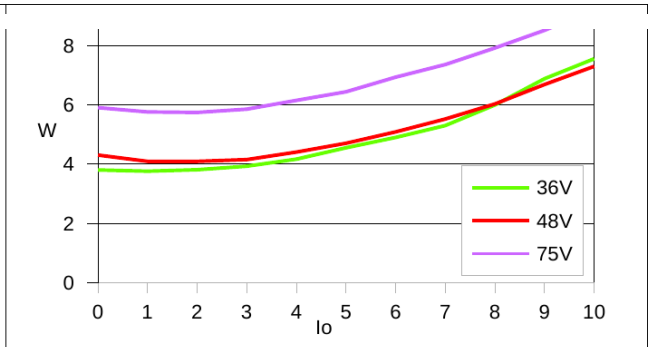
Transient response of E3248120a
(V_{IN}: 48V, Load: 5A/7.5A@2.5A/µS)



Input/Output ripples of E3248120a
(V_{IN}: 48V, Load: 10A, L_{IN}=10uH)



Efficiency plot of E3248120a



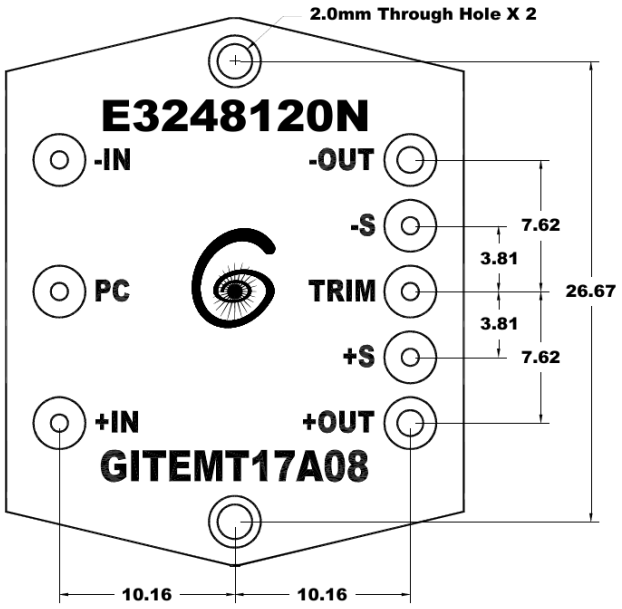
Power loss curves of E3248120a

MECHANICAL DRAWING & PIN CONNECTIONS

All dimensions in mm. Tolerances: .x ±0.5 mm / .xx ±0.25 mm. Weight: 16g. Base plate: Anodized aluminum alloy. Mounting: M2 S/S, 2 places, Max torque: 1.0 in-lb (0.1 Nm)

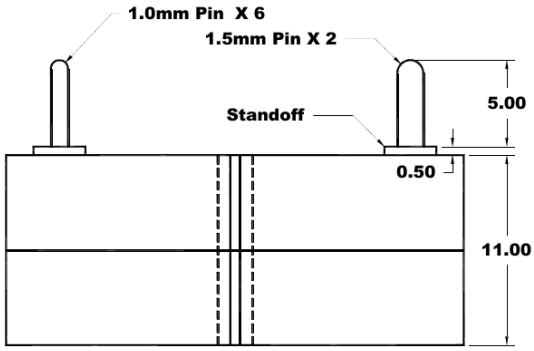
MECHANICAL DRAWING

Bottom View



Top View

Side View



Dimensions and Pin Connections

Designation	Function Description	Pin #
-IN	Negative input	1
PC	Primary control: ON/OFF and Synchronization.	2
+IN	Positive input	3
+OUT	Positive output	4
+S	Positive remote sense	5
TRIM	Output voltage adjust	6
-S	Negative remote sense	7
-OUT	Negative output	8

Dimensions: mm
Tolerances: .x±0.5mm
.xx±0.25mm
Weight: 16g / Metal enclosed
Metallic case: Anode oxide aluminum alloy
Mounting inserts: Stainless steel for M2
Maximum torque: 1.0 in-lb (0.1Nm)
Pin material: Copper alloy or Brass
Pin plating: Golden over Nickel

ORDERING INFORMATION

E32	24/48	050/120/240	P / N	XYZ
Series	Input	Output	Enable	Part Code

Input: 24 = 18V~36V | 48 = 36V~75V Output: 050 = 5.0V/25A | 120 = 12.0V/10A | 240 = 24.0V/5A

Enable: P = Positive Logic (+3V-6.5V = ON) | N = Negative Logic (0V-1V = ON)

Example: E3248120N — 48V input · 12.0V/10A output · Negative enable logic · + factory Part Code

Field	Code	Description
Series	**E32**	Hex-Brick DC/DC Converter
Input Voltage	**24**	18V~36V input (24V bus)
	48	36V~75V input (48V bus)
Output Voltage	**050**	5.0V / 25A
	120	12.0V / 10A
	240	24.0V / 5A
Enable Logic	**N**	Negative Logic (0V-1V = ON)
	P	Positive Logic (+3V-6.5V = ON)
Part Code	**XYZ**	Factory-issued — required for all orders

IMPORTANT NOTES

- ! Input MUST be protected by fuses or overcurrent protection device.
- i A factory Part Code is required — model number alone is insufficient.
- i All specifications at nominal input, full load, 25 degC unless noted.
- i Specifications subject to change without notice.
- i Not for life-critical, nuclear, or hazardous system applications.
- i Contact OneTech Integration for custom configurations.
- i Do not cut pins, remove potting, or modify without written consent.
- i Remote sense compensates max 0.5V. Exceeding may cause instability.
- i Trim range beyond +/-10% available — contact OneTech Integration.

PCB LAYOUT — PAD SPECIFICATIONS

Pin Type	Hole	Pad	Via Requirement
1.0mm Pins (x6)	1.25mm	2.0mm min	4-8 x 0.5mm vias per hole
1.5mm Pins (x2)	1.80mm	3.0mm min	4-8 x 0.5mm vias per hole

SOLDERING GUIDELINES

Method	Specification
Hand Solder	425 degC iron, 70W. 3-6 sec per 1.0mm pin. 5-10 sec per 1.5mm
Wave Solder	Max solder pot 250 degC. Wave dwell time 3 seconds typical, 6 s
De-moisture	Bake at 85 degC / 12 hrs before soldering if MSL1 storage period
Removal	Desolder using desoldering tool only. Never pry, force, or bend pi
Cleaning	Compatible with most agents. Verify compatibility with silicone pot
Storage	Store at 30 degC / 60%RH. Gold pin plating supports long-term s

GENERAL APPLICATION NOTES

Topic	Guidance
Input Fuse	Use slow-blow fuse; lowest rating allowing normal start-up sequence.
Input Cap	External capacitor recommended to reduce source impedance and pr
Output Cap	Low-ESR capacitor close to load handles high-frequency transient cur
OVP Recovery	To recover from OVP latch: cycle input power off/on or toggle PC pin.
Parallel Use	-S droop resistor must be configured identically on all paralleled modu
Trim Up	Connect RU between TRIM and -S. Verify output stays below OVP se
Trim Down	Connect RD between TRIM and +S. Verify output meets minimum loa

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