

EXB50-48D05-3V3N02

Dual positive output

- Two independently regulated positive outputs
- Each output offers ultra-wide output voltage trim range (1.5V to 5.25V)
- High efficiency topology, 89% typical
- Approved to IEC60950, UL/cUL1950
- Operating ambient temperature of -40°C to +70°C (natural convection)
- No minimum load on either output
- Complies with ETS 300 019-1-3/2-3 and ETS 300 386-1



The EXB50-48D05-3V3N02 is a 50W independently regulated dual output DC/DC converter specifically designed to meet the power needs of low voltage silicon. Housed in an open frame package with an industry standard 1/2 brick footprint, the EXB50-48D05-3V3N02 can deliver up to 8.5A from either output, and up to 11A in total, at temperatures of up to 70°C under natural convection. With some forced air and/or reduced ambient temperatures, EXB50-48D05-3V3N02 can deliver up to 8.5A from either output, and up to 17A in total. The converter is primarily intended for the networking, telecoms and wireless markets, where small size, lower output voltages with higher currents, low profile and high efficiency are all key demands. Product features include wide output trim and remote on/off. Overvoltage, short circuit and over-temperature protection combines to make the EXB50-48D05-3V3N02 a very robust and flexible product.



2 YEAR WARRANTY

All specifications are typical at $V_{in} = 48V$, $I_{o1} = 5A$, $I_{o2} = 5A$, $T_{amb} = 25^{\circ}C$ unless otherwise stated

SPECIFICATIONS

OUTPUT SPECIFICATIONS

Voltage adjustability	EXB50-48D05-3V3N02	1.5V to 5.25V
Voltage accuracy	Both outputs	$\pm 2\%$ max.
Line regulation	Low line to high line	$V_{out1} \pm 2\%$
	Low line to high line	$V_{out2} \pm 2\%$
Load regulation	Full load to no load	$\pm 2\%$
Minimum load	Both outputs	0%
Ripple and noise 20MHz bandwidth	Both outputs	150mV pk-pk max. 30mV rms max.
Transient response peak dev. settling time	3A to 5A (1A/10 μ s) and back	150mV 400 μ s
Short circuit protection	EXB50-48D05-3V3N02	15A rms

INPUT SPECIFICATIONS

Input voltage range	48Vin nominal	36 to 75VDC
Input current	No load	100mA max.
	Remote OFF	4mA max.
UVLO turn ON voltage	All inputs	34V typ.
UVLO turn OFF voltage	All inputs	33V typ.
Active high remote ON/OFF Logic compatibility	ON OFF	Open collector ref. to -input Open circuit voltage or >3.2VDC <0.4VDC

EMC CHARACTERISTICS

ETS 300 386-1 table 5		
Conducted emissions (See Note 3)	EN55022 with external filter	Level A
Radiated emissions	EN55022 with external filter	Level B
Immunity:	EN55022	Level A
ESD air	EN61000-4-2 8kV (NP), 15kV (RP)	
ESD contact	EN61000-4-2 6kV (NP), 8kV (RP)	
EFT DC power	EN61000-4-4 2kV (NP), 4kV (LFS)	
EFT signal	EN61000-4-4 1kV (NP), 2kV (LFS)	
Radiated field enclosure	EN61000-4-3 10V/m (NP)	
Surges indoor signal	EN61000-4-5 500V (RP)	
Conducted (DC power)	EN61000-4-6 10V (NP)	
Conducted (signal)	EN61000-4-6 10V (NP)	
Input transients	ETS 300 132-2, ETR 283	

GENERAL SPECIFICATIONS

Efficiency		89% typ.
Basic insulation	Input/output	1500VDC
Input fuse 48V	(See Note 2)	4A slow blow HRC
Switching frequency (fixed)	EXB50-48D05-3V3N02	300kHz
Approvals and standards		IEC60950 UL/cUL1950
Material Flammability		UL94V-0
Weight		42g (1.48oz)
MTBF	MIL-HDBK-217	177,362 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance (See Notes 4)	Operating ambient temperature	-40°C to +100°C, see curves
	Non-operating	-40°C to +120°C
ETS 300 019-2-3		Classes T3.1 to T3.5
Air temperature	Low: IEC 68-2-1	-40°C
	High: IEC 68-2-2	+70°C
	Change: IEC 68-2-14	-40°C to +70°C
Relative humidity	IEC 68-2-56	10% to 100% RH
	IEC 68-2-30	Condensation

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Dual positive output

DC/DC CONVERTERS | 50W High Efficiency DC/DC Converters

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INPUT VOLTAGE	OUTPUT VOLTAGE		OUTPUT CURRENT ⁽⁶⁾		OVP ⁽¹⁾		TYPICAL EFFICIENCY	MODEL NUMBER
	1	2	1	2	1	2		
36-75VDC	5.05V	3.3V	7.5A	7.5A	6.25V	4.12V	89%	EXB50-48D05-3V3N02

Notes

- Latching OVP response time is 2ms (typ.). OVP latch is reset by toggling the control input, or by cycling the input voltage.
- User must provide recommended fuses in order to comply with safety approvals.
- Meets both level A and level B conducted emissions only with external components connected before the input pins to the converter.
- Maximum temperature on hotspots not to exceed 110°C.
- For stable operation connect an external output capacitor of at least 100µF to each output. Recommended capacity AVX TPS series (e.g. TPSD107*010#0100) or equivalents.
- Maximum total current from the module is 15A for EXB50-48D05-3V3N02 with airflow.

PROTECTION

Short circuit protection	Continuous
Oversvoltage protection	Latching
Thermal protection	125°C with automatic recovery

TELECOM SPECIFICATION

Central office interface A	ETS300-132-2 input voltage and current requirements
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CAUTION: Hazardous internal voltages and high temperatures. Ensure that unit is not user accessible.

PIN CONNECTIONS

PIN NUMBER	FUNCTION
1	- Vin
2	No Pin
3	Remote ON/OFF
4	+ Vin
5	Vo1 Trim
6	Vo1 Return
7	Vo1+
8	Vo2 Trim
9	Vo2 Return
10	Vo2+

EXTERNAL OUTPUT TRIMMING

