

# EXB100 Series

## Single output

NEW Product

- Ultra wide trim range, 60% to 110% (1.08V to 5.5V)
- High efficiency, 91.5% @ 5V, 90.5% @ 3.3V, 87.5% @ 1.8V
- Basic insulation (input to output)
- Industry standard half-brick pin-out
- No minimum load
- Over-voltage and over-temperature protection
- Remote ON/OFF

The EXB100 series of 100W single output isolated DC/DC converters are specially designed to meet the power needs of low voltage silicon. Housed in an open-frame package with standard footprint, these latest generation converters offer efficiencies as high as 91.5% (typical on 5V at 20A). The series comprises three 48V input models with 5V, 3.3V and 1.8V outputs. All models feature a wide input range, trimmable output voltage and 30A output (5V is limited to 20A). Remote sense and remote ON/OFF facilities are included as standard, and the converters are comprehensively protected against over-current, over-voltage and over-temperature conditions.



2 YEAR WARRANTY

All specifications are typical at nominal input, full load at 25°C unless otherwise stated

### SPECIFICATIONS

#### OUTPUT SPECIFICATIONS

Voltage adjustability		60% to 110%
Output setpoint accuracy		1.5%
Line regulation	Low line to high line	±0.2% max.
Load regulation	Full load to min. load	±0.4% max.
Total error band		3.0%
Minimum load		0%
Overshoot	At turn-on and turn-off	None
Undershoot		None
Ripple and noise	(See Note 1)	100mV pk-pk 50mV rms 5Hz to 20MHz
Transient response	Deviation	150mV 300µs recovery to within total error band (See Note 2)

#### INPUT SPECIFICATIONS

Input voltage range		36 to 75VDC
Input current	No load Remote OFF	150mA 20mA
Input current (max.)	(See Note 3)	3.15A max. @ I <sub>o</sub> max. and V <sub>in</sub> = 36 to 75V
Input reflected ripple	(See Note 4)	60mA (pk-pk)
Remote ON/OFF		(See Note 5)
Logic compatibility	Open collector ref to -input	>2VDC <1.2VDC
Under-voltage lockout	Power up Power down	36V 30V
Start-up time	Power up Remote ON/OFF	40ms 35ms (See Note 6)

#### EMC CHARACTERISTICS

Conducted emissions	EN55022 (See Note 7)	Level A
	EN55022 (See Note 7)	Level B
Radiated emissions	EN55022 (See Long Form Data Sheet)	Level A
Immunity:		
ESD air	EN61000-4-2 8kV, 15kV	
ESD contact	EN61000-4-2 6kV, 8kV	
Radiated field enclosure	EN61000-4-3 10V/m	
Conducted (DC power)	EN61000-4-6 10V	
Conducted (signal)	EN61000-4-6 10V	(See Note 5)
Input transients	ETS 300 132-2, ETR 283	

#### GENERAL SPECIFICATIONS

Efficiency		See table
Basic insulation	Input/output	1500VDC
Switching frequency	5V 3.3V, 1.8V	300kHz typ. 220kHz typ.
Approvals and standards	(See Note 8)	TÜV Product Service UL/cUL60950
Material flammability		UL94V-0
Weight		45g (1.59oz)
MTBF	MIL-HDBK-217F	115,000 hours
Representative model:	1V8 @ 48Vin, 40°C 100% load, ground benign BELLCORE 332	591,000 hours

#### ENVIRONMENTAL SPECIFICATIONS

Thermal performance	Operating ambient temperature Non-operating	-40°C to +90°C -40°C to +125°C
Altitude derating	3,000m 10,000m	20% 50%

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## Single output

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OVP	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER <sup>(9)</sup>
							LINE	LOAD	
100W	36-75VDC	6.0VDC	5.0V	0A	20A	91.5%	±0.2%	±0.4%	EXB100-48S05
100W	36-75VDC	3.9VDC	3.3V	0A	30A	90.5%	±0.2%	±0.4%	EXB100-48S3V3
54W	36-75VDC	2.2VDC	1.8V	0A	30A	87.5%	±0.2%	±0.4%	EXB100-48S1V8

### Notes

- 1 Measured as per recommended set-up. See Application Note 129 for details.
- 2  $di/dt = 0.1A/\mu s$ ,  $V_{in} = 48VDC$ ,  $T_c = 25^\circ C$ , load change = 0.5  $I_o$  max. to 0.75  $I_o$  max. and 0.75  $I_o$  max. to 0.5  $I_o$  max.
- 3 Recommended input fusing is a 5A HRC 200V rated fuse.
- 4 Measured with external filter. See Application Note 129 for details.
- 5 Signal line assumed <3m in length.
- 6 Start-up into resistive load.
- 7 The EXB100 meets levels A and B conducted emissions with external components. See Application Note 129 for details.
- 8 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
- 9 Negative remote ON/OFF option also available. Add suffix '-R' to part number, for example EXB100-48S3V3-R.

### PROTECTION

Short circuit protection Continuous

Overvoltage protection Non-latching clamp

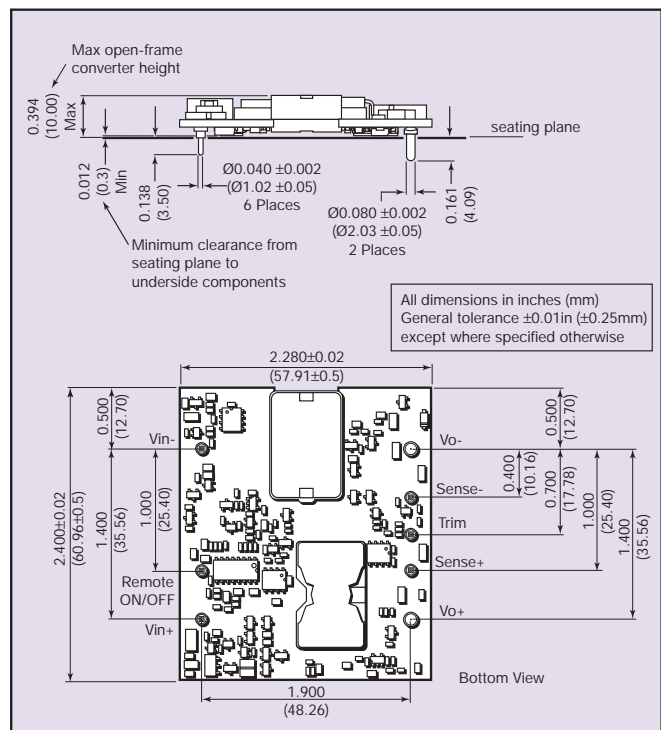
### TELECOM SPECIFICATION

Central office interface A ETS300-132-2 input voltage and current requirements

**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	+Vout
6	+Sense
7	Trim
8	-Sense
9	-Vout



### International Safety Standard Approvals



UL/cUL CAN/CSA 22.2 No. 60950-00 : UL 60950  
File No. E174104



TUV Product Service. Certificate No. B 02 02 38572 031

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Please consult our website for the following items: ✓ Application Note ✓ Longform Data Sheet

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