

CXE15 Series

Single output

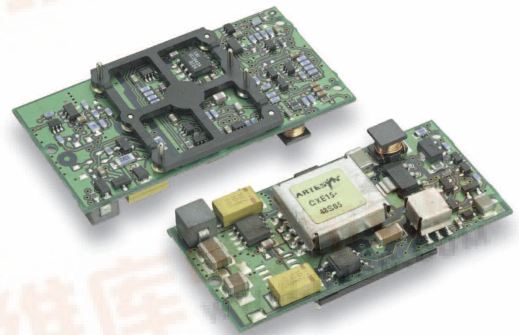
DC-DC CONVERTERS 15 W High Efficiency DC-DC Converters

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- High efficiency topology, 87% typical at 5 V
- Industry standard footprint
- Wide operating temperature, up to and exceeding 65 °C (natural convection)
- 90% to 110% output trim
- No minimum load
- Overvoltage protection
- Remote ON/OFF control
- Available RoHS compliant



The CXE15 is a new high efficiency open frame isolated 15 Watt converter series in an industry standard footprint. The CXE15 features an input voltage range of 33 Vdc to 75 Vdc and are available in output voltages of 5 V and 3.3 V. The output voltage on each model is adjustable from 90% to 110% of the nominal value. Typical efficiencies for the models are 87% for the 5 V and 86% for the 3.3 V. The CXE15 series also has a remote ON/OFF capability with active high or active low logic. Overcurrent and overvoltage protection features are included as standard. With full international safety approval including EN60950 and cUL1950, the CXE15 reduces compliance costs and time to market.



2 YEAR WARRANTY

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

SPECIFICATIONS

OUTPUT SPECIFICATIONS

Voltage adjustability		90% to 110%
Total error band	(See Note 11)	±3.5% max.
Line regulation	Low line to high line	0.1% max.
Load regulation	Full load to min. load	0.5% max.
Minimum load		0%
Overshoot		None
Undershoot		None
Ripple and noise (See Note 1)	5 Hz to 20 MHz	70 mV pk-pk 20 mV rms
Transient response typ. deviation	(See Note 2)	100 mV 400 µs recovery to within total error band

INPUT SPECIFICATIONS

Input voltage range	48 Vin nominal	33-75 Vdc
Input current	No load Remote OFF	35 mA max. 25 mA max.
Input current (max.)	(See Note 4)	0.55 A max. @ Io max. and Vin = 33-75 Vdc
Input reflected ripple	(See Note 6)	5 mA (pk-pk) typ.
Active high remote ON/OFF Logic compatibility ON OFF	(See Note 10) Open collector ref to -input Open circuit or >2 Vdc <1.2 Vdc	
Undervoltage lockout	Power up Power down	33 V (typ.) 30 V (typ.)
Start-up time (See Note 7)	Power up Remote ON/OFF	1.5 ms (typ.) 2.5 ms (typ.)

EMC CHARACTERISTICS

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

GENERAL SPECIFICATIONS

Efficiency		See table
Operational insulation	Input/output	1500 Vdc
Switching frequency	Fixed	265 kHz typ.
Approvals and standards (See Note 5)		UL/cUL1950, EN60950 TÜV Rheinland
Material flammability		UL94V-0
Weight		12 g (0.42 oz)
MTBF	MIL-HDBK-217F	3,628,000 hours
Representative model:	48S05J @ 48 Vin, 40 °C, 100% load ground benign BELLCORE 332	>1,500,000 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance (See Note 9)	Operating ambient temperature Non-operating	-40 °C to +65 °C -40 °C to +120 °C
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OUTPUT POWER (MAX.)	INPUT VOLTAGE	OVP	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER ^(10,12)
							LINE	LOAD	
15 W	33-75 Vdc	4 Vdc	3.3 V	0 A	4.5 A	86%	0.1%	0.5%	CXE15-48S3V3-SJ
15 W	33-75 Vdc	6 Vdc	5 V	0 A	3 A	87%	0.1%	0.5%	CXE15-48S05J

Notes

- 1 Measured as per recommended set-up. See Application Note 116 for details.
- 2 $di/dt = 0.1 \text{ A}/\mu\text{s}$, $V_{in} = 48 \text{ Vdc}$, $T_c = 25^\circ\text{C}$, 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 The CXE15 meets level A and level B conducted emissions only with external components connected before the input pins to the converter. See Application Note 116 for details.
- 4 Recommended input fusing is a 2 A HRC 200 V rated fuse.
- 5 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
- 6 Measured with external filter. See Application Note 116 for details.
- 7 Start-up into resistive load.
- 8 Signal line assumed < 3 m in length.
- 9 Operating ambient temperatures are specified at natural convection. Higher operating temperatures are possible with increased airflow. See Application Note 116 for details.
- 10 Remote ON/OFF (pin 3) and Trim (pin 5) are currently available individually or together. The CXE-48S05J model includes pins 1, 2, 4, and 6. The CXE15-48S3V3-SJ features pin 3 with positive logic.
- 11 This parameter is calculated at worst case line, load, temperature and initial settings.
- 12 The 'J' suffix indicates that these parts are Pb-free (RoHS 6/6) compliant. TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.

PROTECTION

Short circuit	Continuous
Overvoltage	Non-latching clamp

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.

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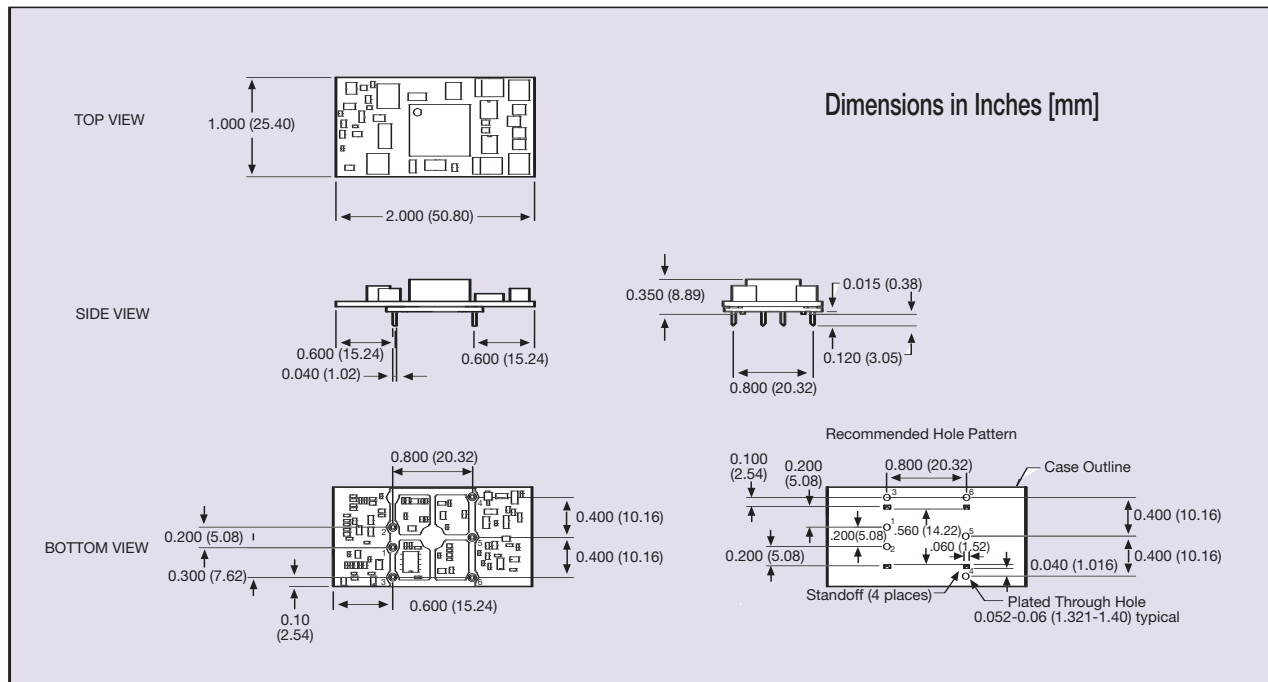
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PIN CONNECTIONS	
PIN NUMBER	FEATURE
1	Vin -
2	Vin +
3	On/Off (See Note 10)
4	Vout +
5	Trim (See Note 10)
6	Vout -

International Safety Standard Approvals

UL/cUL 1950 3rd edition. File No. E135734
 TÜV Rheinland. Certificate No. R2074133
 File No. 10401-3336-0916

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

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