

## CXA10 SERIES

Single and dual output



[ 2 YEAR WARRANTY ]  
CE (LVD)

- 4:1 input voltage range
- Approved to EN60950, UL1950, CSA C22.2 No. 950
- Operating ambient temperature of -40°C to +70°C in still air
- High demonstrated reliability with conservative component deratings
- Complies with ETS 300 019-1-3/2-3
- Complies with ETS 300 132-2 input voltage and current requirements
- Fully compliant with ETS 300 386-1
- Pin compatible with NFC10 and BXA10 series
- Basic insulation system (input to output)

The CXA10 series comprising of five different models delivers single and dual output voltages covering 3.3V, 5V, 12V,  $\pm 5V$ ,  $\pm 12$  and  $\pm 15V$ . The series has a wide 4:1 input voltage range of 18 to 75VDC. The CXA10 has been designed as a competitive open-frame alternative for the communications market. The product is supplied in the industry standard footprint of 2.0 x 1.0 x 0.394 inches. Other product features include overvoltage protection, short circuit protection and remote on/off. All components are placed in a fully automated environment. Planar magnetics are used in the design to improve the reliability and reduce the profile of the DC/DC converter. The series has full international safety approval to EN60950 and UL1950 reducing system compliance costs, and it has a basic insulation system from input to output making it suitable for a wide variety of applications.

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

| OUTPUT SPECIFICATIONS                        |   |                                      |
|--|---|--------------------------------------|
| Voltage accuracy                             |   | $\pm 1.0\%$                          |
| Line regulation (LL to HL)                   | Singles/dual positives<br>Dual negatives                | $\pm 0.1\%$<br>$\pm 0.2\%$           |
| Load regulation (not incl. cross reg.)       | Full load to minimum load                               | $\pm 0.15\%$                         |
| Min. load                                    | All outputs   | 10%                                  |
| Ripple and noise 20MHz bandwidth             | 3.3V and 5.0V<br>All others<br>All models               | 30mV pk-pk<br>60mV pk-pk<br>12mV rms |
| Temperature coefficient                      |   | $\pm 0.01\%/^{\circ}\text{C}$        |
| Overvoltage protection                       | Clamp type (See table and Notes 3,4)                    |                                      |
| Short circuit protection Short <20m $\Omega$ | Hiccup  | Continuous auto. recovery            |
| Transient response                           | Min. load to FL   | $\pm 1.0\%$                          |
| Load cross regulation                        | Min. load to FL (See Note 1)                            | $\pm 5.0\%$                          |
| INPUT SPECIFICATIONS                         |   |                                      |
| Input voltage range                          | 48Vin nominal   | 18 to 75VDC                          |
| Input fuse                                   | (See Note 10)   | 1.5A HRC                             |
| Max. input rise and fall time                | 48V ETS300 132-2  | 5V/ms                                |
| UVLO turn ON voltage (See Note 5)            |   | 94%                                  |
| UVLO turn OFF voltage (See Note 5)           |   | 86%                                  |
| Remote ON/OFF Logic compatibility ON OFF     | (See Note 7) CMOS/TTL/Open Collector Open circuit <1VDC |                                      |

| ELECTROMAGNETIC COMPATIBILITY SPECIFICATIONS    |   |   |
|---|---|---|
| ETS 300 386-1 table 5                           |   |   |
| Conducted emissions                             | EN55022 (See Note 6)<br>EN55022, external filter, VDE0878, 48V models | Level A<br>Level B                              |
| Radiated emissions ESD air                      | See Application Note 100<br>EN61000-4-2, level 3                      |   |
| ESD contact                                     | EN61000-4-2, level 4  |   |
| Surge (500V)                                    | EN61000-4-5, level 3,4  |   |
| Fast transients                                 | EN61000-4-4, level 3,4  |   |
| Radiated immunity                               | EN61000-4-3, level 3  |   |
| Conducted immunity                              | EN61000-4-6, level 3  |   |
| GENERAL SPECIFICATIONS                          |   |   |
| Efficiency                                      |   | See table                                       |
| Isolation voltage                               | Input/output test voltage   | 1500VDC   |
| Switching frequency                             | Fixed   | 400kHz  |
| Approvals and standards (See Notes 7,8,9,10,11) |   | EN60950, UL1950<br>CSA C22.2 No. 950            |
| Material flammability                           |   | UL94V-0   |
| Weight  |   | 12g (0.42 oz)                                   |
| MTBF (Representative model 48S05 @ 48Vin)       | MIL-HDBK-217F<br>Parts stress method<br>Ground Benign @ 25°C          | 456,621 hours                                   |
| ENVIRONMENTAL SPECIFICATIONS                    |   |   |
| Thermal performance                             | Operating ambient temperature<br>Non-operating                        | -40°C to +70°C<br>See curves<br>-55°C to +105°C |
| ETS 300 019-2-3                                 |   | Classes T3.1 to T3.5                            |
| Air temperature                                 | Low: IEC 68-2-1<br>High: IEC 68-2-2<br>Change: IEC 68-2-14            | -40°C<br>+70°C<br>-40°C to +70°C                |
| Relative humidity                               | IEC 68-2-56<br>IEC 68-2-30  | 10% to 100% RH<br>Condensation                  |
| Vibration, Class 3M5 9 to 200Hz 1g              | IEC68-2-6<br>MIL-STD-202F   | 2 to 9 Hz, 3mm disp.<br>Method 204 cond. A      |
| Shock, Class 3M5                                | IEC-68-2-29<br>MIL-STD-202F   | Method 213B cond. A                             |

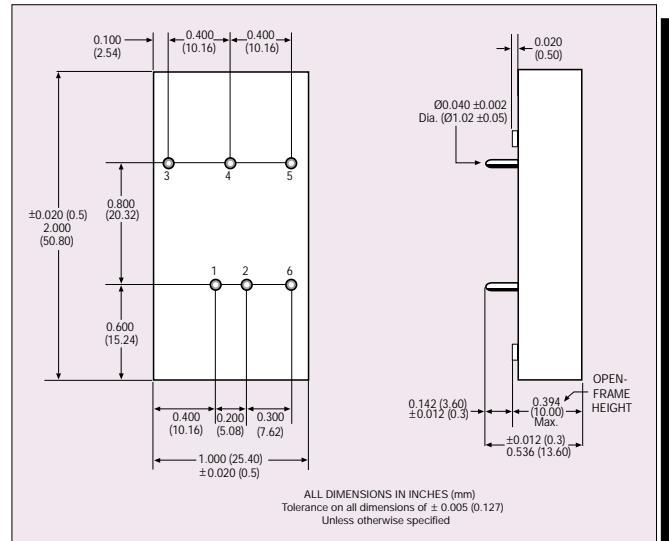
# 10 Watt DC/DC converters

| INPUT VOLTAGE | OUTPUT VOLTAGE | OVERVOLTAGE PROTECTION (3,4) | OUTPUT CURRENT (MAX.) (9) | TYPICAL EFFICIENCY | MODEL NUMBER (7) |
|---------------|----------------|------------------------------|---------------------------|--------------------|------------------|
| 18-75VDC      | 3.3V           | 3.9V                         | 2.4A                      | 78%                | CXA10-48S3V3     |
| 18-75VDC      | 5.0V           | 6.8V                         | 2.0A                      | 81%                | CXA10-48S05      |
| 18-75VDC      | 12V            | 16V                          | 0.83A                     | 83%                | CXA10-48S12      |
| 18-75VDC      | ±5V            | ±6.8V                        | 1.0A                      | 81%                | CXA10-48D05      |
| 18-75VDC      | ±12V           | ±16V                         | 0.41A                     | 83%                | CXA10-48D12      |
| 18-75VDC      | ±15V           | ±19V                         | 0.33A                     | 81%                | CXA10-48D15      |

## Notes

- 1 Negative output voltage deviation when positive load is changed.
- 2 Guaranteed minimum output voltage range.
- 3 TVS spec : See Application Note 100 on our website.
- 4 On dual output models, OVP protection is on negative outputs only.
- 5 With respect to minimum input voltage.
- 6 With one external ITW Paktron 4.7µF film capacitor across the input.
- 7 For units with optional remote ON/OFF, please add the suffix '-S' to the model number, e.g. CXA10-48S05-S. Additional alphanumeric suffixes maybe added to indicate minor modifications not affecting the safety approvals.
- 8 Unit provides basic insulation up to the 75VDC maximum input voltage.
- 9 Maximum continuous output power not to exceed 10 Watts. 7.9 Watts for the 3V3 model.
- 10 User must provide 1.5A in line fuse in order to comply with safety approvals.
- 11 Maximum temperature on components Q100, CR101, CR102 not to exceed 120°C. See Application Note 100 for details.

**CAUTION: Hazardous internal voltages and high temperatures.**  
Ensure that unit is not user accessible.



| PIN CONNECTIONS |               |               |
|-----------------|---------------|---------------|
| PIN NUMBER      | SINGLE OUTPUT | DUAL OUTPUT   |
| 1               | + Input       | + Input       |
| 2               | - Input       | - Input       |
| 6 *             | Remote ON/OFF | Remote ON/OFF |
| 3               | + Output      | + Output      |
| 4               | No Pin        | Common        |
| 5               | - Output      | - Output      |

\* Optional remote ON/OFF pin. Please add the suffix '-S' to the model number, e.g. CXA10-48S05-S (See Note 7).

