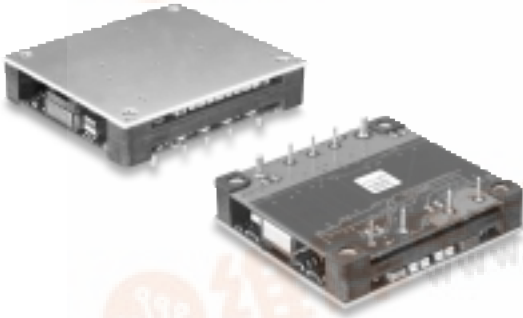




EXB250 SERIES

Single output



[2 YEAR WARRANTY]



- High efficiency topology, 90% typical at 3.3V
- Industry standard footprint
- Wide baseplate temperature, -40°C to +100°C (natural convection)
- 90% to 110% output trim
- No minimum load
- Overvoltage protection
- Remote on/off

The EXB250 is a new high efficiency, open frame, isolated 165 Watt converter series in an industry standard half-brick footprint. The EXB250 delivers very high output current at low voltages, and excellent useable power density for today's high end applications. The design takes advantage of open frame construction to provide a low weight, low thermal impedance baseplate design. The seven models in the series feature an input voltage range of 33 to 75VDC and are available in output voltages of 12V, 5V, 3.3V, 2.5V, 1.8V, 1.5V and 1.2V. The output voltage on each model is adjustable from 90% to 110% of the nominal value. Typical efficiencies for the models are 90% for the 3.3V, 88% for the 2.5V and 87% for the 1.8V version. The EXB250 series also has a remote on/off capability. Overcurrent and overvoltage protection features are included as standard. With full international safety approval including EN60950 (TÜV Rheinland) and UL/cUL1950, the EXB250 reduces compliance costs and time to market.

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

| OUTPUT SPECIFICATIONS | | |
|---|--|---|
| Voltage adjustability | | 90% to 110% |
| Set point accuracy | | ±1.6% max. |
| Line regulation | 1V2 Model | ±0.2% max. |
| Low line to high line | All other models | ±0.1% max. |
| Load regulation | Full load to min. load | ±0.2% max. |
| Minimum load | | 0% |
| Overshoot | At turn-on and turn-off | None |
| Undershoot | 1.2V, 1.5V, 1.8V, 2.5V and 3.3V models | None |
| Ripple and noise | 5Hz to 20MHz | 60mV pk-pk 20mV rms |
| Transient response (See Note 1) | | 6% max. deviation 150µs recovery to within total error band |
| INPUT SPECIFICATIONS | | |
| Input voltage range | 48Vin nominal | 33 to 75VDC |
| Input current | No load Remote OFF | 145mA max. 35mA max. |
| Input current (max.) (See Note 3) | | 5.7A max. @ Io max. and Vin = 33 to 75V |
| Input reflected ripple | (See Note 5) | 350mA (pk-pk) typ. |
| Active high remote ON/OFF Logic compatibility ON OFF | (See Note 7) Open collector ref to -input Open circuit or >4.0VDC <1.2VDC | |
| Undervoltage lockout | Power up Power down | 32.5V (typ.) 30.5V (typ.) |
| Start-up time (See Note 6) | Power up Remote ON/OFF | 10ms (typ.) 3ms (typ.) |

| EMC CHARACTERISTICS | | |
|---|---|---------------------------------------|
| Conducted emissions | EN55022 (See Note 2) EN55022 (See Note 2) | Level A Level B |
| Immunity: | | |
| ESD air | EN61000-4-2 8kV (NP), 15kV (NP) | |
| ESD contact | EN61000-4-2 6kV (NP), 8kV (NP) | |
| Radiated field enclosure | EN61000-4-3 10V/m (NP) | |
| 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 | | See table |
| Operational | Input/output Input/baseplate | 1500VDC 1500VDC |
| Switching frequency | Fixed | 400kHz typ. |
| Approvals and standards (See Note 4) | | EN60950 (TÜV Rheinland) UL/cUL1950 |
| Material flammability | | UL94V-0 |
| Weight | | 73g (2.6oz) |
| MTBF | MIL-HDBK-217F @ 40°C, 100% load ground benign | >224,000 hours |
| ENVIRONMENTAL SPECIFICATIONS | | |
| Thermal performance | Operating baseplate temperature Non-operating | -40°C to +100°C -40°C to +125°C |

International Safety Standard Approvals

UL/cUL : UL1950 File No. E135734
TÜV Rheinland Certificate No. R2174184
CB Scheme No. US-TUVR-1085



72 to 165 Watt High efficiency DC/DC converters

| OUTPUT POWER (MAX.) | INPUT VOLTAGE | OVP | OUTPUT VOLTAGE | OUTPUT CURRENT (MIN.) | OUTPUT CURRENT (MAX.) | EFFICIENCY (TYP.) | REGULATION | | MODEL NUMBER ^(7,8,9) |
|---------------------|---------------|---------|----------------|-----------------------|-----------------------|-------------------|------------|-------|---------------------------------|
| | | | | | | | LINE | LOAD | |
| 72W | 33-75VDC | 1.44VDC | 1.2V | 0A | 60A | 84.0% | ±0.2% | ±0.2% | EXB250-48S1V2 |
| 90W | 33-75VDC | 1.8VDC | 1.5V | 0A | 60A | 85.5% | ±0.1% | ±0.2% | EXB250-48S1V5 |
| 108W | 33-75VDC | 2.2VDC | 1.8V | 0A | 60A | 87.0% | ±0.1% | ±0.2% | EXB250-48S1V8 |
| 150W | 33-75VDC | 3.0VDC | 2.5V | 0A | 60A | 88.0% | ±0.1% | ±0.2% | EXB250-48S2V5 |
| 165W | 33-75VDC | 4.0VDC | 3.3V | 0A | 50A | 90.0% | ±0.1% | ±0.2% | EXB250-48S3V3 |
| 165W | 33-75VDC | 6.0VDC | 5.0V | 0A | 33A | 91.7% | ±0.1% | ±0.2% | EXB250-48S05 |
| 165W | 33-75VDC | 14.4VDC | 12.0V | 0A | 13.75A | 92.0% | ±0.1% | ±0.2% | EXB250-48S12 |

Notes

- 1 di/dt = 0.1A/μs, Vin = 48VDC, Tc = 25°C, load change = 0.5 Io max. to 0.75 Io max. and 0.75 Io max. to 0.5 Io max.
- 2 The EXB250 meets level A and level B conducted emissions only with external components connected before the input pins to the converter. See Application Note 119.
- 3 Recommended input fusing is a 10A HRC 200V rated fuse.
- 4 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
- 5 Measured with no external PI filter. Significant reduction possible with external filter. See Application Note 119.
- 6 Start-up into resistive load.
- 7 Active low remote On/Off is available. Standard product is active high. When ordering active low parts, designate with the Suffix '-R', e.g. EXB250-48S3V3-R.
- 8 When ordering 0.145" pin lengths designate with the Suffix '-N', if the product is already a '-R' suffix product then the suffix will be '-RN'
- 9 When ordering 0.110" pin lengths designate with the Suffix '-K', if the product is already a '-R' suffix product then the suffix will be '-RK'

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 | Remote On/Off |
| 3 | No Function |
| 4 | -Vin |
| 5 | -Vout |
| 6 | -Sense |
| 7 | Trim |
| 8 | +Sense |
| 9 | +Vout |

