

SXE15 Series

Single output

- High efficiency topology, 87% typical at 5V
- Wide operating temperature, up to and exceeding 70°C (natural convection)
- 90% to 110% output trim
- No minimum load
- Overvoltage protection
- Remote on/off control



The SXE15 is a new high efficiency open frame isolated 15 Watt converter series in an industry standard footprint. All 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 and 1.8V. 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 5V, 86% for the 3.3V, 85% for the 2.5V and 12V and 83% for the 1.8V version. The SXE15 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 SXE15 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 14) | ±4% max. |
| Line regulation | 1V8 and 2V5 models | 0.5% max. |
| Low line to high line | 3V3 and S05 models | 0.1% max. |
| Load regulation | 1V8 model | 2.0% max. |
| Full load to min. load | 2V5 model | 1.5% max. |
| | 3V3 and S05 models | 0.5% max. |
| Minimum load | (See Note 13) | 0% |
| Overshoot | 1V8 and 2V5 models | 4% max. |
| At turn-on and turn-off | 3V3 and S05 models | None |
| Undershoot | | None |
| Ripple and noise | 1V8 and 2V5 models | 40mV pk-pk |
| (See Note 1) | | 14mV rms |
| 5Hz to 20MHz | 3V3 and S05 models | 70mV pk-p |
| | | 20mV rms |
| Transient response | 1V8 and 2V5 models | 150mV |
| (See Note 2) | 3V3 and S05 models | 100mV |
| Typical deviation | | 400µs recovery to within total error band |

INPUT SPECIFICATIONS

| | | |
|---------------------------|------------------------------|--|
| Input voltage range | 48Vin nominal | 33 to 75VDC |
| Input current | No load | 35mA max. |
| | Remote OFF | 25mA max. |
| Input current (max.) | (See Note 4) | 0.55A max. @ Io max. and Vin = 33 to 75V |
| Input reflected ripple | (See Note 6) | 5mA (pk-pk) typ. |
| Active high remote ON/OFF | | (See Note 8) |
| Logic compatibility | Open collector ref to -input | |
| ON | Open circuit or >2VDC | |
| OFF | <1.2VDC | |
| Undervoltage lockout | Power up | 33V (typ.) |
| | Power down | 30V (typ.) |
| Start-up time | Power up | 1.5ms (typ.) |
| (See Note 7) | Remote ON/OFF | 2.5ms (typ.) |

EMC CHARACTERISTICS

| | | |
|--------------------------|-----------------------------------|---------------|
| Conducted emissions | EN55022 (See Note 3) | Level A |
| | EN55022 (See Note 3) | Level B |
| Radiated emissions | EN55022 (See Longform data sheet) | Level B |
| 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 12) |
| Input transients | ETS 300 132-2, ETR 283 | |

GENERAL SPECIFICATIONS

| | | |
|-------------------------|---|--------------------------------------|
| Efficiency | | See table |
| Operational insulation | Input/output | 1500VDC |
| Switching frequency | Fixed | 265kHz typ. |
| Approvals and standards | | UL/cUL1950, EN60950 TÜV Rheinland |
| (See Notes 5 and 11) | | |
| Material flammability | | UL94V-0 |
| Weight | | 12g (0.42oz) |
| MTBF | MIL-HDBK-217F | >600,000 hours |
| Representative model: | 48S05 @ 48Vin, 40°C, 100% load ground benign BELLCORE 332 | >1,500,000 |

ENVIRONMENTAL SPECIFICATIONS

| | | |
|---------------------|--|-----------------|
| Thermal performance | Operating ambient temp. (5V and 3.3V) | -40°C to +65°C |
| (See Note 9) | Operating ambient temp. (1.8V, 2.5V and 12V) | -40°C to +70°C |
| | Non-operating (All models) | -40°C to +120°C |

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Single output

DC/DC CONVERTERS | 10.8-15W High Efficiency DC/DC Converters

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For the most current data and application support visit www.artesyn.com/powergroup/products.htm

| OUTPUT POWER (MAX.) | INPUT VOLTAGE | OVP | OUTPUT VOLTAGE | OUTPUT CURRENT (MIN.) | OUTPUT CURRENT (MAX.) | EFFICIENCY (TYP.) | REGULATION | | MODEL NUMBER ⁽⁸⁾ |
|---------------------|---------------|-----------------------|----------------|-----------------------|-----------------------|-------------------|------------|------|-----------------------------|
| | | | | | | | LINE | LOAD | |
| 10.8W | 33-75VDC | 2.3VDC | 1.8V | 0A | 6A | 83% | 0.3% | 2.0% | SXE15-48S1V8 |
| 15W | 33-75VDC | 3.2VDC | 2.5V | 0A | 6A | 85% | 0.3% | 1.5% | SXE15-48S2V5 |
| 15W | 33-75VDC | 4VDC | 3.3V | 0A | 4.5A | 86% | 0.1% | 0.5% | SXE15-48S3V3 |
| 15W | 33-75VDC | 6VDC | 5.0V | 0A | 3A | 87% | 0.1% | 0.5% | SXE15-48S05 |
| 15W | 33-75VDC | 15VDC ⁽¹⁰⁾ | 12.0V | 0A | 1.25A | 85% | 0.1% | 0.5% | SXE15-48S12 |

Notes

- Measured as per recommended set-up. See Application Note 116 for details.
- $di/dt = 0.1A/\mu s$, $V_{in} = 48VDC$, $T_c = 25^\circ C$, load change = 0.5 lo max. to 0.75 lo max. and 0.75 lo max. to 0.5 lo max.
- The SXE15 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.
- Recommended input fusing is a 2A HRC 200V rated fuse.
- This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
- Measured with external Pi filter. See Application Note 116 for further details.
- Start-up into resistive load.
- Active low remote on/off is available. Standard product is active high. Designate with the Suffix '-R' e.g. SXE15-48S05-R.
- Operating ambient temperatures are specified at natural convection. Higher operating temperatures are possible with increased airflow. See Application Note 116 for further details.
- SXE15-48S12 below 0.2A loading. OVP is TVS and 17V typical.
- Approvals pending for the SXE12-48S12.
- Signal line assumed < 3m in length.
- A 5% minimum load is required to maintain the output voltage regulation over all operating conditions for the SXE15-48S12.
- This parameter is calculated at worst case line, load, temperature and initial settings.

PROTECTION

| | |
|--------------------------|----------------|
| Short circuit protection | Continuous |
| Overvoltage protection | Latching clamp |

TELECOM SPECIFICATION

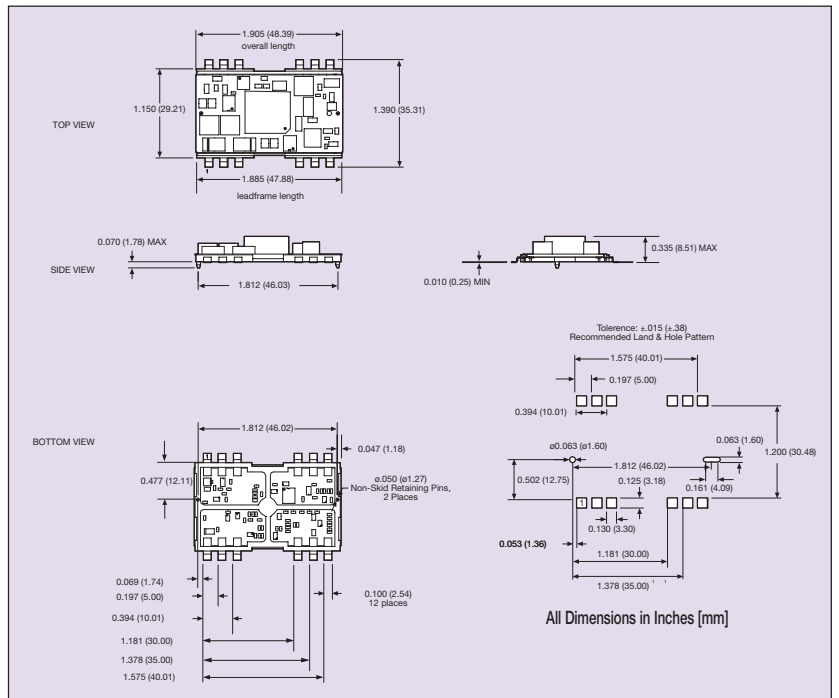
| | |
|----------------------------|--|
| Central office interface A | ETS300-132-2, input voltage and current requirements |
|----------------------------|--|

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

International Safety Standard Approvals

UL US UL/cUL 1950 3rd edition. File No. E135734
TÜV TÜV Rheinland. Certificate No. R2074133

| PIN CONNECTIONS | |
|-----------------|---------|
| PIN NUMBER | FEATURE |
| 1 | Vout + |
| 2 | Vout - |
| 3 | N/C |
| 4 | Trim |
| 5 | N/C |
| 6 | N/C |
| 7 | N/C |
| 8 | On/Off |
| 9 | N/C |
| 10 | N/C |
| 11 | Vin - |
| 12 | Vin + |



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