

SXE15 Series

Single output

- High efficiency topology, 87% typical at 5 V
- 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
- Available RoHS compliant



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 Vdc to 75 Vdc and are available in output voltages of 12 V, 5 V, 3.3 V, 2.5 V and 1.8 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, 86% for the 3.3 V, 85% for the 2.5 V and 12 V and 83% for the 1.8 V 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 13) | ±4% max. |
| Line regulation | 1.8 V and 2.5 V models | 0.5% max. |
| Low line to high line | 3.3 V and 5 V models | 0.1% max. |
| Load regulation | 1.8 V model | 2.0% max. |
| Full load to min. load | 2.5 V model | 1.5% max. |
| | 3.3 V and 5 V models | 0.5% max. |
| Minimum load | (See Note 12) | 0% |
| Overshoot | 1.8 V and 2.5 V models | 4% max. |
| At turn-on and turn-off | 3.3 V and 5 V models | None |
| Undershoot | | None |
| Ripple and noise | 1.8 V and 2.5 V models | 40 mV pk-pk |
| (See Note 1) | | 14 mV rms |
| 5 Hz to 20 MHz | 3.3 V and 5 V models | 70 mV pk-pk |
| | | 20 mV rms |
| Transient response | 1.8 V and 2.5 V models | 150 mV |
| (See Note 2) | 3.3 V and 5 V models | 100 mV |
| Typical deviation | | 400 μs recovery to within total error band |

INPUT SPECIFICATIONS

| | | |
|---------------------------|------------------------------|---|
| Input voltage range | 48 Vin nominal | 33-75 Vdc |
| Input current | No load | 35 mA max. |
| | Remote OFF | 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 | | (See Note 8) |
| Logic compatibility | Open collector ref to -input | |
| ON | Open circuit or >2 Vdc | |
| OFF | <1.2 Vdc | |
| Undervoltage lockout | Power up | 33 V (typ.) |
| | Power down | 30 V (typ.) |
| Start-up time | Power up | 1.5 ms (typ.) |
| (See Note 7) | Remote ON/OFF | 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 11) |
| 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 Notes 5) | UL/cUL1950, EN60950 TÜV Rheinland |
| Material flammability | | UL94V-0 |
| Weight | | 12 g (0.42 oz) |
| Coplanarity | | 150 μm |
| MTBF | MIL-HDBK-217F | 1,790,000 hours |
| Representative model: | 48S05J @ 48 Vin, 40 °C, 100% load ground benign | |
| | BELLCORE 332 | >1,500,000 hours |

ENVIRONMENTAL SPECIFICATIONS

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

SXE15 Series

Single output

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

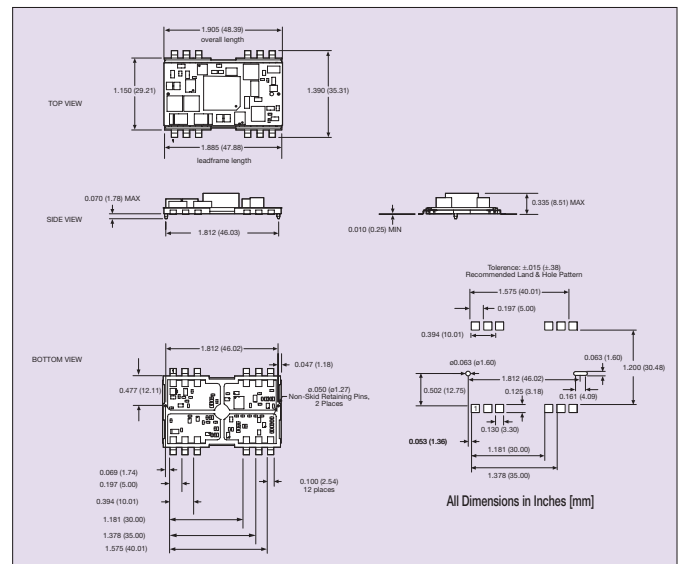
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For the most current data and application support visit www.artesyn.com/powergroup/products.htm

| OUTPUT POWER (MAX.) | INPUT VOLTAGE | OVP | OUTPUT VOLTAGE | OUTPUT CURRENT (MIN.) | OUTPUT CURRENT (MAX.) | EFFICIENCY (TYP.) | REGULATION | | MODEL NUMBER ^(8,14,15) |
|---------------------|---------------|------------------------|----------------|-----------------------|-----------------------|-------------------|------------|------|-----------------------------------|
| | | | | | | | LINE | LOAD | |
| 10.8 W | 33-75 Vdc | 2.3 Vdc | 1.8 V | 0 A | 6 A | 83% | 0.3% | 2.0% | SXE15-48S1V8J |
| 15 W | 33-75 Vdc | 3.2 Vdc | 2.5 V | 0 A | 6 A | 85% | 0.3% | 1.5% | SXE15-48S2V5J |
| 15 W | 33-75 Vdc | 4 Vdc | 3.3 V | 0 A | 4.5 A | 86% | 0.1% | 0.5% | SXE15-48S3V3J |
| 15 W | 33-75 Vdc | 6 Vdc | 5 V | 0 A | 3 A | 87% | 0.1% | 0.5% | SXE15-48S05J |
| 15 W | 33-75 Vdc | 15 Vdc ⁽¹⁰⁾ | 12 V | 0 A | 1.25 A | 85% | 0.1% | 0.5% | SXE15-48S12J |

Notes

- Measured as per recommended set-up. See Application Note 116 for details.
- $di/dt = 0.1 \text{ A}/\mu\text{s}$, $V_{in} = 48 \text{ Vdc}$, $T_c = 25 \text{ }^\circ\text{C}$, 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.
- 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 2 A HRC 200 V 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-RJ.
- Operating ambient temperatures are specified at natural convection. Higher operating temperatures are possible with increased airflow. See Application Note 116 for further details.
- SXE15-48S12J below 0.2 A loading. OVP is TVS and 17 V typical.
- Signal line assumed < 3 m in length.
- A 5% minimum load is required to maintain the output voltage regulation over all operating conditions for the SXE15-48S12J.
- This parameter is calculated at worst case line, load, temperature and initial settings.
- 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.
- NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at <http://www.artesyn.com/powergroup/products.htm> to find a suitable alternative.



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 + |

PROTECTION

| | |
|---------------|----------------|
| Short circuit | Continuous |
| Overvoltage | 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 | UL/cUL 1950 3rd edition. File No. E135734 |
| TÜV | TÜV Rheinland. File No. 10401-3336-35841. Licence No. 40004290 |

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