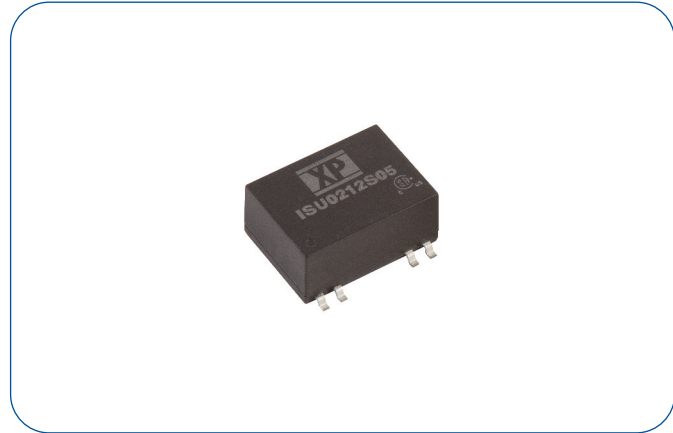


2 Watt

- Regulated Single & Dual Output
- Wide 4:1 Input Range
- Compact SMD Package
- 1500 VDC Isolation
- Operating Temperature -40 °C to +95 °C
- ITE Safety Approvals
- Remote On/Off
- Tape & Reel Package Available
- Optional Water Washable Versions
- 3 Year Warranty



Dimensions:

ISU02:
0.75 x 0.67 x 0.34" (19.0 x 17.0 x 8.7 mm)

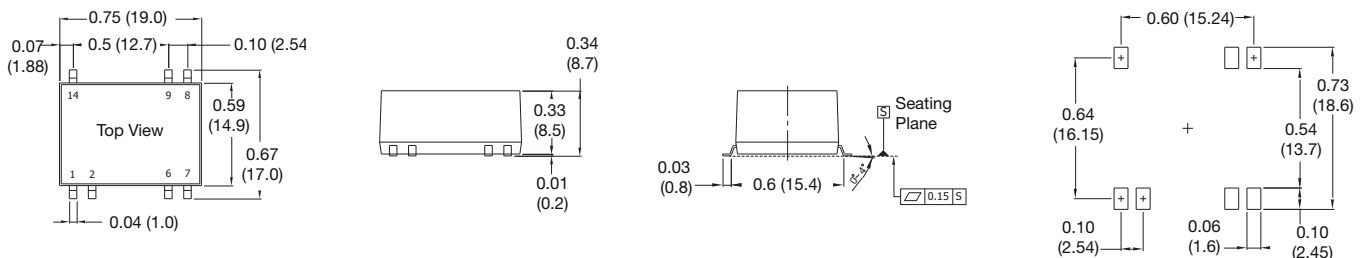
Models & Ratings

| Input voltage | Output voltage | Output current | Input current ^(1,2) | | Maximum capacitive load ⁽³⁾ | Efficiency | Model number ⁽⁴⁾ |
|---------------|----------------|----------------|--------------------------------|-----------|--|------------|-----------------------------|
| | | | No load | Full load | | | |
| 4.5-12V | 5 V | 400 mA | 40 mA | 505 mA | 1680 µF | 79% | ISU0205S05 |
| | 12 V | 167 mA | | 500 mA | 820 µF | 80% | ISU0205S12 |
| | 15 V | 134 mA | | 495 mA | 680 µF | 81% | ISU0205S15 |
| | 24 V | 83 mA | | 490 mA | 390 µF | 81% | ISU0205S24 |
| | ±12 V | ±83 mA | | 490 mA | ±470 µF | 81% | ISU0205D12 |
| | ±15 V | ±67 mA | | 495 mA | ±330 µF | 81% | ISU0205D15 |
| | 9-36V | 5 V | | 400 mA | 20 mA | 105 mA | 1680 µF |
| 12 V | 167 mA | 105 mA | 820 µF | 80% | | ISU0224S12 | |
| 15 V | 134 mA | 100 mA | 680 µF | 82% | | ISU0224S15 | |
| 24 V | 83 mA | 105 mA | 390 µF | 80% | | ISU0224S24 | |
| ±12 V | ±83 mA | 105 mA | ±470 µF | 80% | | ISU0224D12 | |
| ±15 V | ±67 mA | 105 mA | ±330 µF | 81% | | ISU0224D15 | |
| 18-75V | 5 V | 400 mA | 10 mA | 53 mA | | 1680 µF | 78% |
| 12 V | 167 mA | 52 mA | | 820 µF | 81% | ISU0248S12 | |
| 15 V | 134 mA | 51 mA | | 680 µF | 82% | ISU0248S15 | |
| 24 V | 83 mA | 51 mA | | 390 µF | 81% | ISU0248S24 | |
| ±12 V | ±83 mA | 51 mA | | ±470 µF | 81% | ISU0248D12 | |
| ±15 V | ±67 mA | 52 mA | | ±330 µF | 81% | ISU0248D15 | |

Notes

1. Input currents measured at nominal input voltage.
2. Input current is typically 2.5 mA at nominal input voltage when output is remotely turned off.
3. Maximum capacitive load is per output.
4. For optional water washable version, add suffix '-P' e.g. ISU0224S12-P.

Mechanical Details



Input

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|---------------------|--|---------|---------|-------------|--------------------|
| Input Voltage Range | 4.5 | | 12 | VDC | 5 V nominal |
| | 9.0 | | 36 | | 24 V nominal |
| | 18.0 | | 75 | | 48 V nominal |
| Input Filter | Internal Pi type filter | | | | |
| Input Surge | | | 15 | VDC for 1 s | 5 V nominal |
| | | | 50 | | 24 V models |
| | | | 100 | | 48 V models |
| Remote On/Off | ON: open circuit OFF: 2-4mA via 1kΩ resistor into pin 2 with respect to pin 1 | | | | |

Output

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|--------------------------|---------|---------|---------|-------------|---|
| Output Voltage | 5 | | 30 | VDC | See Models and Ratings table |
| Initial Set Accuracy | | | ±1.0 | % | At full load |
| Output Voltage Balance | | | ±2.0 | % | For dual output with balanced loads |
| Minimum Load | | | | | No minimum load required |
| Line Regulation | | | ±0.5 | % | From minimum to maximum input at full load |
| Load Regulation | | | ±1.0 | % | From 0 to full load |
| Cross Regulation | | | ±5.0 | % | On dual output models when one load is varied between 25% and 100% and other is fixed at 100% |
| Transient Response | | 3 | 5 | % deviation | Recovery within 1% in less than 250 μs for a 25% load change. |
| Ripple & Noise | | | 50 | mV pk-pk | 20 MHz bandwidth. Measured using 0.47 μF ceramic capacitor. |
| Short Circuit Protection | | | | | Continuous, with auto recovery |
| Maximum Capacitive Load | | | | | See Models and Ratings table |
| Temperature Coefficient | | | 0.02 | %/°C | |

General

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|----------------------------|-----------------|------------|---------|-------------------|------------------------------|
| Efficiency | | 81 | | % | See Models and Ratings table |
| Isolation: Input to Output | 1500/1800 | | | VDC | 60 s/1 s |
| Isolation Resistance | 10 ⁹ | | | Ω | At 500 VDC |
| Isolation Capacitance | | 500 | | pF | |
| Switching Frequency | | 100 | | kHz | |
| Power Density | | | 11.7 | W/in ³ | |
| Mean Time Between Failure | | 6.4 | | MHrs | MIL-HDBK-217F, +25 °C GB |
| Weight | | 0.01 (4.5) | | lb (g) | |
| Moisture Sensitivity Level | Level 2 | | | | IPC/JEDEC J-STD-020D.1 |

Environmental

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|---------------------------------|----------------|---------|---------|-------|------------------------------|
| Operating Temperature | -40 | | +95 | °C | See Derating Curve. |
| Storage Temperature | -55 | | +125 | °C | |
| Case Temperature | | | +95 | °C | |
| Humidity | | | 95 | %RH | Non-condensing |
| Cooling | | | | | Natural convection |
| Case Flammability | UL 94V-0 Rated | | | | Non conductive black plastic |
| Lead-Free Reflow Solder Process | | | | | IPC/JEDEC J-STD-020D.1 |

Safety Approvals

| Safety Agency | Safety Standard | Notes & Conditions |
|---------------|-----------------|--------------------|
| CB | IEC62368-1 | ITE |
| UL | UL/cUL62368-1 | ITE |

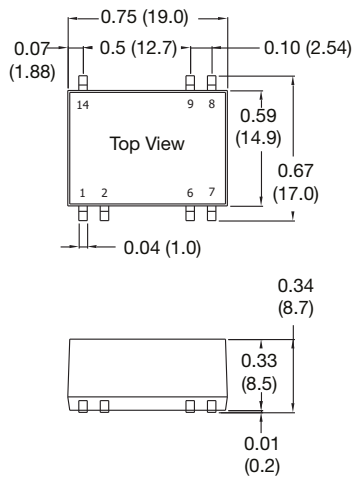
EMC: Emissions

| Phenomenon | Standard | Test Level | Notes & Conditions |
|------------|----------|------------|--------------------|
| Conducted | EN55032 | Class A | |

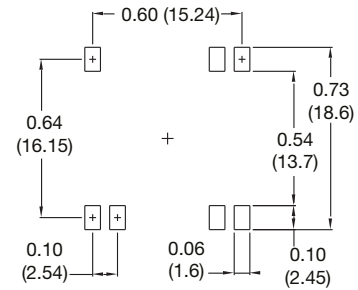
EMC: Immunity

| Phenomenon | Standard | Test Level | Criteria | Notes & Conditions |
|------------|-------------|------------------------------------|----------|--|
| ESD | EN61000-4-2 | ±8 kV air discharge, ±6 kV contact | A | |
| Radiated | EN61000-4-3 | 10 V/m | A | |
| EFT/Burst | EN61000-4-4 | ±2 kV | A | With external input capacitor, suggested part is CHEMI-CON KY 220µF/100V |
| Surge | EN61000-4-5 | ±1 kV | A | With external input capacitor, suggested part is CHEMI-CON KY 220µF/100V |
| Conducted | EN61000-4-6 | 10 V rms | A | |

Mechanical Details



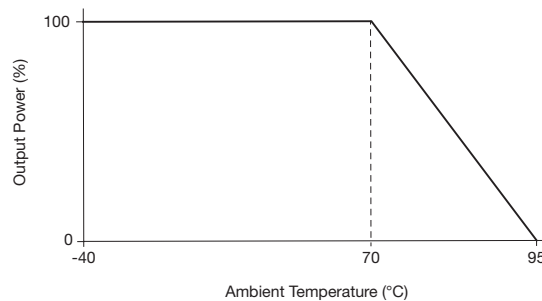
Connecting Pin Pattern



| Pin Connections | | |
|-----------------|---------------|---------------|
| Pin | Single | Dual |
| 1 | -Vin | -Vin |
| 2 | Remote On/Off | Remote On/Off |
| 6 | No Connection | Common |
| 7 | No Connection | -Vout |
| 8 | +Vout | +Vout |
| 9 | -Vout | Common |
| 14 | +Vin | +Vin |

Application Notes

Derating Curve



Notes

- All dimensions are in inches (mm)
- Weight: 0.01 lbs (4.5 g) approx.

- Tolerance: X.XX±0.01 (X.X±0.25)
X.XXX±0.005 (X.XX±0.13)
- Pin Tolerance: ±0.002 (±0.05)