# IL series

XP Power

## 2W

DC-DC converters

The IL series is housed in a SIP4 plastic case for PCB mounting. Featuring a ±10% input voltage range for 5, 12 & 15VDC nominal inputs, offering single outputs of 3.3, 5, 9, 12, 15 & 24VDC.

The 2W IL provides 1kVDC isolation between input and output as standard, with 3kVDC isolation available as an option. The operating temperature range is from -40°C to +85°C.


### Features

- Unregulated single output
- ±10% input range
- Single outputs 3.3 to 24VDC
- SIP4 package
- 1.0kVDC isolation, 3.0kVDC option
- -40°C to +85°C operating temperature
- 3 year warranty

### Applications

Robotics
Instrumentation
Technology
Industrial
Process control

### Dimensions

See mechanical details

### More resources

Click the link or scan the code

→ xppower.com

### Models & ratings

| Model number(1) | Input voltage | No load input current | Output voltage | Output current(2) | Efficiency |
|---|---|---|---|---|---|
| IL0503S | 5.0VDC | 35mA | 3.3VDC | 400mA | 71% |
| IL0505S | | 35mA | 5.0VDC | 400mA | 77% |
| IL0509S | | 35mA | 9.0VDC | 222mA | 80% |
| IL0512S | | 35mA | 12.0VDC | 168mA | 82% |
| IL0515S | | 35mA | 15.0VDC | 132mA | 82% |
| IL0524S | | 35mA | 24.0 VDC | 84mA | 82% |

**Continued on page 2**

**Notes:**

1. Add suffix 'H' to model for 3000 VDC isolation.
2. Operation at no load will not damage unit but it may not meet all specifications.

## Models & ratings

| Model number[1] | Input voltage | No load input current | Output voltage | Output current[2] | Efficiency |
|---|---|---|---|---|---|
| IL1203S | 12.0VDC | 20mA | 3.3VDC | 400mA | 72% |
| IL1205S | | 20mA | 5.0VDC | 400mA | 78% |
| IL1209S | | 20mA | 9.0VDC | 222mA | 82% |
| IL1212S | | 20mA | 12.0VDC | 168mA | 84% |
| IL1215S | | 20 mA | 15.0VDC | 132mA | 84% |
| IL1224S | | 25 mA | 24.0 VDC | 84mA | 82% |
| IL2403S | 24.0VDC | 10 mA | 3.3VDC | 400mA | 74% |
| IL2405S | | 10mA | 5.0VDC | 400mA | 80% |
| IL2409S | | 10mA | 9.0VDC | 222mA | 84% |
| IL2412S | | 10mA | 12.0VDC | 168mA | 84% |
| IL2415S | | 10mA | 15.0VDC | 132mA | 84% |
| IL2424S | | 10mA | 24.0 VDC | 84mA | 84% |

**Notes:**

1. Add suffix 'H' to model for 3000VDC isolation.
2. Operation at no load will not damage unit but it may not meet all specifications.

## Input

| Characteristic | Minimum | Typical | Maximum | Units | Notes & conditions |
|---|---|---|---|---|---|
| Input voltage range | | ±10 | | % | Nominal |
| Input reflected ripple current | | 20 | | mA pk-pk | 12µH inductor, 5Hz to 20MHz |
| Input reverse voltage protection | None | | | | |
| Input filter | Capacitor | | | | |

## Output

| Characteristic | Minimum | Typical | Maximum | Units | Notes & conditions |
|---|---|---|---|---|---|
| Output voltage | See models & ratings table | | | | |
| Minimum load | 0 | | | % | Operation at no load will not damage unit but it may not meet all specifications. |
| Line regulation | | 1.2/1 | | % | Δ Vin |
| Load regulation | | ±10 | | % | 20-100% load change (3.3VDC models: ±20%) |
| Setpoint accuracy | | ±3 | | % | |
| Ripple & noise | | | 150 | mV pk-pk | 20MHz bandwidth |
| Temperature coefficient | | 0.02 | | %/°C | |
| Maximum capacitive load | | 470 | | µF | |

## General

| Characteristic | Minimum | Typical | Maximum | Units | Notes & conditions |
|---|---|---|---|---|---|
| Efficiency | See models & ratings table | | | | |
| Isolation voltage | 1000 | | | VDC | Optional 3000VDC -H option |
| Isolation resistance | | $10^9$ | | Ω | |
| Isolation capacitance | | 60 | | pF | |
| Switching frequency | | 70 | 650 | kHz | Variable |
| Mean time between failure | | >1.21 | | Mhrs | MIL-HDBK-217F, +25°C GB |
| Case material | Non conductive black plastic (UL94V-0 rated) | | | | |
| Potting material | Epoxy (UL94V-0 rated) | | | | |
| Pin material | C5191R-H solder-coated | | | | |
| Solder process | | | 260 | °C | 1.5mm from case 10s max |

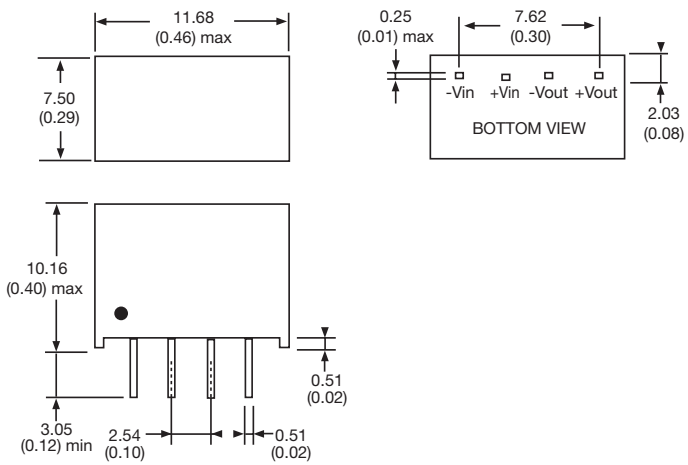
## Environmental

| Characteristic | Minimum | Typical | Maximum | Units | Notes & conditions |
|---|---|---|---|---|---|
| Operating temperature | -40 | | +85 | °C | |
| Storage temperature | -40 | | +125 | °C | |
| Case temperature | | | +100 | °C | |
| Cooling | Convection cooled | | | | |

## Safety approvals

| Certification | Standard | Notes & conditions |
|---|---|---|
| CE | Meets all applicable directives | |
| UKCA | Meets all applicable legislation | |

## Mechanical details




**Notes:**

1. All dimensions in mm (inches).
2. Pin pitch tolerance: ±0.35 (±0.014), Case tolerance: ±0.5 (±0.02)
3. Weight: 1.8g (0.004lbs)