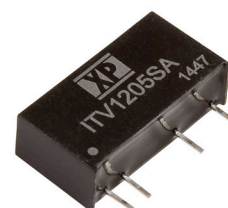


The ITB series is housed in a SIP7 plastic case for PCB mounting. Featuring a $\pm 10\%$ input voltage range for 5, 12 & 24VDC nominal inputs, offering singles outputs of 5, 12 & 15VDC.

The 1W ITB provides 1.5kVDC isolation between input and output, short circuit protection is standard. The operating temperature range is from -40°C to $+105^{\circ}\text{C}$ with derating from $+95^{\circ}\text{C}$.



Features

- ▶ Semi-regulated single output
- ▶ $\pm 10\%$ input range
- ▶ Single outputs 5.0 to 15VDC
- ▶ SIP7 package
- ▶ 1.5kVDC isolation
- ▶ Class B conducted & radiated emissions
- ▶ -40°C to $+105^{\circ}\text{C}$ operation
- ▶ Full load to 95°C
- ▶ 3 year warranty

Applications



Dimensions

19.5 x 6.0 x 10.0mm (0.76" x 0.24" x 0.39")

Documentation

For further information click the link or scan the code

→ [xppower.com](https://www.xppower.com)



Models & ratings

| Model number | Input voltage | Output voltage | Output current | Efficiency | Input current | | Maximum capacitive load |
|--------------|---------------|----------------|----------------|------------|---------------|-----------|-------------------------|
| | | | | | No load | Full load | |
| ITB0505S | 5VDC | 5.0VDC | 200mA | 80% | 30mA | 253mA | 220 μF |
| ITB0512S | | 12.0VDC | 83.3mA | 81% | 3 mA | 253mA | 100 μF |
| ITB0515S | | 15.0VDC | 66.7mA | 81% | 30mA | 253mA | 100 μF |
| ITB1205S | 12VDC | 5.0VDC | 200mA | 80% | 15mA | 106mA | 220 μF |
| ITB1212S | | 12.0VDC | 83.3mA | 80% | 15mA | 106mA | 100 μF |
| ITB1215S | | 15.0VDC | 66.7mA | 81% | 15mA | 104mA | 100 μF |
| ITB2405S | 24VDC | 5.0VDC | 200mA | 81% | 7mA | 53mA | 220 μF |
| ITB2412S | | 12.0VDC | 83.3mA | 80% | 7mA | 53mA | 100 μF |
| ITB2415S | | 15.0VDC | 66.7mA | 80% | 7mA | 53mA | 100 μF |

Notes:

Input currents measured at nominal input voltage.

Input

| Characteristic | Minimum | Typical | Maximum | Units | Notes & conditions |
|------------------------|-----------|---------|---------|---------------|--|
| Input voltage range | 4.5 | | 5.5 | VDC | 5VDC nominal |
| | 10.8 | | 13.2 | | 12VDC nominal |
| | 21.6 | | 26.4 | | 24VDC nominal |
| Input filter | Capacitor | | | | |
| Input reflected ripple | | | 15 | mA pk-pk | Through 12μH inductor and 47μF capacitor |
| Input surge | | | 9 | VDC for 100ms | 5VDC models |
| | | | 18 | | 12VDC models |
| | | | 30 | | 24VDC models |

Output

| Characteristic | Minimum | Typical | Maximum | Units | Notes & conditions |
|--------------------------|------------------------------|---------|----------|-----------|--|
| Output voltage | 5 | | 15 | VDC | See models and ratings table |
| Initial set accuracy | | | ±5 | % | At 70% load |
| Minimum load | 10 | | | % | Minimum load required to meet specification. Operation at no load will not cause damage. |
| Line regulation | | | ±1.2 | % / 1%Vin | |
| Load regulation | | | +5, -2.5 | % | From 10% to full load from 70% load point |
| Ripple & noise | | | 60 | mV pk-pk | 20 MHz bandwidth. Measured using 0.1μF ceramic capacitor |
| Short circuit protection | See models and ratings table | | | | |
| Maximum capacitive load | Continuous, auto recovery | | | | |
| Temperature coefficient | | | 0.02 | %/°C | |

General

| Characteristic | Minimum | Typical | Maximum | Units | Notes & conditions |
|----------------------------|-----------------|--------------|-----------|--|------------------------------|
| Efficiency | | 80 | | % | See models and ratings table |
| Isolation: input to output | 1500 | | | VDC | |
| Switching frequency | 40/50 | | 50/70 | Ω | 5V/12-24V input |
| Isolation resistance | 10 ⁹ | | | pF | |
| Isolation capacitance | | 50 | | kHz | |
| Power density | | | 0.85 (14) | W/cm ³ (W/in ³) | |
| Mean time between failure | 3.6 | | | Mhrs | MIL-HDBK-217F, +25°C GB |
| Weight | | 2.4 (0.0053) | | g (lb) | |

Environmental

| Characteristic | Minimum | Typical | Maximum | Units | Notes & conditions |
|-----------------------|--------------------|---------|---------|-------|---|
| Operating temperature | -40 | | +105 | °C | Derate from 100% load at +95°C to 90% at +105°C |
| Storage temperature | -50 | | +125 | °C | |
| Case temperature | | | +115 | °C | |
| Humidity | | | 95 | %RH | Non-condensing |
| Cooling | Natural convection | | | | |

Safety approvals

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

Emissions - EMC

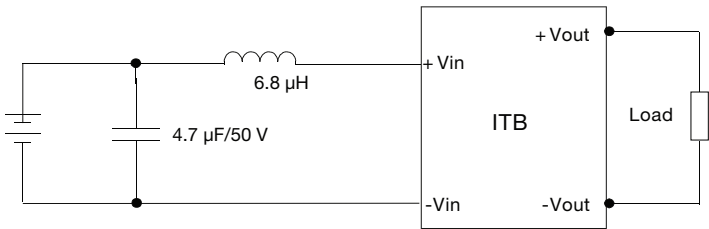
| Phenomenon | Standard | Test level | Notes & conditions |
|------------|----------|------------|------------------------|
| Conducted | EN55022 | Class B | See application notes. |
| Radiated | EN55022 | Class B | |

Immunity - EMC

| Phenomenon | Standard | Test level | Criteria | Notes & conditions |
|--------------------|-------------|------------|----------|--|
| ESD immunity | EN61000-4-2 | 3 | A | |
| Radiated immunity | EN61000-4-3 | 10 Vrms | A | |
| EFT/burst | EN61000-4-4 | 3 | A | External components required, 330µF/100V |
| Surge | EN61000-4-5 | 1 | A | External components required, 330µF/100V |
| Conducted immunity | EN61000-4-6 | 3 V rms | A | |
| Magnetic fields | EN61000-4-8 | 1 A/m | A | |

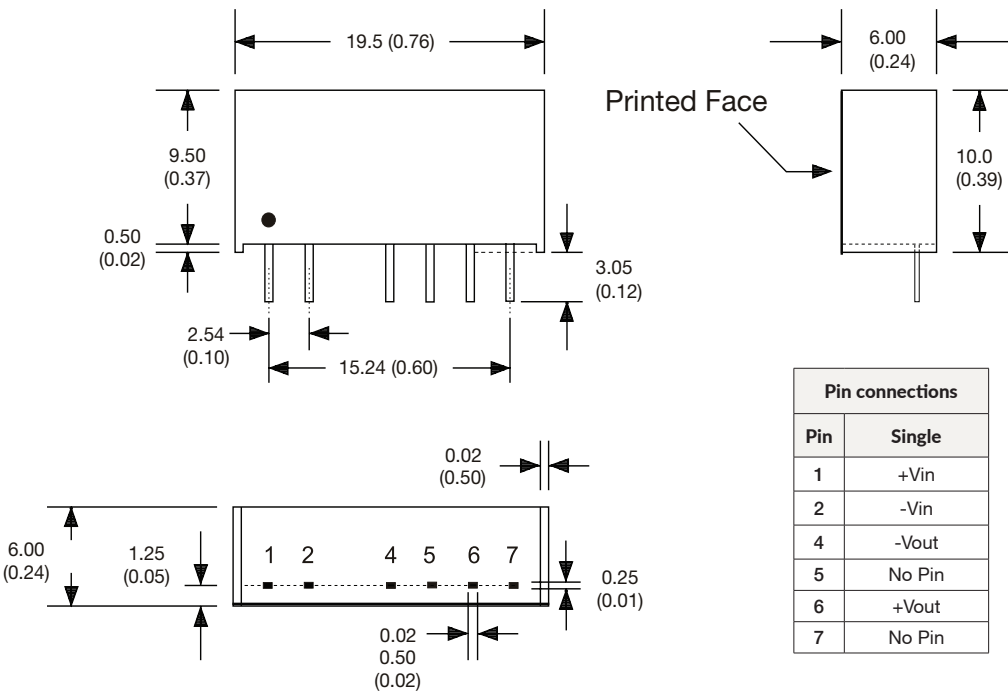
Application notes

EMI filter



1206 Chip Capacitor, placed as close as possible to the input pins

Mechanical details



Notes:

- 1. All dimensions are in mm (inches)
- 2. Weight: 2.4 (0.0053) g (lb) approx.
- 3. Pin pitch tolerance: ± 0.35 (± 0.014)
- 5. Case tolerance: ± 0.5 (± 0.02)