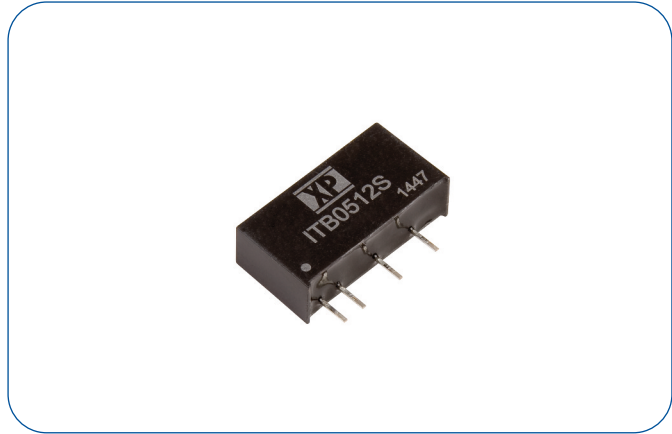


### 1 Watts

- Single Output
- SIP Package
- -40 °C to +105 °C Operation
- Full Load at 95 °C Ambient
- Single Outputs
- 1500 VDC Isolation
- Class B Conducted & Radiated Emissions
- MTBF >3.5 Mhrs
- 3 Year Warranty



#### Dimensions:

**ITB:**  
0.76 x 0.24 x 0.39" (19.5 x 6.0 x 10.0 mm)

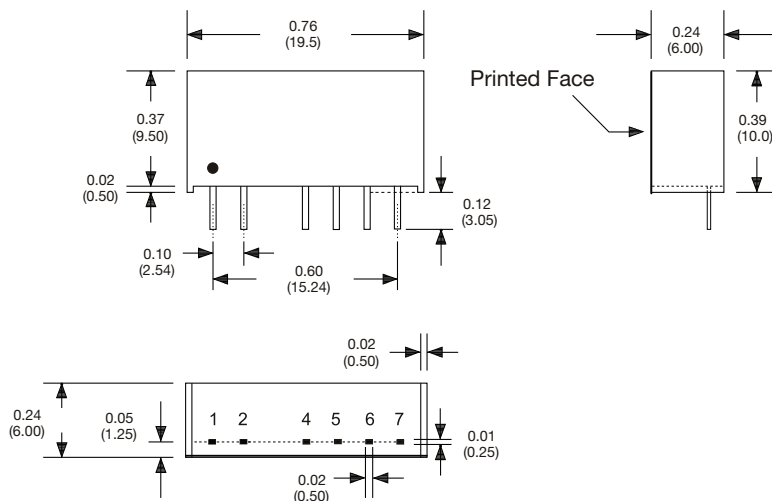
### Models & Ratings

Input Voltage	Output Voltage	Output Current	Input Current <sup>(1)</sup>		Maximum Capacitive Load <sup>(2)</sup>	Efficiency <sup>(3)</sup>	Model Number
			No Load	Full Load			
5V	5V	200 mA	30 mA	253 mA	220 µF	80%	ITB0505S
	12V	83.3 mA	30 mA	253 mA	100 µF	81%	ITB0512S
	15V	66.7 mA	30 mA	253 mA	100 µF	81%	ITB0515S
12V	5V	200 mA	15 mA	106 mA	220 µF	80%	ITB1205S
	12V	83.3 mA	15 mA	106 mA	100 µF	80%	ITB1212S
	15V	66.7 mA	15 mA	104 mA	100 µF	81%	ITB1215S
24V	5V	200 mA	7 mA	53 mA	220 µF	81%	ITB2405S
	12V	83.3 mA	7 mA	53 mA	100 µF	80%	ITB2412S
	15V	66.7 mA	7 mA	53 mA	100 µF	80%	ITB2415S

### Notes

Input currents measured at nominal input voltage.

### Mechanical Details



Pin Connections	
Pin	Single
1	+Vin
2	-Vin
4	-Vout
5	No Pin
6	+Vout
7	No Pin

### Notes

1. All dimensions are in inches (mm)
2. Weight: 0.0053lbs (2.4 g) approx.
3. Pin diameter: 0.02±0.002 (0.5±0.05)
4. Pin pitch tolerance: ±0.014 (±0.35)
5. Case tolerance: ±0.02 (±0.5)

### Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage Range	4.5		5.5	VDC	5 V nominal
	10.8		13.2	VDC	12 V nominal
	21.6		26.4	VDC	24 V nominal
Input Filter	Capacitor				
Input Reflected Ripple			15	mA pk-pk	Through 12 $\mu$ H inductor and 47 $\mu$ F capacitor
Input Surge			9	VDC for 1000 ms	5 V models
			18	VDC for 1000 ms	12 V models
			30	VDC for 1000 ms	24 V models

### Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	5		15	VDC	See Models and Ratings table
Initial Set Accuracy			$\pm 5$	%	At 70% load
Minimum Load	10			%	Minimum load required to meet specification. Operation at no load will not cause damage.
Line Regulation			$\pm 1.2$	%/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 0.1 $\mu$ F 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		80		%	See Models and Ratings table
Isolation: Input to Output	1500			VDC	
Switching Frequency	40/50		50/70	kHz	5 V/12-24 V input
Isolation Resistance	$10^9$			$\Omega$	
Isolation Capacitance		50		pF	
Power Density			14	Win <sup>3</sup>	
Mean Time Between Failure	3.6			MHrs	MIL-HDBK-217F, +25 °C GB
Weight		0.0053 (2.4)		lb (g)	

### 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	-55		+125	°C	
Case Temperature			+115	°C	
Humidity			95	%RH	Non-condensing
Cooling					Natural convection

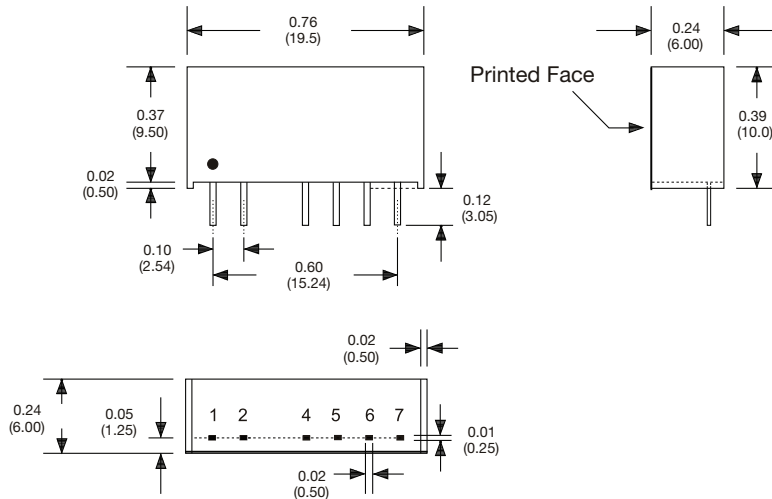
### EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Conducted	EN55022	Class B	See Application Note
Radiated	EN55022	Class B	

### EMC: Immunity

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 input capacitor required 330 $\mu$ F/100 V
Surges	EN61000-4-5	1	A	External input capacitor required 330 $\mu$ F/100 V
Conducted Immunity	EN61000-4-6	3 V rms	A	
Magnetic Fields	EN61000-4-8	1 A/m	A	

### Mechanical Details



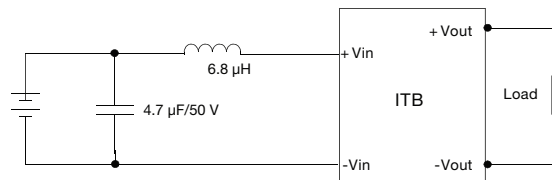
Pin Connections	
Pin	Single
1	+Vin
2	-Vin
4	-Vout
5	No Pin
6	+Vout
7	No Pin

#### Notes

1. All dimensions are in inches (mm)
2. Weight: 0.0053lbs (2.4 g) approx.
3. Pin diameter:  $0.02 \pm 0.002$  (0.5  $\pm$  0.05)
4. Pin pitch tolerance:  $\pm 0.014$  ( $\pm 0.35$ )
5. Case tolerance:  $\pm 0.02$  ( $\pm 0.5$ )

### Application Note

#### EMI Filter



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