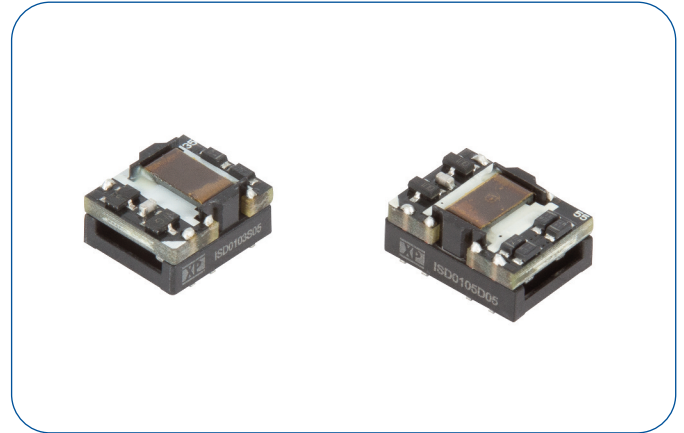


## 2 Watt

- Single & Dual Output
- Ultra Compact SMD Package
- 4200 VDC Isolation
- 250 VAC/400 VDC Working Voltage
- Operating Temperature -40 °C to +105 °C
- Full Load at +85 °C
- Tape & Reel Package Available
- 3 Year Warranty



### Dimensions:

ISD02xxS: 0.5 x 0.44 x 0.27" (12.7 x 11.2 x 6.85 mm)  
 ISD02xxD: 0.6 x 0.44 x 0.27" (15.24 x 11.2 x 6.85 mm)

### Models & Ratings

Input voltage	Output voltage	Output current	Input current <sup>(1,2)</sup>		Maximum capacitive load <sup>(3)</sup>	Efficiency	Model number <sup>(3)</sup>
			No load	Full load			
2.97-3.63 V	3.3 V	500 mA	55 mA	650 mA	470 µF	77%	ISD0203S3V3
	5.0 V	400 mA		770 mA	470 µF	79%	ISD0203S05
	±3.3 V	±303 mA		770 mA	±220 µF	79%	ISD0203D03
	±5.0 V	±200 mA		750 mA	±220 µF	81%	ISD0203D05
4.5-5.5 V	3.3 V	500 mA	40 mA	430 mA	470 µF	77%	ISD0205S3V3
	5.0 V	400 mA		505 mA	470 µF	79%	ISD0205S05
	±3.3 V	±303 mA		520 mA	±220 µF	77%	ISD0205D03
	±5.0 V	±200 mA		495 mA	±220 µF	81%	ISD0205D05

### Notes

1. Input currents measured at nominal input voltage.  
 2. Maximum capacitive load is per output.

3. For optional tape & reel package version, add suffix '-TR' e.g. ISD0205S05-TR.

### Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage Range	2.97		3.63	VDC	3V3 nominal
	4.50		5.50		5 V nominal
Input Filter	Internal Capacitor				
Input Surge			5	VDC for 1 s	3V3 nominal
			9		5 V nominal
Input Reflected Ripple Current			20	mA pk-pk	

### Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	3.3		5	VDC	See Models and Ratings table
Initial Set Accuracy		±3.0		%	At 70% load
Output Voltage Balance			±1.0	%	For dual output with balanced loads
Minimum Load	10			%	Minimum load required
Line Regulation			±1.2	%/1%	Output changes by max of 1.2% for each 1% change in input voltage
Load Regulation		10	15/12	%	3.3 V output/5 V output
Ripple & Noise			150/±150	mV pk-pk	Single/Dual Output. 20 MHz bandwidth. Measured using 10 µF electrolytic capacitor in parallel with 0.1 µF ceramic capacitor
Short Circuit Protection					0.5 s max with auto recovery
Maximum Capacitive Load					See Models and Ratings table
Temperature Coefficient			0.03	%/°C	

### General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		79		%	See Models and Ratings table
Isolation: Input to Output	4200			VDC	3 s. Working voltage 250 VAC/400 VDC
Isolation Resistance	10 <sup>9</sup>			Ω	At 1000 VDC
Isolation Capacitance		25		pF	
Switching Frequency	40		80	kHz	Variable
Power Density			33.6	W/in <sup>3</sup>	
Mean Time Between Failure	6.5			MHrs	MIL-HDBK-217F, +25 °C GB
Weight		0.003 (1.52) 0.004 (1.80)		lb (g)	For single output For dual output
Moisture Sensitivity Level	Level 1				IPC/JEDEC J-STD-020D.1

### Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-40		+105	°C	See Derating Curve.
Storage Temperature	-55		+125	°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

### EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Conducted	EN55032	Class B	See application notes
Radiated	EN55032	Class B	See application notes

### EMC: Immunity

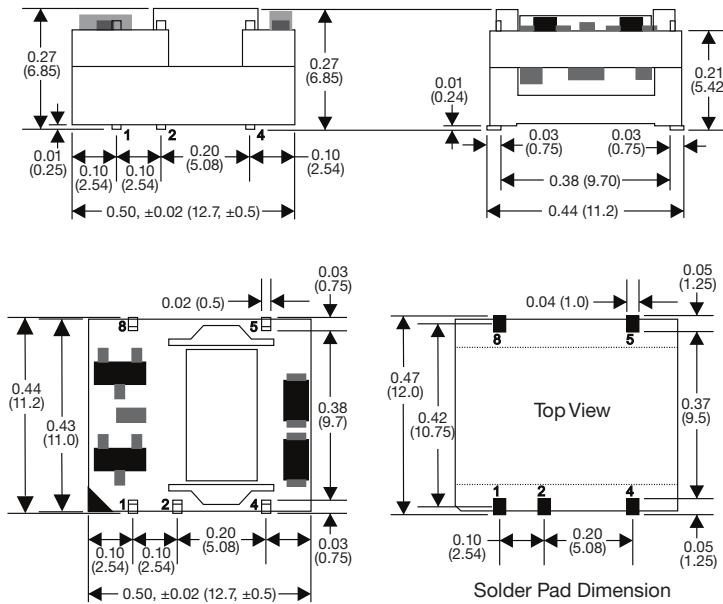
Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD Immunity	EN61000-4-2	±8 kV	A	Air Discharge
Radiated Immunity	EN61000-4-3	3 Vrms	A	
EFT/Burst	EN61000-4-4	2 kV	A	External components required, see application notes
Surge	EN61000-4-5	2 kV	A	External components required, see application notes
Conducted Immunity	EN61000-4-6	10 V rms	A	
Magnetic Fields	EN61000-4-8	100 A/m	A	

### Safety Approvals

Safety Agency	Safety Standard	Notes & Conditions
UL	UL60950-1, UL62368-1	
CSA	CAN/CSA C22.2 No.60950-1	

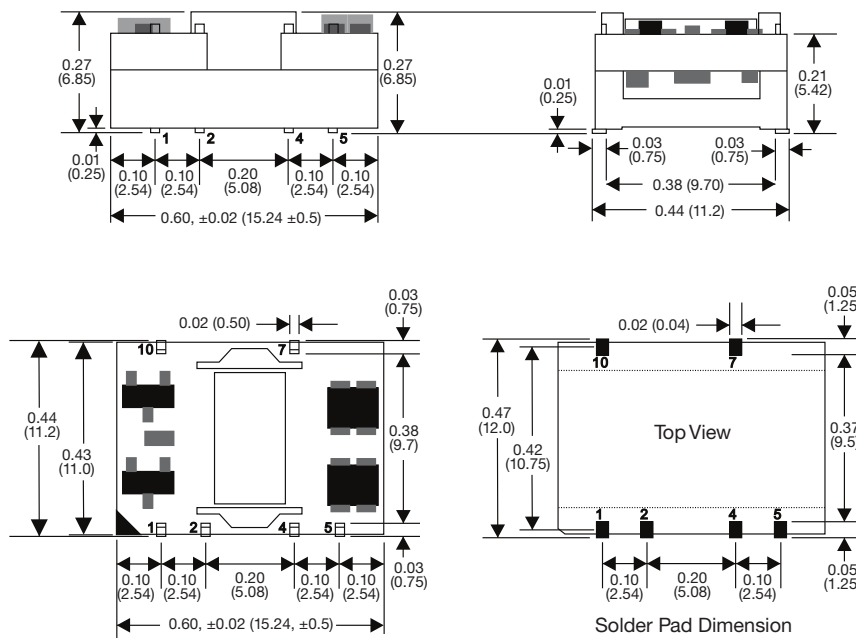
### Mechanical Details

#### Single Output



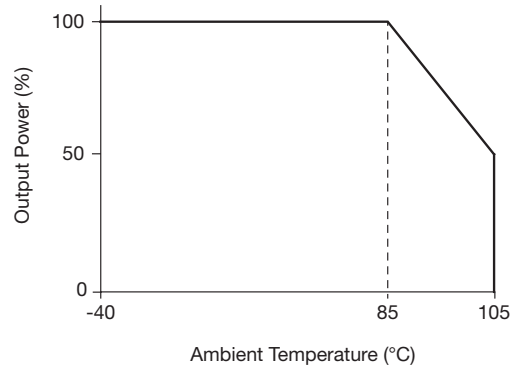
Pin Connections	
Pin	Single
1	-Vin
2	+Vin
4	-Vout
5	+Vout
8	N/C

#### Dual Output

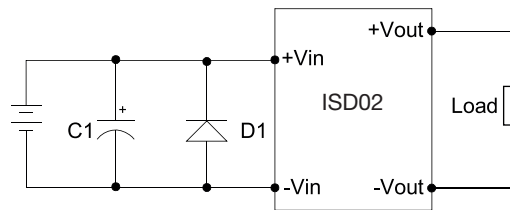


Pin Connections	
Pin	Dual
1	-Vin
2	+Vin
4	Common
5	-Vout
7	+Vout
10	N/C

### Application Notes



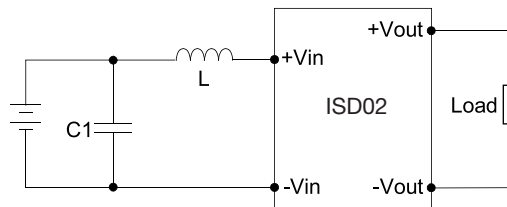
### EFT & Surge Filter



C1	D1
330 $\mu$ F/50 V	SMDJ9.0A

D1: Transient Voltage Suppression Diode

### EMI Filter



C1	L
1206,22 $\mu$ F	6.8 $\mu$ H

### Notes

1. All dimensions are in inches (mm)
2. Weight: 0.003 lbs (1.52 g) approx  
0.004 lbs (1.80 g) approx

3. Tolerance: X.XX $\pm$ 0.01 (X.X $\pm$ 0.25)
4. Pin Tolerance:  $\pm$ 0.002 ( $\pm$ 0.05)