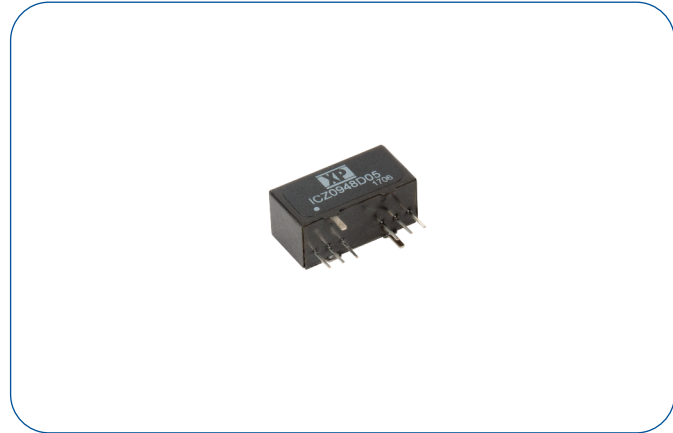


### 9 Watts

- Ultra Compact SIP-8 Package
- Smallest Footprint 9 W Converter
- Single & Dual Outputs
- 2:1 Input Range
- Operating Temperature -40 °C to +85 °C
- 1500 VDC Isolation
- Fully Regulated Output
- No Minimum Load Required
- Remote On/Off
- 3 Year Warranty



#### Dimensions:

**ICZ:**  
0.86 x 0.38 x 0.44" (21.9 x 9.6 x 11.2 mm)

### Models & Ratings

Input Voltage	Output Voltage	Output Current	Input Current <sup>(1)</sup>		Maximum Capacitive Load <sup>(2)</sup>	Efficiency	Model Number
			No Load	Full Load			
9-18 V	3.3 V	2000 mA	15 mA	679 mA	2600 µF	81%	ICZ0912S3V3
	5.0 V	1600 mA	15 mA	784 mA	1300 µF	85%	ICZ0912S05
	9.0 V	1000 mA	15 mA	862 mA	800 µF	87%	ICZ0912S09
	12.0 V	750 mA	15 mA	852 mA	560 µF	88%	ICZ0912S12
	15.0 V	600 mA	15 mA	843 mA	560 µF	89%	ICZ0912S15
	24.0 V	375 mA	15 mA	843 mA	200 µF	89%	ICZ0912S24
	±5.0 V	±800 mA	15 mA	784 mA	±800 µF	85%	ICZ0912D05
	±12.0 V	±375 mA	15 mA	852 mA	±390 µF	88%	ICZ0912D12
18-36 V	±15.0 V	±300 mA	15 mA	843 mA	±200 µF	89%	ICZ0912D15
	3.3 V	2000 mA	15 mA	335 mA	2600 µF	82%	ICZ0924S3V3
	5.0 V	1600 mA	15 mA	392 mA	1300 µF	85%	ICZ0924S05
	9.0 V	1000 mA	15 mA	426 mA	800 µF	88%	ICZ0924S09
	12.0 V	750 mA	15 mA	421 mA	560 µF	89%	ICZ0924S12
	15.0 V	600 mA	15 mA	417 mA	560 µF	90%	ICZ0924S15
	24.0 V	375 mA	15 mA	417 mA	200 µF	90%	ICZ0924S24
	±5.0 V	±800 mA	15 mA	388 mA	±800 µF	86%	ICZ0924D05
36-75 V	±12.0 V	±375 mA	15 mA	421 mA	±390 µF	89%	ICZ0924D12
	±15.0 V	±300 mA	15 mA	431 mA	±200 µF	87%	ICZ0924D15
	3.3 V	2000 mA	10 mA	168 mA	2600 µF	82%	ICZ0948S3V3
	5.0 V	1600 mA	10 mA	196 mA	1300 µF	85%	ICZ0948S05
	9.0 V	1000 mA	10 mA	213 mA	800 µF	88%	ICZ0948S09
	12.0 V	750 mA	10 mA	211 mA	560 µF	89%	ICZ0948S12
	15.0 V	600 mA	10 mA	211 mA	560 µF	89%	ICZ0948S15
	24.0 V	375 mA	10 mA	211 mA	200 µF	89%	ICZ0948S24
36-75 V	±5.0 V	±800 mA	10 mA	194 mA	±800 µF	86%	ICZ0948D05
	±12.0 V	±375 mA	10 mA	216 mA	±390 µF	87%	ICZ0948D12
	±15.0 V	±300 mA	10 mA	216 mA	±200 µF	87%	ICZ0948D15

#### Notes

1. Input currents measured at nominal input voltage.

2. Maximum capacitive load is per output.

### Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage Range	9		18	VDC	12 V nominal
	18		36	VDC	24 V nominal
	36		75	VDC	48 V nominal
Input Filter	Capacitor				
Input Reflected Ripple			30	mA pk-pk	Through 12 $\mu$ H inductor and 47 $\mu$ F capacitor
Input Surge			25	VDC for 100 ms	12 V models
			50	VDC for 100 ms	24 V models
			100	VDC for 100 ms	48 V models
Undervoltage Lockout	On at >9.0 V, Off at <7.0 V				12 V models
	On at >18.0 V, Off at <14.0 V				24 V models
	On at >36.0 V, Off at <28.0 V				48 V models

### Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	3.3		30	VDC	See Models and Ratings table
Initial Set Accuracy			$\pm 1$	%	At full load
Minimum Load	0			A	No minimum load required
Line Regulation			$\pm 0.2$	%	
Load Regulation			$\pm 0.5$	%	Single output from 0 to full load
			$\pm 1$	%	3V3 and dual output from 0 to full load
Cross Regulation			$\pm 5$	%	On dual output models when one load is varied between 25% and 100% and other is fixed at 100%
Transient Response			$\pm 5/\pm 3$	% deviation	For 3V3 output models / all other models. Recovery within 2% in less than 250 $\mu$ s for a 25% load change
Ripple & Noise			75	mV pk-pk	3.3-9V/12-24V. 20 MHz bandwidth. Measured using 1 $\mu$ F ceramic and 10 $\mu$ F electrolytic capacitors
Overload Protection		180		%	
Short Circuit Protection					Continuous, with auto recovery
Maximum Capacitive Load					See Models and Ratings table
Temperature Coefficient			0.02	%/ $^{\circ}$ C	
Remote On/Off	Output is on if remote on/off (pin 3) is open circuit. Output is off if 2.4 mA current is applied to remote on/off (pin 3).				

### General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		88		%	See Models and Ratings table
Isolation: Input to Output	1600			VDC	
Isolation: Input to Case	1000				
Switching Frequency		400/500		kHz	Single output / Dual output
Isolation Resistance	$10^9$			$\Omega$	
Isolation Capacitance		50		pF	
Power Density			62.6	Win <sup>3</sup>	
Mean Time Between Failure	900			kHrs	MIL-HDBK-217F, +25 $^{\circ}$ C GB
Weight		0.013 (5.9)		lb (g)	

### Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-40		+85	$^{\circ}$ C	Derate from 100% load at +50 $^{\circ}$ C to no load at +85 $^{\circ}$ C for 3V3 output, and 100% load at 60 $^{\circ}$ C to no load at 85 $^{\circ}$ C for other models
Storage Temperature	-55		+125	$^{\circ}$ C	
Case Temperature			+100	$^{\circ}$ C	
Humidity			95	%RH	Non-condensing
Cooling					Natural convection

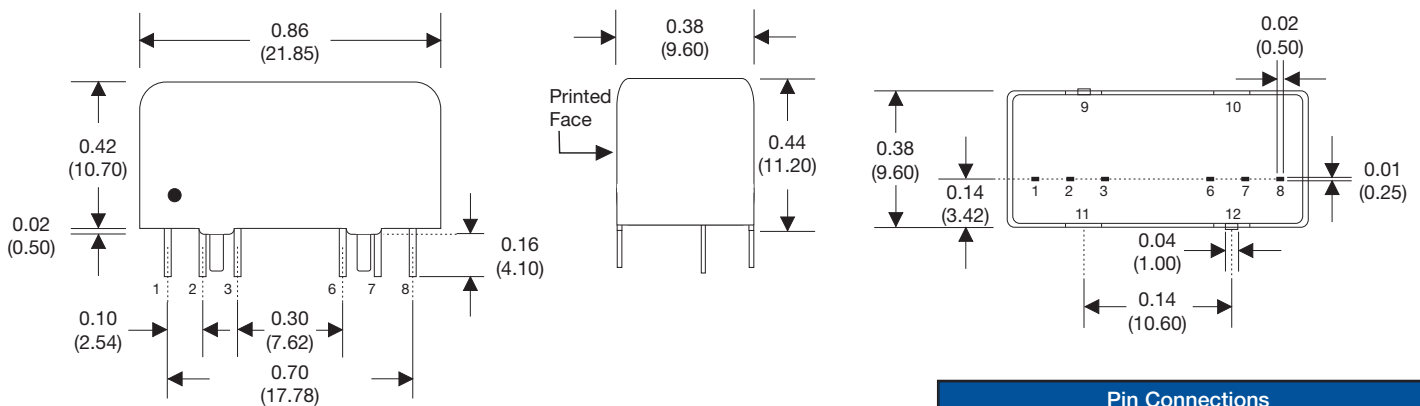
### EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Conducted	EN55032	Class A	
Radiated	EN55032	Class A	

### EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD Immunity	EN61000-4-2	±6 kV/±8 kV	A	Contact/Air Discharge
Radiated Immunity	EN61000-4-3	20 Vrms	A	
EFT/Burst	EN61000-4-4	±2 kV	A	External input capacitor required 330 µF/100 V
Surges	EN61000-4-5	±2 kV	A	External input capacitor required 330 µF/100 V
Conducted Immunity	EN61000-4-6	10 V rms	A	
Magnetic Fields	EN61000-4-8	100 A/m	A	

### Mechanical Details



### Notes

- All dimensions are in inches (mm)
- Weight: 0.013 lbs (5.9 g) approx.
- Pin diameter: 0.02±0.002 (0.5±0.05)
- Pin pitch tolerance: ±0.014 (±0.35)
- Case tolerance: ±0.02 (±0.5)

Pin Connections		
Pin	Single	Dual
1	-Vin	-Vin
2	+Vin	+Vin
3	Remote On/Off	Remote On/Off
6	+Vout	+Vout
7	-Vout	Common
8	No Connection	-Vout
9	Case	Case
10	Stand Off	Stand Off
11	Stand Off	Stand Off
12	Case	Case