ISK Series

DC-DC Converter

XP Power

0.25 Watt

- Single Output
- SMD Package
- Industry Standard Pinout
- Operating Temperature -40 °C to +105 °C
- 1500 VDC Isolation
- 3 Year Warranty

Dimensions:

ISK:
0.500 x 0.44 x 0.285" (12.7 x 11.2 x 7.25 mm)

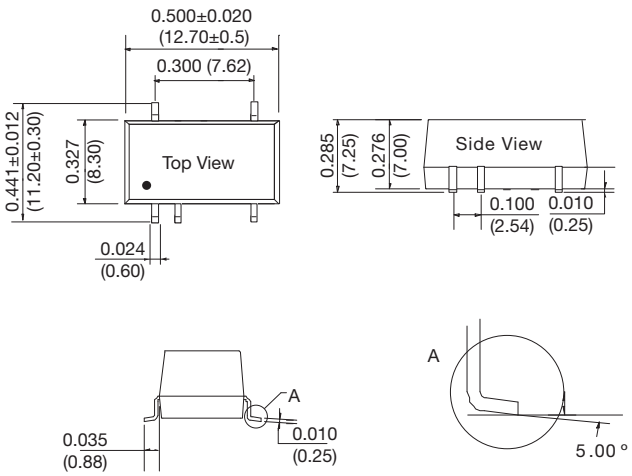
Models & Ratings

Input Voltage	Output Voltage	Output Current	Input Current[3]		Maximum Capacitive Load	Efficiency	Model Number
			No Load	Full Load			
4.5-5.5	3.3V	76mA	15mA	68mA	220uF	74%	ISK0503A
	5V	50mA	15mA	68mA	220uF	79%	ISK0505A
10.8-13.2	5V	50mA	10mA	27mA	220uF	79%	ISK1205A
	12V	21mA	10mA	27mA	220uF	79%	ISK1212A
21.6-26.4	5V	50mA	8mA	15mA	220uF	71%	ISK2405A

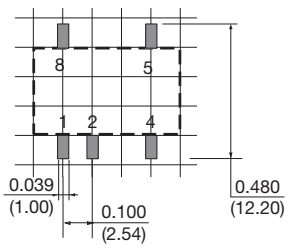
Notes

1. Input currents measured at nominal input voltage.
2. Typical value at full load.

Mechanical Details



Recommended Footprint
Top View grid: 0.1 x 0.1 in (2.54 x 2.54 mm)



PIN CONNECTIONS	
Pin	Function
1	GND
2	+Vin
4	0 V
5	+Vout
8	No Connection

Notes

1. All dimensions are in inches (mm)
2. Weight: 0.003 lbs (1.5 g) typical.
3. Pin diameter: 0.02 ±0.002 (0.5 ±0.005)
4. Pin pitch and length tolerance: ±0.014 (±0.35)
5. Case tolerance: ±0.02 (±0.5)

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage Range	4.50		5.50	VDC	5 V nominal
	10.80		13.20	VDC	12 V nominal
	21.60		26.40	VDC	24 V nominal
Input Current					See Models and Ratings table
Input Reflected Ripple		20/5		mA pk-pk	5 V/12+12V Input. Through 12 µH inductor and 47 µF capacitor
Input Surge			9	VDC for 1 s	5 V models
			18	VDC for 1 s	12 V models
			30	VDC for 1 s	24 V models
Input Filter	Capacitor				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	3.3		24	VDC	See Models and Ratings table
Initial Set Accuracy			-7.5, +2.5	%	At 70% load
Minimum Load	10			%	
Line Regulation			±1.2	%	Per 1% change of input voltage (±1.5% for 3V3 output)
Load Regulation				%	See graph
Start Up Delay		2		ms	
Ripple and Noise			20/60	mV pk-pk	20 MHz bandwidth, measured using 0.1 µF capacitor
Transient Response			3	% deviation	Recovery to within 1% in 500 µs for a 25% load change
Short Circuit Protection					Continuous, with auto recovery
Maximum Capacitive Load			220	µF	
Temperature Coefficient			0.03	%/°C	

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency					See Models and Ratings table
Isolation: Input to Output	1500			VDC	For optional high isolation versions, 3000 VDC input to output add suffix -H to model number
Switching Frequency	50		300	kHz	
Isolation Resistance	10^9			Ω	Input to output, tested at 500 VDC
Isolation Capacitance		20		pF	Input to output
Power Density			4.0	Win^3	
Mean Time Between Failure	3500			kHrs	MIL-HDBK-217F, +25 °C GB
Weight		0.003 (1.5)		lb (g)	

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-40		+105	°C	Derate from 100% load at +100 °C to 80% load at 105 °C
Storage Temperature	-55		+125	°C	
Case Temperature			+115	°C	
Operating Humidity			95	% RH	Non-condensing
Cooling					Natural convection

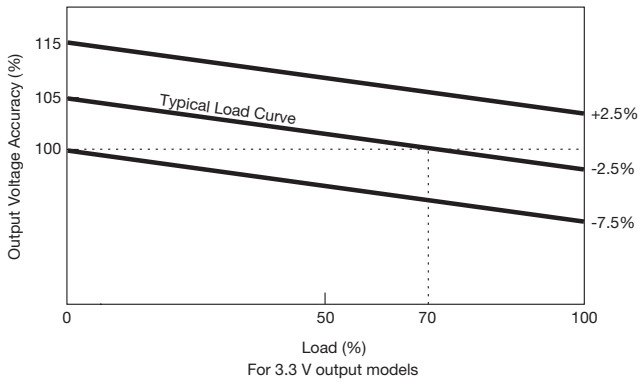
EMC: Emissions

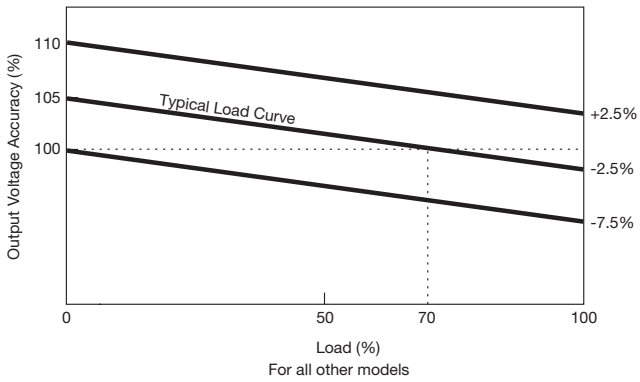
Phenomenon	Standard	Test Level	Notes & Conditions
Conducted	EN55022	Class B	See Application Note for Class B filter
Radiated	EN55022	Class B	See Application Note for Class B filter

EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD Immunity	EN61000-4-2	3	B	
Radiated Immunity	EN61000-4-3	3 V/m	A	
EFT/Burst	EN61000-4-4	2	B	External input capacitor required, 330 µF/100 V
Surge	EN61000-4-5	2	B	External input capacitor required, 330 µF/100 V
Conducted Immunity	EN61000-4-6	3 V rms	A	
Magnetic Fields	EN61000-4-8	1 A/m	A	

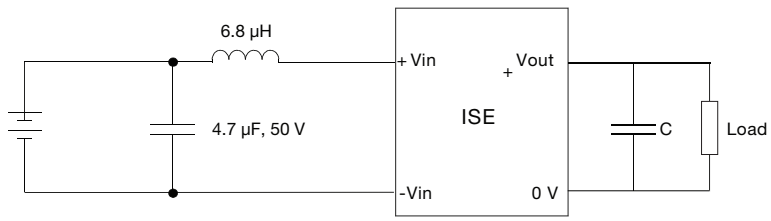
Load Regulation





Application Note

EMI Filter for Class B Emissions



Output Voltage	C
3.3	10.00 µF
5	10.00 µF
12	2.20 µF