

6W

DC-DC
converters



The ISX06 series is housed in a SMD16 surface mount package.

Featuring a 4:1 input voltage range of 9 to 36VDC or 18 to 75VDC with both single and dual outputs, singles have 3.3, 5, 12, 15 & 24VDC with duals having ± 5 , ± 12 & ± 15 VDC.

The 6W ISX06 provides 1.5kVDC isolation between input and output, the output has overload and short circuit protection, remote On/Off is standard.

The operating temperature range is from -40°C to +100°C, with derating above +60°C.



Features

- ▶ Regulated single & dual outputs
- ▶ 4:1 input range
- ▶ Single outputs 3.3 to 24VDC
- ▶ Dual outputs ± 5.0 to ± 15 VDC
- ▶ SMD16 package
- ▶ 1.5kVDC isolation
- ▶ Remote On/Off
- ▶ Water washable option
- ▶ Tape & reel option
- ▶ -40°C to +100°C operating temperature
- ▶ Full power to +60°C
- ▶ 3 year warranty

Applications



Autonomous
equipment



Industrial



Robotics



Technology

Dimensions

25.4 x 22.0 x 10.2mm (1.0" x 0.87" x 0.4")

Documentation

For further information click the link or scan the code

→ xppower.com



Models & ratings

Model number ⁽⁴⁾	Input voltage	Output voltage	Output current		Input current ^(1,2)		Maximum capacitive load ⁽³⁾	Efficiency
			Minimum	Maximum	No load	Full load		
ISX0624S3V3	9-36VDC	3.3VDC	218mA	1450mA	30mA	262mA	330 μ F	76%
ISX0624S05		5.0VDC	180mA	1200mA		316mA	330 μ F	79%
ISX0624S12		12.0VDC	75mA	500mA		300mA	100 μ F	83%
ISX0624S15		15.0VDC	60mA	400mA		300mA	100 μ F	83%
ISX0624S24		24.0VDC	38mA	250mA		300mA	100 μ F	83%
ISX0624D05		± 5.0 VDC	± 90 mA	± 600 mA		300mA	± 100 μ F	82%
ISX0624D12		± 12.0 VDC	± 38 mA	± 250 mA		300mA	± 100 μ F	83%
ISX0624D15		± 15.0 VDC	± 30 mA	± 200 mA		300mA	± 100 μ F	83%

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Notes:

1. Input currents measured at nominal input voltage.
2. Input current is typically 10mA at nominal input voltage when output is remotely turned off.

3. Maximum capacitive load is per output.
4. For optional water washable version, add suffix '-P' e.g. ISX0624S12-P.

Models & ratings

Model number ⁽⁴⁾	Input voltage	Output voltage	Output current		Input current ^(1,2)		Maximum capacitive load ⁽³⁾	Efficiency
			Minimum	Maximum	No load	Full load		
ISX0648S3V3	18-75VDC	3.3VDC	218mA	1450mA	20mA	130mA	330μF	76%
ISX0648S05		5.0VDC	180mA	1200mA		160mA	330μF	79%
ISX0648S12		12.0VDC	75mA	500mA		150mA	100μF	83%
ISX0648S15		15.0VDC	60mA	400mA		150mA	100μF	83%
ISX0648S24		24.0VDC	38mA	250mA		150mA	100μF	83%
ISX0648D05		±5.0VDC	±90mA	±600mA		150mA	±100μF	82%
ISX0648D12		±12.0VDC	±38mA	±250mA		150mA	±100μF	83%
ISX0648D15		±15.0VDC	±30mA	±200mA		150mA	±100μF	83%

Notes:

- Input currents measured at nominal input voltage.
- Input current is typically 10mA at nominal input voltage when output is remotely turned off.
- Maximum capacitive load is per output.
- For optional water washable version, add suffix '-P' e.g. ISX0624S12-P.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
	9.0		36	VDC	24VDC nominal
	18.0		75		48VDC nominal
Input filter	Internal Pi type filter				
Input reflected ripple		20		mA pk-pk	Through 12μH inductor and 47μF capacitor
Input surge			50	VDC for 1s	24VDC models
			100		48VDC models
Undervoltage lockout	ON at >4.5VDC, OFF at <8VDC				24VDC models
	ON at >8.5VDC, OFF at <17VDC				48VDC models
Remote on/off	ON: Logic high (2.5 - 50VDC) or open circuit, OFF: Logic low (<0.8VDC) or short pin 1 to pin 2				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	3.3		30	VDC	See models and ratings table
Initial set accuracy		±1	±2	%	
Output voltage balance		±1		%	For dual output with balanced loads
Minimum load	See models and ratings table				
Line regulation		±0.5	±1	%	
Load regulation		±0.5	±1.2	%	15% to 100% load
Cross regulation			±5	%	On dual output models when one load is varied between 25% and 100% and other is fixed at 100%
Transient response		3		% deviation	Recovery within 1% in less than 600μs for a 25% load change
Ripple & noise			100	mV pk-pk	20MHz bandwidth. Measured using 0.47μF ceramic capacitor
Overload protection	110	150			Foldback
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	60s, functional insulation
	1800				1s, functional insulation
Isolation resistance	10 ⁹			Ω	At 500VDC
Isolation capacitance		1200	1500	pF	
Switching frequency		330		kHz	
Power density			1.04 (17.2)	W/cm ³ (W/in ³)	
Mean time between failure		350		Mhrs	MIL-HDBK-217F, +25°C GB
Weight		7.8 (0.017)		g (lb)	
Moisture sensitivity level	Level 2, IPC/JEDEC J-STD-020D.1				

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-40		+100	°C	See derating curve
Storage temperature	-50		+125	°C	
Case temperature			+105	°C	
Humidity			95	%RH	Non-condensing
Cooling	Natural convection				
Case flammability	Non conductive black plastic, UL 94V-0 rated.				
Lead-free reflow solder process	IPC/JEDEC J-STD-020D.1				

Safety approvals

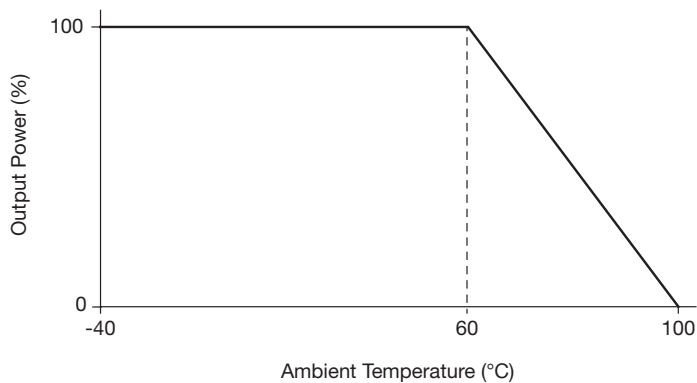
Safety agency	Standard	Notes & conditions
UL	UL/cUL60950-1, UL/cUL62368-1	Information technology
CB	IEC60950-1	Information technology
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Emissions - EMC

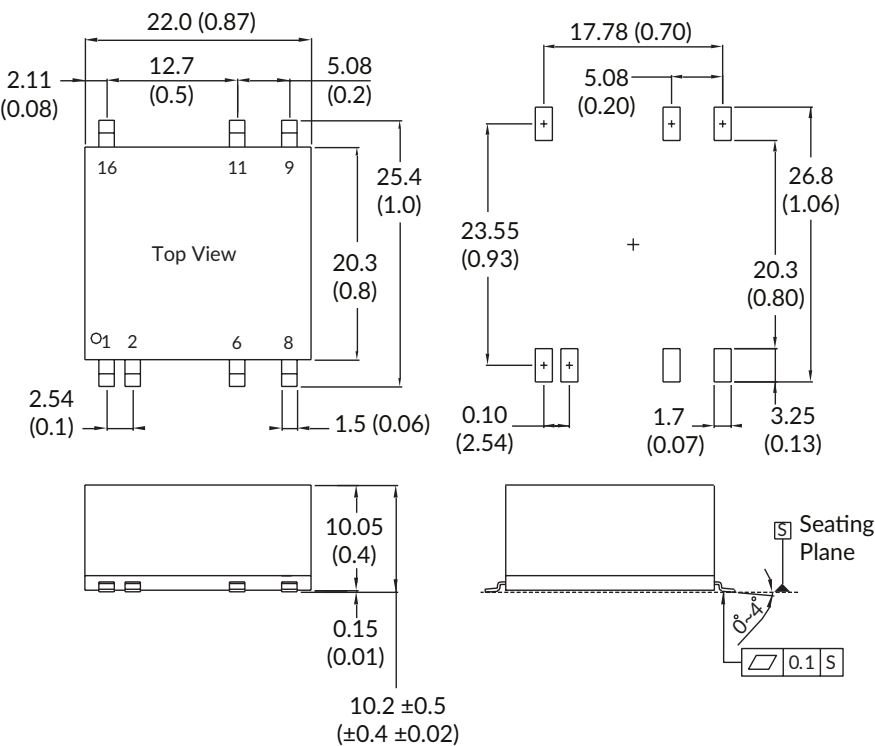
Phenomenon	Standard	Test level	Notes & conditions
Conducted	EN55032	Class A	

Application notes

Derating curve



Mechanical details



Pin connections		
Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-Vin	-Vin
6	No Connection	Common
8	No Connection	-Vout
9	+Vout	+Vout
11	-Vout	Common
16	+Vin	+Vin

- Notes:
- 1. All dimensions are in mm (inches)
 - 2. Weight: 7.8 (0.017) g (lb) approx.
 - 3. Pin tolerance: x.x ±0.25 (x.xx ±0.01), x.xx ±0.13 (x.xxx ±0.005)
 - 4. Pin tolerance: ±0.05 (±0.002)