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JCJ10 series

XP Power

10W

DC-DC converters

The 10W JCJ10 series is housed in a DIP24 PCB mount metal case. Featuring a 2:1 input voltage range of 9 to 18VDC, 18 to 36VDC or 36 to 75VDC with regulated single outputs of 2.5, 3.3, 5, 12 & 15VDC and dual outputs ±12 & ±15VDC.

The JCJ10 has 1.5kVDC isolation between input and output. Over voltage, overload & short circuit protection are standard. Operating temperature range is from -40°C to +100°C, with full power to +60°C.



Features

- Regulated single & dual outputs
- 2:1 input range
- Single outputs 2.5 to 15VDC
- Dual outputs ±12 & ±15VDC
- DIP24 metal case
- 1.5kVDC isolation
- -40°C to +100°C operating temperature
- Full power to +60°C
- 3 year warranty

Applications

Autonomous equipment

Industrial

Technology

Instrumentation

Robotics

Dimensions

31.75 x 20.32 x 10.16mm (1.25” x 0.80” x 0.40”)

More resources

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Models & ratings

Model number	Input voltage	Output voltage	Output current	Efficiency	Input current[1]		Maximum capacitive load
					No load	Full load	
JCJ1012S2V5	9-18VDC	2.5VDC	3.000A	81%	10mA	0.79A	2200µF
JCJ1012S3V3		3.3VDC	3.000A	84%	10mA	1.01A	2200µF
JCJ1012S05		5.0VDC	2.000A	86%	10mA	0.99A	2200µF
JCJ1012S12		12.0VDC	0.833A	87%	10mA	0.98A	820µF
JCJ1012S15		15.0VDC	0.667A	89%	10mA	0.96A	470µF
JCJ1012D12		±12.0VDC	±0.416A	87%	10mA	0.98A	±220µF
JCJ1012D15		±15.0VDC	±0.333A	88%	10mA	0.97A	±150µF

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Notes:

1. Input current measured at nominal input voltage.
2. From 10% to 100% load.
3. When one output is set at 100% load and the other varied between 25%-100% load
4. Measured with 20MHz bandwidth and 1µF ceramic capacitor across output rails.
5. A 220µF/100V capacitor across the input is required to meet EN61000-4-4 and EN61000-4-5

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Models & ratings

Model number	Input voltage	Output voltage	Output current	Efficiency	Input current[1]		Maximum capacitive load
					No load	Full load	
JCJ1024S2V5	18-36VDC	2.5VDC	3.000A	84%	10mA	0.38A	2200µF
JCJ1024S3V3		3.3VDC	3.000A	85%	10mA	0.50A	2200µF
JCJ1024S05		5.0VDC	2.000A	89%	10mA	0.48A	2200µF
JCJ1024S12		12.0VDC	0.833A	88%	10mA	0.49A	820µF
JCJ1024S15		15.0VDC	0.667A	88%	10mA	0.49A	470µF
JCJ1024D12		±12.0VDC	±0.416A	88%	10mA	0.49A	±220µF
JCJ1024D15		±15.0VDC	±0.333A	90%	10mA	0.47A	±150µF
JCJ1048S2V5	36-75VDC	2.5VDC	3.000A	84%	10mA	0.19A	2200µF
JCJ1048S3V3		3.3VDC	3.000A	85%	10mA	0.25A	2200µF
JCJ1048S05		5.0VDC	2.000A	88%	10mA	0.24A	2200µF
JCJ1048S12		12.0VDC	0.833A	87%	10mA	0.25A	820µF
JCJ1048S15		15.0VDC	0.667A	88%	10mA	0.24A	470µF
JCJ1048D12		±12.0VDC	±0.416A	87%	10mA	0.25A	±220µF
JCJ1048D15		±15.0VDC	±0.333A	87%	10mA	0.25A	±150µF

Notes:

1. Input current measured at nominal input voltage.
2. From 10% to 100% load.
3. When one output is set at 100% load and the other varied between 25%-100% load
4. Measured with 20MHz bandwidth and 1µF ceramic capacitor across output rails.
5. A 220µF/100V capacitor across the input is required to meet EN61000-4-4 and EN61000-4-5

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency	See models & ratings table				
Isolation: input to output		1500		VDC	
Isolation: input to case		1000		VDC	
Isolation: output to case		1000		VDC	
Isolation capacitance			1200	pF	
Switching frequency		330		kHz	
Power density		1.5 (25)		W/cm^3 (W/in^3)	
Mean time between failure		>900		khrs	MIL-HDBK-217F, +25°C GB

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage range	9		18	VDC	12VDC nominal
	18		36		24VDC nominal
	36		75		48VDC nominal
Input current	See models & ratings table				
Input filter	Pi network				
Input relfected ripple current		20		mA/pk-pk	12µH inductor
Input surge		24/25		VDC	12VDC models (for 100ms max)
		40/50			24VDC models (for 100ms max)
		100			48VDC models (for 100ms max)

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Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	See models & ratings table				
Output voltage trim		±1		%	Dual outputs
Minimum load	0			%	No minimum load required
Initial set accuracy			±1	%	
Line regulation		±0.5		%	
Load regulation		±0.7		%	2.5-3.3VDC models, ±0.5% for all other models
Cross regulation		±5.0		%	Dual outputs
Transient response			<3	%	Deviation, recovery to within 1% in 200µs for a 25% load change
Start up rise time		3.5		ms	
Ripple & noise		75		mV	Measured with 20MHz bandwidth
Overcurrent protection		>150		%	Trip and restart (hiccup mode)
Overvoltage protection		3.9		VDC	3.3VDC
		6.2			5VDC
		15			12VDC
		18			15VDC
		±15			±12VDC
		±18			±15VDC
Short circuit protection	Trip & restart (hiccup) with auto recovery				
Temperature coefficient			±0.02	%/ ˚C	

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-40		+100	°C	Derate from 100% load at +60°C to no load at +100°C
Storage temperature	-40		+125	°C	
Case temperature			+100	°C	
Cooling	Natural convection				
Operating humidity			95	%	RH, non condensing

Safety approvals

Certification	Standard	Notes & conditions
UL	UL62368-1	
EN	CAN/CSA C22.2 No. 62368-1	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Emissions - EMC

Phenomenon	Standard	Test level	Notes & conditions
Conducted	EN55032	Class A	With external components, see application note
Radiated	EN55032	Class A	

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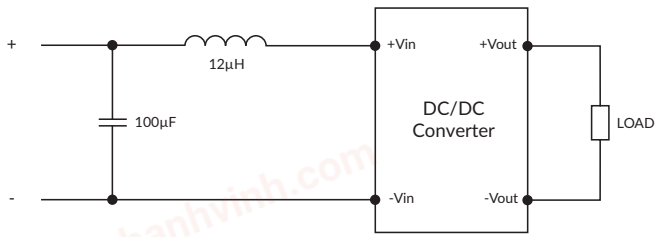
Immunity - EMC

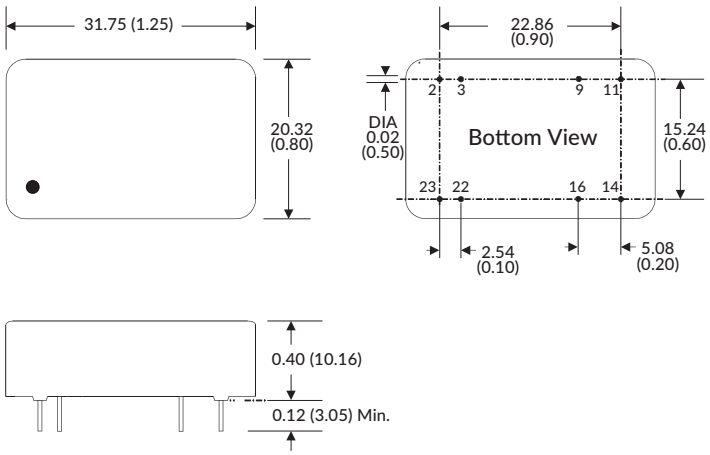
Phenomenon	Standard	Test level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2		A	6kV contact discharge
EFT/Burst	EN61000-4-4	Level 3	A	
Surge	EN61000-4-5	Class 3	A	
Radiated immunity	EN61000-4-4	3V/m	A	
Conducted immunity	EN61000-4-6	10Vrms	A	
Magnetic fields	EN61000-4-8	1A/m	A	

Application notes

Input filter



Mechanical details



Pin connections		
Pin	**Single**	**Dual**
2	-Vin	-Vin
3	-Vin	-Vin
9	No pin	Common
11	N/C	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

Notes:

1. All dimensions are in mm (inches)
2. Weight: 17g (0.04lbs) approx.
3. Pin pitch and length tolerance: ±0.35 (±0.014)
4. Pin diameter tolerance: 0.5 ±0.05 (0.02 ±0.002)
5. Case tolerance: ±0.5 (±0.02)
6. Package: 24 pin DIL nickel-coated copper.