JCJ08 series

XP Power

8W Convection cooled

DC-DC converters

The 8W JCJ08 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 3.3, 5, 12 & 15VDC and dual outputs ±5, ±12 & ±15VDC.

The JCJ08 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 3.3 to 15VDC
- Dual outputs ±5.0 to ±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”)

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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	
JCJ0812S3V3	9-18VDC	3.3VDC	2.000A	80%	20mA	0.69A	3300µF
JCJ0812S05		5.0VDC	1.500A	82%	20mA	0.76A	2200µF
JCJ0812S12		12.0VDC	0.665A	85%	20mA	0.78A	470µF
JCJ0812S15		15.0VDC	0.535A	83%	20mA	0.80A	220µF
JCJ0812D05		±5.0VDC	±0.800A	82%	20mA	0.81A	±1000µF
JCJ0812D12		±12.0VDC	±0.335A	84%	20mA	0.79A	±220µF
JCJ0812D15		±15.0VDC	±0.265A	84%	20mA	0.79A	±100µF

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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

JCJ08 series

Models & ratings

Model number	Input voltage	Output voltage	Output current	Efficiency	Input current[1]		Maximum capacitive load
					No load	Full load	
JCJ0824S2V5	18-36VDC	3.3VDC	2.000A	84%	15mA	0.34A	3300µF
JCJ0824S3V3		5.0VDC	1.500A	85%	15mA	0.38A	2200µF
JCJ0824S05		12.0VDC	0.665A	89%	15mA	0.39A	470µF
JCJ0824S12		15.0VDC	0.535A	88%	15mA	0.40A	220µF
JCJ0824S15		±5.0VDC	±0.800A	88%	15mA	0.41A	±1000µF
JCJ0824D12		±12.0VDC	±0.335A	88%	15mA	0.40A	±220µF
JCJ0824D15		±15.0VDC	±0.265A	90%	15mA	0.39A	±100µF
JCJ0848S2V5	36-75VDC	3.3VDC	2.000A	84%	15mA	0.17A	3300µF
JCJ0848S3V3		5.0VDC	1.500A	85%	15mA	0.19A	2200µF
JCJ0848S05		12.0VDC	0.665A	88%	15mA	0.20A	470µF
JCJ0848S12		15.0VDC	0.535A	87%	15mA	0.20A	220µF
JCJ0848S15		±5.0VDC	±0.800A	88%	15mA	0.20A	±1000µF
JCJ0848D12		±12.0VDC	±0.335A	87%	15mA	0.20A	±220µF
JCJ0848D15		±15.0VDC	±0.265A	87%	15mA	0.20A	±100µF

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		327.74 (20)		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
	18		36		24VDC
	36		75		48VDC
Input current	See models & ratings table				
Input filter	Pi network				
Input relfected ripple current		35		mA/pk-pk	12µH inductor
Input surge		24/25		VDC	12VDC models (for 1s max)
		40/50			24VDC models (for 1s max)
		100			48VDC models (for 1s max)

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
Overload protection		>150		%	Trip and restart (hiccup mode)
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

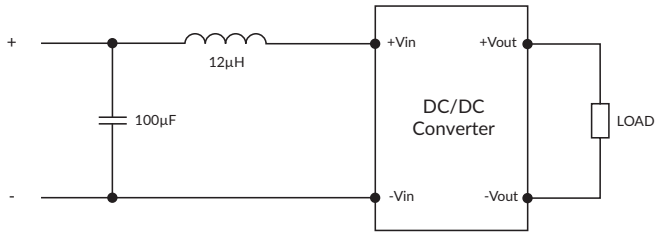
Phenomenon	Standard	Test level	Notes & conditions
Conducted	EN55032	Class A	With external components, see application note
Radiated	EN55032	Class A	

Immunity - EMC

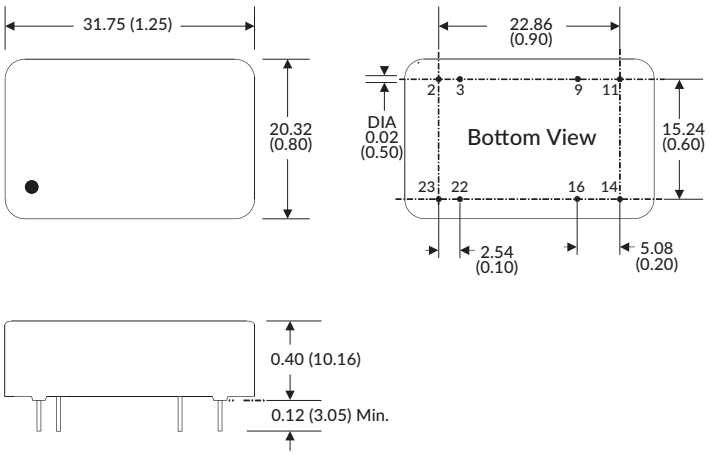
Phenomenon	Standard	Test level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2		A	8kV air discharge, 4kV contact discharge
EFT/Burst	EN61000-4-4	Level 1		
Surge	EN61000-4-5	Class 2	A	
Radiated immunity	EN61000-4-4	3V/m	A	
Conducted immunity	EN61000-4-6	3Vrms	A	
Magnetic fields	EN61000-4-8	1A/m	A	

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. 24 pin DIL nickel-coated copper