JCE03 series

3W

DC-DC converters

The JCE03 series is housed in a DIP24 PCB mount plastic 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, 15 & 24VDC and dual outputs ±3.3, ±5, ±9, ±15 or ±24VDC.

The 3W JCE03 has 1.5kVDC isolation (3KV optional) between input and output, short circuit protection is standard. The operating temperature range is from -40°C to +100°C, with derating above +85°C.



Features

- Regulated single & dual outputs
- 2:1 input range
- Single outputs 3.3 to 24VDC
- Dual outputs ±3.3 to ±24VDC
- DIP24 package
- 1.5kVDC isolation, 3.0kVDC option
- -40°C to +100°C operating temperature
- Full power to +85°C
- 3 year warranty

Applications

Autonomous equipment

Industrial

Technology

Instrumentation

Robotics

Dimensions

25.4 x 20.3 x 10.1mm (1.00” x 0.80” x 0.40”)

Documentation

For further information click the link or scan the code

→ xppower.com

Models & ratings

Model number[3]	Input voltage	Output voltage	Output current	Efficiency	Input current[1]		Maximum Capacitive Load[2]
					No load	Full load	
JCE0312S3V3	9-18VDC	3.3VDC	900 mA	74%	7mA	339mA	470µF
JCE0312S05		5.0VDC	600 mA	78%	7mA	325mA	470µF
JCE0312S12		12.0VDC	250 mA	81%	10mA	313mA	100µF
JCE0312S15		15.0VDC	200 mA	81%	10mA	313mA	100µF
JCE0312S24		24.0VDC	125 mA	80%	20mA	316mA	47µF
JCE0312D03		±3.3VDC	±450 mA	74%	10mA	339mA	±220µF
JCE0312D05		±5.0VDC	±300 mA	78%	10mA	325mA	±220µF
JCE0312D12		±12.0VDC	±125 mA	81%	15mA	313mA	±100µF
JCE0312D15		±15.0VDC	±100 mA	81%	20mA	313mA	±100µF
JCE0312D24		±24.0VDC	±63 mA	80%	35mA	319mA	±47µF

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Notes:

1. Input currents measured at nominal input voltage.
2. Maximum capacitive load is per output.
3. For optional 3000VDC isolation add suffix ‘-H’ to model number.

JCE03 series

Models & ratings

Model number[3]	Input voltage	Output voltage	Output current	Efficiency	Input current[1]		Maximum Capacitive Load[2]
					No load	Full load	
JCE0324S3V3	18-36VDC	3.3VDC	900 mA	73%	7mA	172mA	470µF
JCE0324S05		5.0VDC	600 mA	77%	7mA	164mA	470µF
JCE0324S12		12.0VDC	250 mA	81%	7mA	156mA	100µF
JCE0324S15		15.0VDC	200 mA	81%	7mA	156mA	100µF
JCE0324S24		24.0VDC	125 mA	81%	10mA	156mA	47µF
JCE0324D03		±3.3VDC	±450 mA	75%	7mA	167mA	±220µF
JCE0324D05		±5.0VDC	±300 mA	79%	7mA	160mA	±220µF
JCE0324D12		±12.0VDC	±125 mA	81%	10mA	156mA	±100µF
JCE0324D15		±15.0VDC	±100 mA	81%	15mA	156mA	±100µF
JCE0324D24		±24.0VDC	±63 mA	81%	20mA	158mA	±47µF
JCE0348S3V3	36-75VDC	3.3VDC	900 mA	75%	7mA	84mA	470µF
JCE0348S05		5.0VDC	600 mA	79%	7mA	80mA	470µF
JCE0348S12		12.0VDC	250 mA	81%	7mA	78mA	100µF
JCE0348S15		15.0VDC	200 mA	81%	7mA	78mA	100µF
JCE0348S24		24.0VDC	125 mA	81%	7mA	78mA	47µF
JCE0348D03		±3.3VDC	±450 mA	77%	7mA	81mA	±220µF
JCE0348D05		±5.0VDC	±300 mA	81%	7mA	78mA	±220µF
JCE0348D12		±12.0VDC	±125 mA	81%	7mA	78mA	±100µF
JCE0348D15		±15.0VDC	±100 mA	81%	7mA	78mA	±100µF
JCE0348D24		±24.0VDC	±63 mA	79%	15mA	81mA	±47µF

Notes:

1. Input currents measured at nominal input voltage.
2. Maximum capacitive load is per output.
3. For optional 3000VDC isolation add suffix '-H' to model number.

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 filter	Pi network				
Input reflected ripple			20	mA pk-pk	Through 12µH inductor and 47µF capacitor
Input surge			25	VDC	12VDC models (for 1s max)
			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				
Initial set accuracy			±2	%	
Minimum load	0			A	No minimum load required
Line regulation			±0.5	%	
Load regulation			±1.2	%	
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 2% in less than 2ms for a 25% load change. S3V3 versions: 5% max
Ripple & noise			80	mV pk-pk	20 MHz bandwidth. Measured using 1µF ceramic capacitor D24 versions: 100mV pk-pk
Short circuit protection					Continuous, with auto recovery
Maximum capacitive load					See models and ratings table
Temperature coefficient			0.02	%/°C	Trip and restart (hiccup mode)

JCE03 series

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency		81		%	See models and ratings table
Isolation: Input to Output			1500	VDC	3000 VDC option, add '-H' to model number
Switching Frequency		330		kHz	
Isolation Resistance	10^9			Ω	
Isolation Capacitance		1000		pF	
Power Density			7.5	W/cm³ (W/in³)	
Mean Time Between Failure	800			khrs	MIL-HDBK-217F, +25°C GB
Weight		13.0 (0.03)		g (lb)	

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-40		+100	°C	Derate from 100% load at +85°C to no load at +100°C
Storage temperature	-55		+125	°C	
Case temperature			+100	°C	
Humidity			95	%	RH, non condensing
Cooling	Natural convection				

Safety approvals

Certification	Standard	Notes & conditions
UL	UL62368-1	Information technology
CSA	CAN/CSA C22.2 No.60950-1	Information technology
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Emissions - EMC

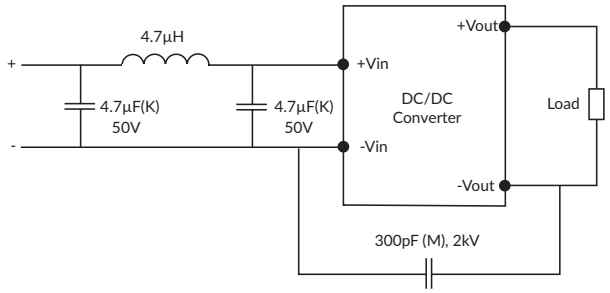
Phenomenon	Standard	Test level	Notes & conditions
Conducted	EN55022	Class A	Class B with external components, see application notes
Radiated	EN55022	Class A	

Immunity - EMC

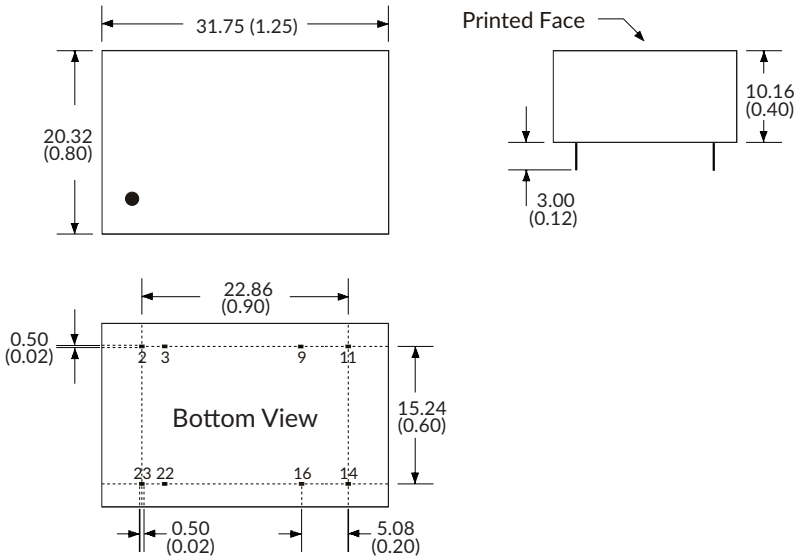
Phenomenon	Standard	Test level	Criteria	Notes & conditions
ESD Immunity	EN61000-4-2	3	A	
Radiated Immunity	EN61000-4-3	20 Vrms	A	
EFT/Burst	EN61000-4-4	3	A	External input capacitor required 330µF/100V
Surges	EN61000-4-5	Installation class 2	A	External input capacitor required 330µF/100V
Conducted Immunity	EN61000-4-6	3 V rms	A	
Magnetic Fields	EN61000-4-8	1A/m	A	

Application notes

Class B conducted emissions filter



Mechanical details



Pin connections		
Pin	**Single**	**Dual**
2	-Vin	-Vin
3	-Vin	-Vin
9	N.P.	Common
11	N.C.	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

Notes:

1. All dimensions in mm (inches)
2. Weight: 13g (0.03lbs)
3. Pin diameter: 0.5±0.05 (0.02±0.002)
4. Pin pitch tolerance: ±0.35 (±0.014)
5. Case tolerance: ±0.5 (±0.02)