JCE03 Series

DC-DC Converter

XP Power

3 Watt

- 2:1 Input Range
- DIP24 Plastic Case
- Operating Temperature -40 °C to +100 °C
- Single & Dual Outputs
- 1500 VDC Isolation, 3000 VDC Option
- Fully Regulated Output
- No Minimum Load Required
- 3 Year Warranty



Dimensions:

JCE:
1.25 x 0.80 x 0.40" (31.75 x 20.32 x 10.16 mm)

Models & Ratings

Input Voltage	Output Voltage	Output Current	Input Current[1]		Maximum Capacitive Load[2]	Efficiency	Model Number[3]
			No Load	Full Load			
9-18 V	3.3 V	900 mA	7 mA	339 mA	470 µF	74%	JCE0312S3V3
	5.0 V	600 mA	7 mA	325 mA	470 µF	78%	JCE0312S05
	12.0 V	250 mA	10 mA	313 mA	100 µF	81%	JCE0312S12
	15.0 V	200 mA	10 mA	313 mA	100 µF	81%	JCE0312S15
	24.0 V	125 mA	20 mA	316 mA	47 µF	80%	JCE0312S24
	±3.3 V	±450 mA	10 mA	339 mA	±220 µF	74%	JCE0312D03
	±5.0 V	±300 mA	10 mA	325 mA	±220 µF	78%	JCE0312D05
	±12.0 V	±125 mA	15 mA	313 mA	±100 µF	81%	JCE0312D12
	±15.0 V	±100 mA	20 mA	313 mA	±100 µF	81%	JCE0312D15
	±24.0 V	±63 mA	35 mA	319 mA	±47 µF	80%	JCE0312D24
18-36 V	3.3 V	900 mA	7 mA	172 mA	470 µF	73%	JCE0324S3V3
	5.0 V	600 mA	7 mA	164 mA	470 µF	77%	JCE0324S05
	12.0 V	250 mA	7 mA	156 mA	100 µF	81%	JCE0324S12
	15.0 V	200 mA	7 mA	156 mA	100 µF	81%	JCE0324S15
	24.0 V	125 mA	10 mA	156 mA	47 µF	81%	JCE0324S24
	±3.3 V	±450 mA	7 mA	167 mA	±220 µF	75%	JCE0324D03
	±5.0 V	±300 mA	7 mA	160 mA	±220 µF	79%	JCE0324D05
	±12.0 V	±125 mA	10 mA	156 mA	±100 µF	81%	JCE0324D12
	±15.0 V	±100 mA	15 mA	156 mA	±100 µF	81%	JCE0324D15
	±24.0 V	±63 mA	20 mA	158 mA	±47 µF	81%	JCE0324D24
36-75 V	3.3 V	900 mA	7 mA	84 mA	470 µF	75%	JCE0348S3V3
	5.0 V	600 mA	7 mA	80 mA	470 µF	79%	JCE0348S05
	12.0 V	250 mA	7 mA	78 mA	100 µF	81%	JCE0348S12
	15.0 V	200 mA	7 mA	78 mA	100 µF	81%	JCE0348S15
	24.0 V	125 mA	7 mA	78 mA	47 µF	81%	JCE0348S24
	±3.3 V	±450 mA	7 mA	81 mA	±220 µF	77%	JCE0348D03
	±5.0 V	±300 mA	7 mA	78 mA	±220 µF	81%	JCE0348D05
	±12.0 V	±125 mA	7 mA	78 mA	±100 µF	81%	JCE0348D12
	±15.0 V	±100 mA	7 mA	78 mA	±100 µF	81%	JCE0348D15
	±24.0 V	±63 mA	15 mA	81 mA	±47 µF	79%	JCE0348D24

Notes

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

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage Range	9		18	VDC	12 V nominal
	18		36	VDC	24 V nominal
	36		75	VDC	48 V nominal
Input Filter	Pi type				
Input Reflected Ripple			20	mA pk-pk	Through 12 µH inductor and 47 µF capacitor
Input Surge			25	VDC for 100 ms	12 V models
			50	VDC for 100 ms	24 V models
			100	VDC for 100 ms	48 V models

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage					See Models and 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 2 ms for a 25% load change. S3V3 versions: 5% max
Ripple & Noise			80	mV pk-pk	20 MHz bandwidth. Measured using 1 µF ceramic capacitor D24 versions: 100 mV pk-pk
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		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/in^3	
Mean Time Between Failure	800			kHrs	MIL-HDBK-217F, +25 °C GB
Weight		0.03 (13.0)		lb (g)	

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

EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Conducted	EN55032	Class A	Class B with external components, see application notes
Radiated	EN55032	Class A	

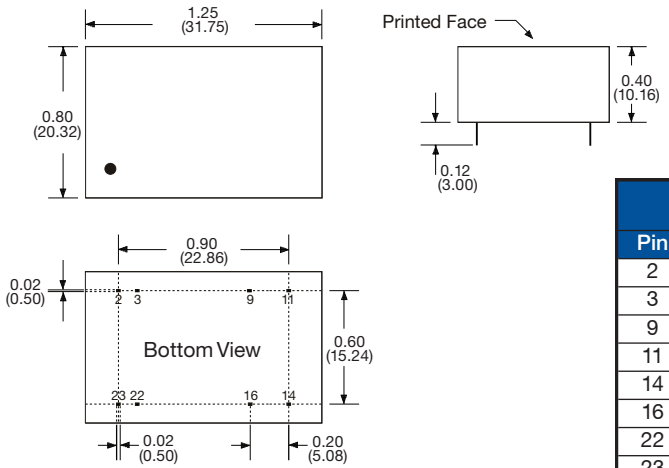
EMC: Immunity

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 330 µF/100 V
Surges	EN61000-4-5	Installation class 2	A	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	

Safety Approvals

Safety Agency	Safety Standard	Notes & Conditions
UL	UL62368-1 & CAN/CSA C22.2 No. 62368-1-14	Information Technology
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

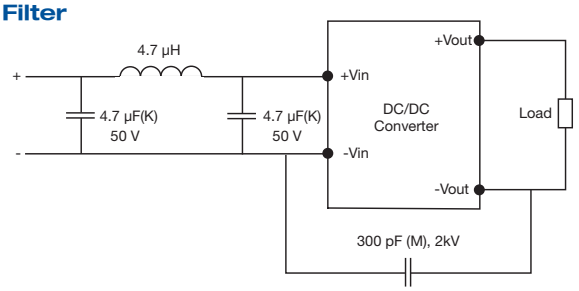
Mechanical Details



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

Application Notes

Class B Conducted Emissions Filter



Notes

1. All dimensions are in inches (mm)
2. Weight: 0.03 lbs (13.0 g) approx.
3. Pin diameter: 0.02±0.002 (0.5±0.05)
4. Pin pitch tolerance: ±0.014 (±0.35)
5. Case tolerance: ±0.02 (±0.5)