2-3 Watts

JCA02/03 Series

- Compact 1.0” x 0.8” Metal Package
- Industry Standard Pinout
- 2:1 Input Range
- Single & Dual Outputs
- Operating Temperature -40 °C to +100 °C
- 1500 VDC Isolation
- UL & TUV Approved

Specification

Input

Input Voltage Range	• 5 V (4.5-9.0 VDC) 12 V (9-18 VDC) 24 V (18-36 VDC) 48 V (36-75 VDC)
Input Current	• See table
Input Filter	• Pi network
Undervoltage Lockout	• Turn On at >90-95% of rated input Turn Off at <80% of rated input

Output

Output Voltage	• See table
Intial Set Accuracy	• ±1% max
Start Up Delay	• 30 ms max
Start Up Rise Time	• 3.5 ms typical
Line Regulation	• ±0.3%
Load Regulation	• ±1%
Cross Regulation	• ±5% on dual output models
Transient Response	• 4% max deviation, recovery to within 1% in <500 µs for a 25% load change at 1 A/µs
Ripple & Noise	• 50 mV pk-pk, 20 MHz BW
Overcurrent Protection	• 120% typical, trip and restart (Hiccup mode)
Short Circuit Protection	• Continuous with auto recovery
Overvoltage Protection	• 120% typical, Recycle input to reset
Temperature Coefficient	• ±0.05%/°C

General

Efficiency	• See table
Isolation	• 1500 VDC Input to Output, basic insulation 500 VDC Input to Case 500 VDC Output to Case
MTBF	• 400 kHrs to MIL-STD-217F

Environmental

Operating Temperature	• -40 °C to +100 °C output power derates from 100% load at +75 °C linearly to 0% load at +100 °C
Case Temperature	• +100 °C max
Storage Temperature	• -55 °C to +125 °C

EMC & Safety

Emissions	• EN55022, level A conducted (level B with external components, see application note), level B radiated
ESD Immunity	• EN61000-4-2, level 2 Perf Criteria A
Radiated Immunity	• EN61000-4-3, 3 V/m Perf Criteria A
Conducted Immunity	• EN61000-4-6, 3 V rms Perf Criteria A EN61000-4-8, 10 A/m Perf Criteria A
Safety Approvals	• EN60950-1: 2001, UL60950-1, CSA C22.2 No. 60950-1-03, CE Mark LVD

Models and Ratings

JCA02/03 Series

Input Voltage[1]	Output Voltage	Output Current	Input Current[2] No Load	Input Current[2] Full Load	Efficiency	Model Number
4.5-9.0 VDC	3.3 VDC	0.600 A	28 mA	560 mA	69%	JCA0205S03†^
	5.0 VDC	0.400 A	10 mA	535 mA	73%	JCA0205S05†^
	12.0 VDC	0.170 A	15 mA	526 mA	74%	JCA0205S12†^
	15.0 VDC	0.140 A	26 mA	559 mA	74%	JCA0205S15†^
	±5.0 VDC	±0.200 A	15 mA	502 mA	74%	JCA0205D01†^
	±12.0 VDC	±0.085 A	19 mA	537 mA	73%	JCA0205D02†^
	±15.0 VDC	±0.070 A	25 mA	560 mA	69%	JCA0205D03†^
9-18 VDC	3.3 VDC	0.600 A	8 mA	225 mA	72%	JCA0212S03†^
	5.0 VDC	0.400 A	5 mA	224 mA	74%	JCA0212S05†^
	12.0 VDC	0.170 A	5 mA	223 mA	74%	JCA0212S12†^
	15.0 VDC	0.140 A	7 mA	227 mA	74%	JCA0212S15†^
	±5.0 VDC	±0.200 A	10 mA	219 mA	74%	JCA0212D01†^
	±12.0 VDC	±0.085 A	9 mA	223 mA	74%	JCA0212D02†^
	±15.0 VDC	±0.070 A	11 mA	232 mA	73%	JCA0212D03†^
18-36 VDC	3.3 VDC	0.600 A	3 mA	112 mA	73%	JCA0224S03†^
	5.0 VDC	0.400 A	3 mA	107 mA	75%	JCA0224S05†^
	12.0 VDC	0.170 A	4 mA	109 mA	75%	JCA0224S12†^
	15.0 VDC	0.140 A	4 mA	111 mA	75%	JCA0224S15†^
	±5.0 VDC	±0.200 A	3 mA	107 mA	76%	JCA0224D01†^
	±12.0 VDC	±0.085 A	5 mA	108 mA	76%	JCA0224D02†^
	±15.0 VDC	±0.070 A	6 mA	115 mA	73%	JCA0224D03†^
36-75 VDC	3.3 VDC	0.600 A	3 mA	62 mA	71%	JCA0248S03†^
	5.0 VDC	0.400 A	5 mA	58 mA	70%	JCA0248S05†^
	12.0 VDC	0.170 A	3 mA	58 mA	70%	JCA0248S12†^
	15.0 VDC	0.140 A	3 mA	59 mA	72%	JCA0248S15†^
	±5.0 VDC	±0.200 A	2 mA	56 mA	73%	JCA0248D01†^
	±12.0 VDC	±0.085 A	3 mA	57 mA	73%	JCA0248D02†^
	±15.0 VDC	±0.070 A	3 mA	60 mA	70%	JCA0248D03†^
Input Voltage[1]	Output Voltage	Output Current	Input Current[2] No Load	Input Current[2] Full Load	Efficiency	Model Number
4.5-9.0 VDC	3.3 VDC	0.91 A	28 mA	873 mA	66%	JCA0305S03†^
	5.0 VDC	0.60 A	10 mA	835 mA	71%	JCA0305S05†^
	12.0 VDC	0.26 A	15 mA	805 mA	75%	JCA0305S12†^
	15.0 VDC	0.20 A	26 mA	804 mA	74%	JCA0305S15†^
	±5.0 VDC	±0.30 A	15 mA	778 mA	74%	JCA0305D01†^
	±12.0 VDC	±0.13 A	19 mA	793 mA	74%	JCA0305D02†^
	±15.0 VDC	±0.10 A	25 mA	820 mA	72%	JCA0305D03†^
9-18 VDC	3.3 VDC	0.91 A	8 mA	333 mA	74%	JCA0312S03†^
	5.0 VDC	0.60 A	5 mA	324 mA	75%	JCA0312S05†^
	12.0 VDC	0.26 A	5 mA	315 mA	78%	JCA0312S12†^
	15.0 VDC	0.20 A	7 mA	322 mA	77%	JCA0312S15†^
	±5.0 VDC	±0.30 A	10 mA	325 mA	75%	JCA0312D01†^
	±12.0 VDC	±0.13 A	9 mA	313 mA	75%	JCA0312D02†^
	±15.0 VDC	±0.10 A	11 mA	322 mA	73%	JCA0312D03†^
18-36 VDC	3.3 VDC	0.91 A	3 mA	165 mA	74%	JCA0324S03†^
	5.0 VDC	0.60 A	3 mA	157 mA	77%	JCA0324S05†^
	12.0 VDC	0.26 A	4 mA	154 mA	77%	JCA0324S12†^
	15.0 VDC	0.20 A	4 mA	157 mA	77%	JCA0324S15†^
	±5.0 VDC	±0.30 A	3 mA	156 mA	77%	JCA0324D01†^
	±12.0 VDC	±0.13 A	5 mA	154 mA	77%	JCA0324D02†^
	±15.0 VDC	±0.10 A	6 mA	160 mA	75%	JCA0324D03†^
36-75 VDC	3.3 VDC	0.91 A	3 mA	82 mA	73%	JCA0348S03†^
	5.0 VDC	0.60 A	5 mA	82 mA	74%	JCA0348S05†^
	12.0 VDC	0.26 A	6 mA	79 mA	75%	JCA0348S12†^
	15.0 VDC	0.20 A	6 mA	81 mA	75%	JCA0348S15†^
	±5.0 VDC	±0.30 A	2 mA	79 mA	76%	JCA0348D01†^
	±12.0 VDC	±0.13 A	3 mA	78 mA	76%	JCA0348D02†^
	±15.0 VDC	±0.10 A	3 mA	82 mA	74%	JCA0348D03†^

Notes

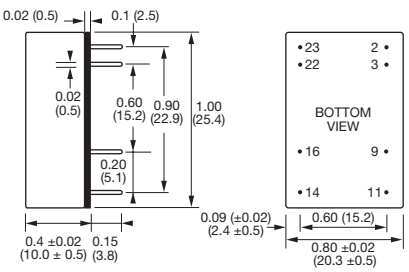
1. Nominal input voltage 5, 12, 24 or 48 VDC.

† Available from Farnell. See pages 204-206.

2. Input current is at nominal input voltage.

^ Available from Newark. See pages 207-208.

Mechanical Details and Application Note

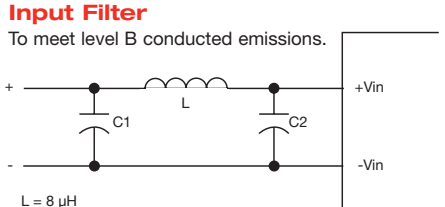


PIN CONNECTIONS		
Pin	Single Output	Dual Output
2	-Vin	-Vin
3	-Vin	-Vin
9	No pin	Common
11	N/C	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

Weight: 0.03 lbs (12 g)

Input Filter

To meet level B conducted emissions.



L = 8 µH
C1 = 1 µF
C2 = 10 µF