

4/6 Watts

JCA Series



- Compact 1.0"x 0.8" Metal Package
- Industry Standard Pin Out
- 2:1 Input Range
- Single & Dual Outputs
- Operating Temperature -40 °C to +100 °C
- UL & TUV Approved
- 3 Year Warranty

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
Input Surge	• 5 V models 10 V for 1 s max, 12 V models 25 V for 1 s max, 24 V models 50 V for 1 s max, 48 V models 100 V for 1 s max
Input Reflected Ripple	• 80 mA for 5 V models 30 mA for all other models

Output

Output Voltage	• See table
Initial Set Accuracy	• ±1% max
Start Up Delay	• 200 ms max
Start Up Rise Time	• 3.5 ms typical
Minimum Load	• No minimum load required
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 bandwidth
Overcurrent Protection	• 150% typical, trip & restart (hiccup mode)
Short Circuit Protection	• Continuous with auto recovery
Overvoltage Protection	• 150% 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
Switching Frequency	• 300 kHz typical
Power Density	• JCA04: 12.5 W/in³, JCA06: 18.8 W/in³
MTBF	• 1.0 MHrs to MIL-HDBK-217F at 25 °C, GB

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
Cooling	• Convection cooled
Operating Humidity	• Up to 95% RH, non-condensing

EMC & Safety

Emissions	• EN55022, level A conducted & radiated (level B with external components, see application note)
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
Magnetic Fields	• EN61000-4-8, 10 A/m, Perf Criteria A
Safety Approvals	• EN60950-1, UL60950-1, CSA C22.2 No. 60950-1-03, CE Mark LVD

Input Voltage ⁽¹⁾	Output Voltage	Output Current	Input Current ⁽²⁾		Efficiency	Max. Capacitive Load	Model Number
			No Load	Full Load			
4.5-9.0 VDC	3.3 VDC	1.22 A	44 mA	1000 mA	80%	470 µF	JCA0405S03
	5.0 VDC	0.80 A	66 mA	955 mA	83%	1000 µF	JCA0405S05
	12.0 VDC	0.34 A	9 mA	975 mA	84%	300 µF	JCA0405S12
	15.0 VDC	0.28 A	10 mA	985 mA	85%	200 µF	JCA0405S15
	±5.0 VDC	±0.40 A	12 mA	982 mA	81%	400 µF	JCA0405D01
	±12.0 VDC	±0.17 A	34 mA	973 mA	83%	120 µF	JCA0405D02
9-18 VDC	3.3 VDC	1.22 A	38 mA	403 mA	83%	1520 µF	JCA0412S03
	5.0 VDC	0.80 A	46 mA	396 mA	82%	1000 µF	JCA0412S05
	12.0 VDC	0.34 A	18 mA	404 mA	82%	222 µF	JCA0412S12
	15.0 VDC	0.28 A	22 mA	416 mA	84%	133 µF	JCA0412S15
	±5.0 VDC	±0.40 A	15 mA	409 mA	82%	400 µF	JCA0412D01
	±12.0 VDC	±0.17 A	21 mA	407 mA	83%	100 µF	JCA0412D02
18-36 VDC	3.3 VDC	1.22 A	21 mA	204 mA	82%	1520 µF	JCA0424S03
	5.0 VDC	0.80 A	34 mA	205 mA	80%	1000 µF	JCA0424S05
	12.0 VDC	0.34 A	13 mA	205 mA	82%	500 µF	JCA0424S12
	15.0 VDC	0.28 A	13 mA	211 mA	83%	300 µF	JCA0424S15
	±5.0 VDC	±0.40 A	11 mA	207 mA	81%	400 µF	JCA0424D01
	±12.0 VDC	±0.17 A	16 mA	209 mA	83%	250 µF	JCA0424D02
36-75 VDC	3.3 VDC	1.22 A	13 mA	104 mA	82%	1520 µF	JCA0448S03
	5.0 VDC	0.80 A	14 mA	104 mA	80%	1000 µF	JCA0448S05
	12.0 VDC	0.34 A	6 mA	103 mA	80%	500 µF	JCA0448S12
	15.0 VDC	0.28 A	7 mA	108 mA	81%	300 µF	JCA0448S15
	±5.0 VDC	±0.40 A	7 mA	108 mA	80%	400 µF	JCA0448D01
	±12.0 VDC	±0.17 A	8 mA	107 mA	82%	250 µF	JCA0448D02
36-75 VDC	3.3 VDC	1.22 A	10 mA	109 mA	82%	150 µF	JCA0448D03
	5.0 VDC	0.80 A	10 mA	109 mA	82%	150 µF	JCA0448D03
	12.0 VDC	0.34 A	10 mA	109 mA	82%	150 µF	JCA0448D03
	15.0 VDC	0.28 A	10 mA	109 mA	82%	150 µF	JCA0448D03
	±5.0 VDC	±0.40 A	10 mA	109 mA	82%	150 µF	JCA0448D03
	±12.0 VDC	±0.17 A	10 mA	109 mA	82%	150 µF	JCA0448D03

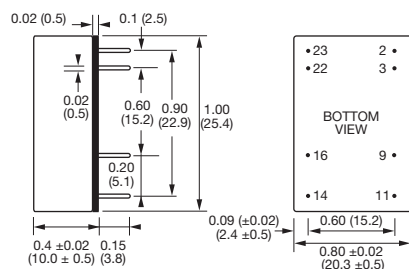
Input Voltage ⁽¹⁾	Output Voltage	Output Current	Input Current ⁽²⁾		Efficiency	Max. Capacitance	Model Number
			No Load	Full Load			
4.5-9.0 VDC	3.3 VDC	1.52 A	44 mA	1286 mA	82%	1000 µF	JCA0605S03
	5.0 VDC	1.00 A	66 mA	1208 mA	84%	1000 µF	JCA0605S05
	12.0 VDC	0.50 A	9 mA	1451 mA	84%	330 µF	JCA0605S12
	15.0 VDC	0.40 A	10 mA	1419 mA	84%	330 µF	JCA0605S15
	±5.0 VDC	±0.50 A	12 mA	1239 mA	81%	500 µF	JCA0605D01
	±12.0 VDC	±0.25 A	34 mA	1431 mA	83%	300 µF	JCA0605D02
9-18 VDC	3.3 VDC	1.52 A	38 mA	505 mA	82%	1520 µF	JCA0612S03
	5.0 VDC	1.00 A	46 mA	492 mA	82%	1000 µF	JCA0612S05
	12.0 VDC	0.50 A	18 mA	591 mA	84%	222 µF	JCA0612S12
	15.0 VDC	0.40 A	22 mA	589 mA	85%	330 µF	JCA0612S15
	±5.0 VDC	±0.50 A	15 mA	513 mA	82%	500 µF	JCA0612D01
	±12.0 VDC	±0.25 A	21 mA	591 mA	84%	150 µF	JCA0612D02
18-36 VDC	3.3 VDC	1.52 A	21 mA	255 mA	82%	1520 µF	JCA0624S03
	5.0 VDC	1.00 A	34 mA	252 mA	82%	1000 µF	JCA0624S05
	12.0 VDC	0.50 A	13 mA	297 mA	84%	500 µF	JCA0624S12
	15.0 VDC	0.40 A	13 mA	297 mA	84%	330 µF	JCA0624S15
	±5.0 VDC	±0.50 A	11 mA	257 mA	81%	500 µF	JCA0624D01
	±12.0 VDC	±0.25 A	16 mA	299 mA	84%	300 µF	JCA0624D02
36-75 VDC	3.3 VDC	1.52 A	13 mA	130 mA	82%	1520 µF	JCA0648S03
	5.0 VDC	1.00 A	14 mA	128 mA	81%	1000 µF	JCA0648S05
	12.0 VDC	0.50 A	6 mA	149 mA	84%	500 µF	JCA0648S12
	15.0 VDC	0.40 A	7 mA	149 mA	84%	330 µF	JCA0648S15
	±5.0 VDC	±0.50 A	7 mA	131 mA	80%	500 µF	JCA0648D01
	±12.0 VDC	±0.25 A	8 mA	150 mA	83%	300 µF	JCA0648D02
36-75 VDC	3.3 VDC	1.52 A	10 mA	150 mA	83%	200 µF	JCA0648D03
	5.0 VDC	1.00 A	10 mA	150 mA	83%	200 µF	JCA0648D03
	12.0 VDC	0.50 A	10 mA	150 mA	83%	200 µF	JCA0648D03
	15.0 VDC	0.40 A	10 mA	150 mA	83%	200 µF	JCA0648D03
	±5.0 VDC	±0.50 A	10 mA	150 mA	83%	200 µF	JCA0648D03
	±12.0 VDC	±0.25 A	10 mA	150 mA	83%	200 µF	JCA0648D03

Notes

- Nominal input voltage 5, 12, 24 or 48 VDC.
- Input current is at nominal input voltage.

- Efficiency is measured at nominal input and full load at 25 °C.

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

- All dimensions are in inches (mm)
- Weight: 0.03 lbs (12 g)
- Pin diameter tolerance: ±0.00079 (±0.02)
- Pin pitch tolerance: ±0.01 (±0.25)
- Case tolerance: ±0.02 (±0.5)

Input Filter

To meet level B conducted emissions.

