

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 $-40\text{ }^{\circ}\text{C}$ to $+100\text{ }^{\circ}\text{C}$
- 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
Undervoltage Lockout	• Turn On at $>90\text{-}95\%$ of rated input Turn Off at $<80\%$ of rated input
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	• $\pm 1\%$ max
Start Up Delay	• 200 ms max
Start Up Rise Time	• 3.5 ms typical
Minimum Load	• No minimum load required
Line Regulation	• $\pm 0.3\%$
Load Regulation	• $\pm 1\%$
Cross Regulation	• $\pm 5\%$ on dual output models
Transient Response	• 4% max deviation, recovery to within 1% in $<500\text{ }\mu\text{s}$ 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	• $\pm 0.05\%/^{\circ}\text{C}$

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/in ³ , JCA06: 18.8 W/in ³
MTBF	• 1.0 Mhrs to MIL-HDBK-217F at 25 $^{\circ}\text{C}$, GB

Environmental

Operating Temperature	• $-40\text{ }^{\circ}\text{C}$ to $+100\text{ }^{\circ}\text{C}$ output power derates from 100% load at $+75\text{ }^{\circ}\text{C}$ linearly to 0% load at $+100\text{ }^{\circ}\text{C}$
Case Temperature	• $+100\text{ }^{\circ}\text{C}$ max
Storage Temperature	• $-55\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$
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 ⁽³⁾		Efficiency	Model Number
			No Load	Full Load		
4.5-9.0 VDC	3.3 VDC	1.22 A	44 mA	1000 mA	80%	JCA0405S03†^
	5.0 VDC	0.80 A	66 mA	955 mA	83%	JCA0405S05†^
	12.0 VDC	0.34 A	9 mA	975 mA	84%	JCA0405S12†^
	15.0 VDC	0.28 A	10 mA	985 mA	85%	JCA0405S15†^
	±5.0 VDC	±0.40 A	12 mA	982 mA	81%	JCA0405D01†^
	±12.0 VDC	±0.17 A	34 mA	973 mA	83%	JCA0405D02†^
9-18 VDC	3.3 VDC	1.22 A	38 mA	403 mA	83%	JCA0412S03†^
	5.0 VDC	0.80 A	46 mA	396 mA	82%	JCA0412S05†^
	12.0 VDC	0.34 A	18 mA	404 mA	82%	JCA0412S12†^
	15.0 VDC	0.28 A	22 mA	416 mA	84%	JCA0412S15†^
	±5.0 VDC	±0.40 A	15 mA	409 mA	82%	JCA0412D01†^
	±12.0 VDC	±0.17 A	21 mA	407 mA	83%	JCA0412D02†^
18-36 VDC	3.3 VDC	1.22 A	21 mA	204 mA	82%	JCA0424S03†^
	5.0 VDC	0.80 A	34 mA	205 mA	80%	JCA0424S05†^
	12.0 VDC	0.34 A	13 mA	205 mA	82%	JCA0424S12†^
	15.0 VDC	0.28 A	13 mA	211 mA	83%	JCA0424S15†^
	±5.0 VDC	±0.40 A	11 mA	207 mA	81%	JCA0424D01†^
	±12.0 VDC	±0.17 A	16 mA	209 mA	83%	JCA0424D02†^
36-75 VDC	3.3 VDC	1.22 A	13 mA	104 mA	82%	JCA0448S03†^
	5.0 VDC	0.80 A	14 mA	104 mA	80%	JCA0448S05†^
	12.0 VDC	0.34 A	6 mA	103 mA	80%	JCA0448S12†^
	15.0 VDC	0.28 A	7 mA	108 mA	81%	JCA0448S15†^
	±5.0 VDC	±0.40 A	7 mA	108 mA	80%	JCA0448D01†^
	±12.0 VDC	±0.17 A	8 mA	107 mA	82%	JCA0448D02†^
	±15.0 VDC	±0.14 A	10 mA	109 mA	82%	JCA0448D03†^

Input Voltage ⁽¹⁾	Output Voltage	Output Current	Input Current ⁽³⁾		Efficiency	Model Number
			No Load	Full Load		
4.5-9.0 VDC	3.3 VDC	1.52 A	44 mA	1286 mA	82%	JCA0605S03†^
	5.0 VDC	1.00 A	66 mA	1208 mA	84%	JCA0605S05†^
	12.0 VDC	0.50 A	9 mA	1451 mA	84%	JCA0605S12†^
	15.0 VDC	0.40 A	10 mA	1419 mA	84%	JCA0605S15†^
	±5.0 VDC	±0.50 A	12 mA	1239 mA	81%	JCA0605D01†^
	±12.0 VDC	±0.25 A	34 mA	1431 mA	83%	JCA0605D02†^
9-18 VDC	3.3 VDC	1.52 A	38 mA	505 mA	82%	JCA0612S03†^
	5.0 VDC	1.00 A	46 mA	492 mA	82%	JCA0612S05†^
	12.0 VDC	0.50 A	18 mA	591 mA	84%	JCA0612S12†^
	15.0 VDC	0.40 A	22 mA	589 mA	85%	JCA0612S15†^
	±5.0 VDC	±0.50 A	15 mA	513 mA	82%	JCA0612D01†^
	±12.0 VDC	±0.25 A	21 mA	591 mA	84%	JCA0612D02†^
18-36 VDC	3.3 VDC	1.52 A	21 mA	255 mA	82%	JCA0624S03†^
	5.0 VDC	1.00 A	34 mA	252 mA	82%	JCA0624S05†^
	12.0 VDC	0.50 A	13 mA	297 mA	84%	JCA0624S12†^
	15.0 VDC	0.40 A	13 mA	297 mA	84%	JCA0624S15†^
	±5.0 VDC	±0.50 A	11 mA	257 mA	81%	JCA0624D01†^
	±12.0 VDC	±0.25 A	16 mA	299 mA	84%	JCA0624D02†^
36-75 VDC	3.3 VDC	1.52 A	13 mA	130 mA	82%	JCA0648S03†^
	5.0 VDC	1.00 A	14 mA	128 mA	81%	JCA0648S05†^
	12.0 VDC	0.50 A	6 mA	149 mA	84%	JCA0648S12†^
	15.0 VDC	0.40 A	7 mA	149 mA	84%	JCA0648S15†^
	±5.0 VDC	±0.50 A	7 mA	131 mA	80%	JCA0648D01†^
	±12.0 VDC	±0.25 A	8 mA	150 mA	83%	JCA0648D02†^
	±15.0 VDC	±0.20 A	10 mA	150 mA	83%	JCA0648D03†^

Notes

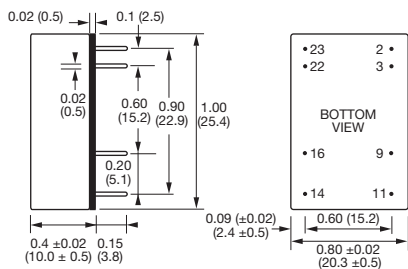
1. Nominal input voltage 5, 12, 24 or 48 VDC.
2. Input current is at nominal input voltage.

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

† Available from Farnell & element14. See pages 284-290.

^ Available from Newark. See pages 291-296.

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

1. All dimensions are in inches (mm)
2. Weight: 0.03 lbs (12 g)
3. Pin diameter tolerance: ±0.00079 (±0.02)
4. Pin pitch tolerance: ±0.01 (±0.25)
5. Case tolerance: ±0.02 (±0.5)

Input Filter

To meet level B conducted emissions.

