

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	<ul style="list-style-type: none"> • 5 V (4.5-9.0 VDC), 12 V (9-18 VDC) • 24 V (18-36 VDC), 48 V (36-75 VDC)
Input Current	<ul style="list-style-type: none"> • See table
Input Filter	<ul style="list-style-type: none"> • Pi network
Input Surge	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 80 mA for 5 V models • 30 mA for all other models

Output

Output Voltage	<ul style="list-style-type: none"> • See table
Initial Set Accuracy	<ul style="list-style-type: none"> • $\pm 1\%$ max
Start Up Delay	<ul style="list-style-type: none"> • 200 ms max
Start Up Rise Time	<ul style="list-style-type: none"> • 3.5 ms typical
Minimum Load	<ul style="list-style-type: none"> • No minimum load required
Line Regulation	<ul style="list-style-type: none"> • $\pm 0.3\%$
Load Regulation	<ul style="list-style-type: none"> • $\pm 1\%$
Cross Regulation	<ul style="list-style-type: none"> • $\pm 5\%$ on dual output models
Transient Response	<ul style="list-style-type: none"> • 4% max deviation, recovery to within 1% in $< 500\text{ }\mu\text{s}$ for a 25% load change at 1 A/μs
Ripple & Noise	<ul style="list-style-type: none"> • 50 mV pk-pk, 20 MHz bandwidth
Overcurrent Protection	<ul style="list-style-type: none"> • 150% typical, trip & restart (hiccup mode)
Short Circuit Protection	<ul style="list-style-type: none"> • Continuous with auto recovery
Overvoltage Protection	<ul style="list-style-type: none"> • 150% typical, Recycle input to reset
Temperature Coefficient	<ul style="list-style-type: none"> • $\pm 0.05\%/^{\circ}\text{C}$

General

Efficiency	<ul style="list-style-type: none"> • See table
Isolation	<ul style="list-style-type: none"> • 1500 VDC Input to Output, basic insulation • 500 VDC Input to Case • 500 VDC Output to Case
Switching Frequency	<ul style="list-style-type: none"> • 300 kHz typical
Power Density	<ul style="list-style-type: none"> • JCA04: 12.5 W/in³, JCA06: 18.8 W/in³
MTBF	<ul style="list-style-type: none"> • 1.0 Mhrs to MIL-HDBK-217F at 25 $^{\circ}\text{C}$, GB

Environmental

Operating Temperature	<ul style="list-style-type: none"> • $-40\text{ }^{\circ}\text{C}$ 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	<ul style="list-style-type: none"> • $+100\text{ }^{\circ}\text{C}$ max
Storage Temperature	<ul style="list-style-type: none"> • $-55\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$
Cooling	<ul style="list-style-type: none"> • Convection cooled
Operating Humidity	<ul style="list-style-type: none"> • Up to 95% RH, non-condensing

EMC & Safety

Emissions	<ul style="list-style-type: none"> • EN55022, level A conducted & radiated (level B with external components, see application note)
ESD Immunity	<ul style="list-style-type: none"> • EN61000-4-2, level 2 Perf Criteria A
Radiated Immunity	<ul style="list-style-type: none"> • EN61000-4-3 3 V/m Perf Criteria A
Conducted Immunity	<ul style="list-style-type: none"> • EN61000-4-6 3 V rms Perf Criteria A
Magnetic Fields	<ul style="list-style-type: none"> • EN61000-4-8, 10 A/m, Perf Criteria A
Safety Approvals	<ul style="list-style-type: none"> • EN62368-1 • UL60950-1, UL62368-1 • CSA C22.2 No. 60950-1 and 62368-1 • IEC60950-1, IEC62368-1

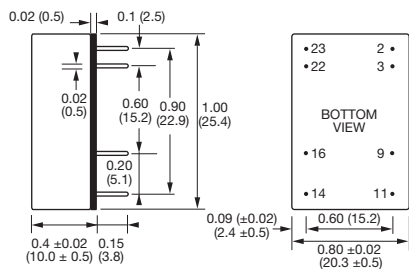
Input Voltage ⁽¹⁾	Output Voltage	Output Current	Input Current ⁽²⁾		Efficiency	Max. Capacitive Load	Model Number
			No Load	Full Load			
4.5-9.0 VDC	3.3 VDC	1.22 A	44 mA	1000 mA	80%	470 µF	JCA0405S03
	5.0 VDC	0.80 A	66 mA	955 mA	83%	1000 µF	JCA0405S05
	12.0 VDC	0.34 A	9 mA	975 mA	84%	300 µF	JCA0405S12
	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
	±15.0 VDC	±0.14 A	25 mA	998 mA	83%	150 µF	JCA0405D03
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
	±15.0 VDC	±0.14 A	25 mA	422 mA	83%	100 µF	JCA0412D03
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
	±15.0 VDC	±0.14 A	17 mA	213 mA	81%	150 µF	JCA0424D03
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
	±15.0 VDC	±0.14 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
	±15.0 VDC	±0.20 A	25 mA	1430 mA	83%	200 µF	JCA0605D03
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
	±15.0 VDC	±0.20 A	25 mA	597 mA	83%	100 µF	JCA0612D03
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
	±15.0 VDC	±0.20 A	17 mA	296 mA	84%	200 µF	JCA0624D03
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
	±15.0 VDC	±0.20 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.

