10 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, CB, & TUV Approval
- 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 Reflected Ripple Current	• 80 mA, 5 V input models, 30 mA all others 12 µH inductor, 5 Hz to 20 MHz
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

Output

Output Voltage	• See table
Initial Set Accuracy	• ±1% max
Start Up Delay	• 30 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 with one output at 5% load and other varied from 5% to 100%
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 and 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	• 31.25 W/in^3
MTBF	• >950 kHrs to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	• -40 °C to +100 °C output power derates from 100% load at +70 °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 (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
Magnetic Fields	• EN61000-4-8, 10 A/m, Perf Criteria A
Safety Approvals	• IEC60950-1, EN60950-1, UL60950-1, CSA C22.2 No. 60950-1-03, CE Mark LVD

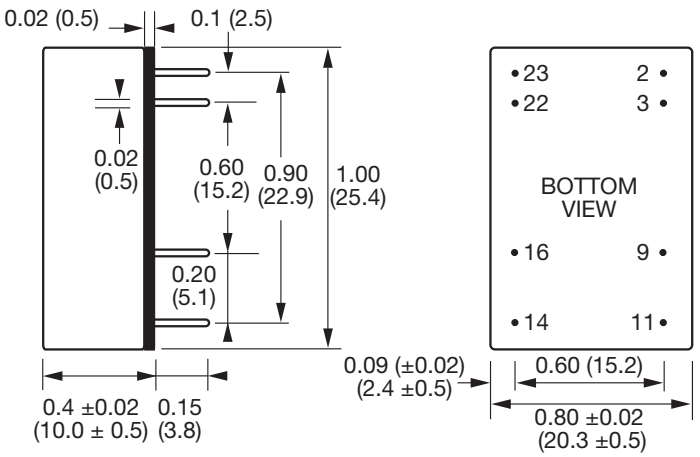
Models and Ratings

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	2.42 A	100 mA	1.905 A	82%	3300 µF	JCA1005S03
	5.0 VDC	1.60 A	84 mA	1.839 A	86%	2200 µF	JCA1005S05
	12.0 VDC	0.83 A	126 mA	2.324 A	85%	1000 µF	JCA1005S12
	15.0 VDC	0.66 A	120 mA	2.271 A	86%	940 µF	JCA1005S15
	±5.0 VDC	±0.80 A	129 mA	1.918 A	82%	1000 µF	JCA1005D01
	±12.0 VDC	±0.42 A	126 mA	2.388 A	84%	470 µF	JCA1005D02
	±15.0 VDC	±0.33 A	105 mA	2.297 A	85%	470 µF	JCA1005D03
9-18 VDC	3.3 VDC	2.42 A	52 mA	0.784 A	84%	3300 µF	JCA1012S03
	5.0 VDC	1.60 A	49 mA	0.745 A	89%	2200 µF	JCA1012S05
	12.0 VDC	0.83 A	42 mA	0.930 A	89%	1000 µF	JCA1012S12
	15.0 VDC	0.66 A	42 mA	0.916 A	89%	940 µF	JCA1012S15
	±5.0 VDC	±0.80 A	45 mA	0.778 A	85%	1000 µF	JCA1012D01
	±12.0 VDC	±0.42 A	44 mA	0.944 A	88%	470 µF	JCA1012D02
	±15.0 VDC	±0.33 A	44 mA	0.915 A	89%	470 µF	JCA1012D03
18-36 VDC	3.3 VDC	2.42 A	28 mA	0.388 A	85%	3300 µF	JCA1024S03
	5.0 VDC	1.60 A	27 mA	0.375 A	88%	2200 µF	JCA1024S05
	12.0 VDC	0.83 A	19 mA	0.461 A	89%	1000 µF	JCA1024S12
	15.0 VDC	0.66 A	18 mA	0.455 A	90%	940 µF	JCA1024S15
	±5.0 VDC	±0.80 A	16 mA	0.387 A	85%	1000 µF	JCA1024D01
	±12.0 VDC	±0.42 A	22 mA	0.469 A	89%	470 µF	JCA1024D02
	±15.0 VDC	±0.33 A	25 mA	0.455 A	90%	470 µF	JCA1024D03
36-75 VDC	3.3 VDC	2.42 A	13 mA	0.199 A	82%	3300 µF	JCA1048S03
	5.0 VDC	1.60 A	11 mA	0.186 A	89%	2200 µF	JCA1048S05
	12.0 VDC	0.83 A	7 mA	0.231 A	89%	1000 µF	JCA1048S12
	15.0 VDC	0.66 A	9 mA	0.229 A	89%	940 µF	JCA1048S15
	±5.0 VDC	±0.80 A	5 mA	0.194 A	85%	1000 µF	JCA1048D01
	±12.0 VDC	±0.42 A	9 mA	0.236 A	89%	470 µF	JCA1048D02
	±15.0 VDC	±0.33 A	10 mA	0.229 A	89%	470 µF	JCA1048D03

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.

Mechanical Details



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 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)

Application Note

Input Filter

To meet level B conducted emissions.

