



THE DATASHEET OF JCA1005D02

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	• $\pm 1\%$ max
Start Up Delay	• 30 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 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	• $\pm 0.05\%/^{\circ}\text{C}$

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	• 31.25 W/in³
MTBF	• >950 kHrs to MIL-HDBK-217F at 25 °C, GB
Case	• Five sided metal case with plastic base, silicone potted UL94V-0
Water Wash	• Use de-ionised water and dry thoroughly
Solder Profile	• Waveflow 260 °C max, 0.05" (1.5 mm) from case, 10 seconds max.
Pin Material	• Brass with matte copper and tin plating

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	• EN55032, 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	• IEC62368-1, EN62368-1, UL62368-1, CE & UKCA meets all applicable directives & legislation

Models and Ratings

JCA10 **XP**

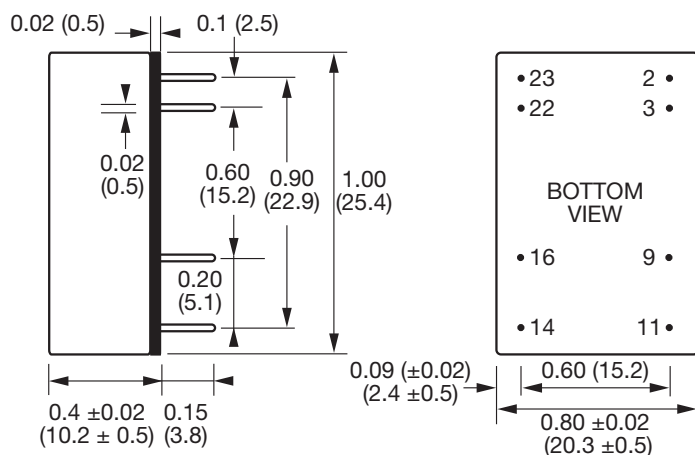
Input Voltage ⁽¹⁾	Output Voltage	Output Current	Input Current ⁽²⁾		Efficiency	Max. Capacitive Load	Model Number
			No Load	Full Load			
4.5-9.0 VDC	3.3 VDC	2.42 A	100 mA	1.905 A	82%	3300 μ F	JCA1005S03
	5.0 VDC	1.60 A	84 mA	1.839 A	86%	2200 μ F	JCA1005S05
	12.0 VDC	0.83 A	126 mA	2.324 A	85%	1000 μ F	JCA1005S12
	15.0 VDC	0.66 A	120 mA	2.271 A	86%	940 μ F	JCA1005S15
	± 5.0 VDC	± 0.80 A	129 mA	1.918 A	82%	1000 μ F	JCA1005D01
	± 12.0 VDC	± 0.42 A	126 mA	2.388 A	84%	470 μ F	JCA1005D02
9-18 VDC	± 15.0 VDC	± 0.33 A	105 mA	2.297 A	85%	470 μ F	JCA1005D03
	3.3 VDC	2.42 A	52 mA	0.784 A	84%	3300 μ F	JCA1012S03
	5.0 VDC	1.60 A	49 mA	0.745 A	89%	2200 μ F	JCA1012S05
	12.0 VDC	0.83 A	42 mA	0.930 A	89%	1000 μ F	JCA1012S12
	15.0 VDC	0.66 A	42 mA	0.916 A	89%	940 μ F	JCA1012S15
	± 5.0 VDC	± 0.80 A	45 mA	0.778 A	85%	1000 μ F	JCA1012D01
18-36 VDC	± 12.0 VDC	± 0.42 A	44 mA	0.944 A	88%	470 μ F	JCA1012D02
	± 15.0 VDC	± 0.33 A	44 mA	0.915 A	89%	470 μ F	JCA1012D03
	3.3 VDC	2.42 A	28 mA	0.388 A	85%	3300 μ F	JCA1024S03
	5.0 VDC	1.60 A	27 mA	0.375 A	88%	2200 μ F	JCA1024S05
	12.0 VDC	0.83 A	19 mA	0.461 A	89%	1000 μ F	JCA1024S12
	15.0 VDC	0.66 A	18 mA	0.455 A	90%	940 μ F	JCA1024S15
36-75 VDC	± 5.0 VDC	± 0.80 A	16 mA	0.387 A	85%	1000 μ F	JCA1024D01
	± 12.0 VDC	± 0.42 A	22 mA	0.469 A	89%	470 μ F	JCA1024D02
	± 15.0 VDC	± 0.33 A	25 mA	0.455 A	90%	470 μ F	JCA1024D03
	3.3 VDC	2.42 A	13 mA	0.199 A	82%	3300 μ F	JCA1048S03
	5.0 VDC	1.60 A	11 mA	0.186 A	89%	2200 μ F	JCA1048S05
	12.0 VDC	0.83 A	7 mA	0.231 A	89%	1000 μ F	JCA1048S12
	15.0 VDC	0.66 A	9 mA	0.229 A	89%	940 μ F	JCA1048S15
	± 5.0 VDC	± 0.80 A	5 mA	0.194 A	85%	1000 μ F	JCA1048D01
	± 12.0 VDC	± 0.42 A	9 mA	0.236 A	89%	470 μ F	JCA1048D02
	± 15.0 VDC	± 0.33 A	10 mA	0.229 A	89%	470 μ F	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



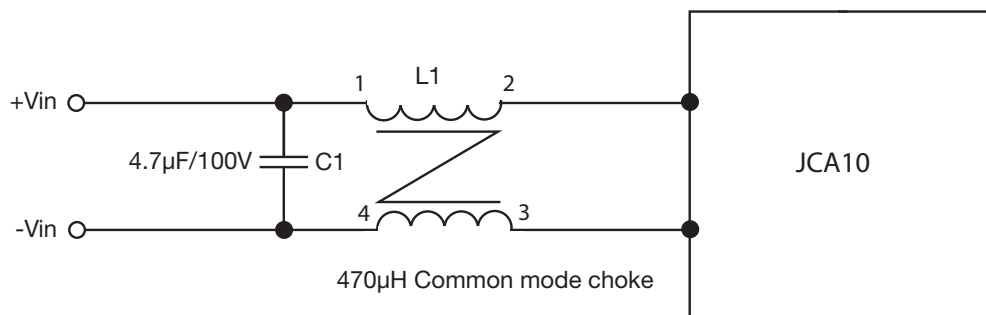
PIN CONNECTIONS		
Pin	Single Output	Dual Output
2	-Vin	-Vin
3	-Vin	-Vin
9	No pin	Common
11	N/C	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

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.



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