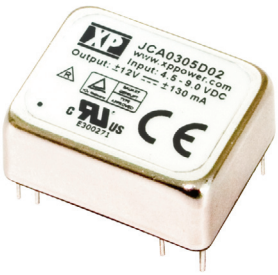
THE DATASHEET OF

JCA0312S03

2/3 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 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
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	• JCA02: 6.25 W/in^3, JCA03: 9.38 W/in^3
MTBF	• >2 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	• 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	• EN62368-1, UL62368-1, IEC62368-1 CE & UKCA meets all applicable directives & legislation

Models and Ratings

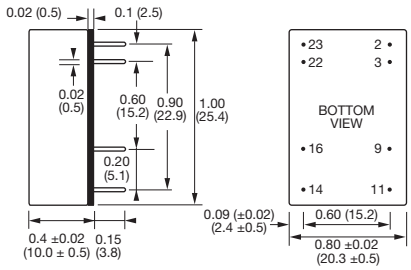
Input Voltage[1]	Output Voltage	Output Current	Input Current[2]		Efficiency	Model Number
			No Load	Full Load		
4.5-9.0 VDC	3.3 VDC	0.600 A	28 mA	560 mA	69%	JCA0205S03
	5.0 VDC	0.400 A	10 mA	535 mA	73%	JCA0205S05
	12.0 VDC	0.170 A	15 mA	526 mA	74%	JCA0205S12
	15.0 VDC	0.140 A	26 mA	559 mA	74%	JCA0205S15
	±5.0 VDC	±0.200 A	15 mA	502 mA	74%	JCA0205D01
	±12.0 VDC	±0.085 A	19 mA	537 mA	73%	JCA0205D02
	±15.0 VDC	±0.070 A	25 mA	560 mA	70%	JCA0205D03
9-18 VDC	3.3 VDC	0.600 A	8 mA	225 mA	72%	JCA0212S03
	5.0 VDC	0.400 A	5 mA	224 mA	74%	JCA0212S05
	12.0 VDC	0.170 A	5 mA	223 mA	74%	JCA0212S12
	15.0 VDC	0.140 A	7 mA	227 mA	74%	JCA0212S15
	±5.0 VDC	±0.200 A	10 mA	219 mA	74%	JCA0212D01
	±12.0 VDC	±0.085 A	9 mA	223 mA	74%	JCA0212D02
	±15.0 VDC	±0.070 A	11 mA	232 mA	73%	JCA0212D03
18-36 VDC	3.3 VDC	0.600 A	3 mA	112 mA	73%	JCA0224S03
	5.0 VDC	0.400 A	3 mA	107 mA	75%	JCA0224S05
	12.0 VDC	0.170 A	4 mA	109 mA	75%	JCA0224S12
	15.0 VDC	0.140 A	4 mA	111 mA	75%	JCA0224S15
	±5.0 VDC	±0.200 A	3 mA	107 mA	76%	JCA0224D01
	±12.0 VDC	±0.085 A	5 mA	108 mA	76%	JCA0224D02
	±15.0 VDC	±0.070 A	6 mA	115 mA	73%	JCA0224D03
36-75 VDC	3.3 VDC	0.600 A	3 mA	62 mA	71%	JCA0248S03
	5.0 VDC	0.400 A	5 mA	58 mA	70%	JCA0248S05
	12.0 VDC	0.170 A	3 mA	58 mA	70%	JCA0248S12
	15.0 VDC	0.140 A	3 mA	59 mA	72%	JCA0248S15
	±5.0 VDC	±0.200 A	2 mA	56 mA	73%	JCA0248D01
	±12.0 VDC	±0.085 A	3 mA	57 mA	73%	JCA0248D02
	±15.0 VDC	±0.070 A	3 mA	60 mA	70%	JCA0248D03

Input Voltage[1]	Output Voltage	Output Current	Input Current[2]		Efficiency	Model Number
			No Load	Full Load		
4.5-9.0 VDC	3.3 VDC	0.910 A	28 mA	873 mA	68%	JCA0305S03
	5.0 VDC	0.600 A	10 mA	835 mA	74%	JCA0305S05
	12.0 VDC	0.260 A	15 mA	805 mA	75%	JCA0305S12
	15.0 VDC	0.200 A	26 mA	804 mA	74%	JCA0305S15
	±5.0 VDC	±0.300 A	15 mA	778 mA	74%	JCA0305D01
	±12.0 VDC	±0.130 A	19 mA	793 mA	74%	JCA0305D02
	±15.0 VDC	±0.100 A	25 mA	820 mA	73%	JCA0305D03
9-18 VDC	3.3 VDC	0.910 A	8 mA	333 mA	74%	JCA0312S03
	5.0 VDC	0.600 A	5 mA	324 mA	75%	JCA0312S05
	12.0 VDC	0.260 A	5 mA	315 mA	78%	JCA0312S12
	15.0 VDC	0.200 A	7 mA	322 mA	77%	JCA0312S15
	±5.0 VDC	±0.300 A	10 mA	325 mA	75%	JCA0312D01
	±12.0 VDC	±0.130 A	9 mA	313 mA	75%	JCA0312D02
	±15.0 VDC	±0.100 A	11 mA	322 mA	73%	JCA0312D03
18-36 VDC	3.3 VDC	0.910 A	3 mA	165 mA	74%	JCA0324S03
	5.0 VDC	0.600 A	3 mA	157 mA	77%	JCA0324S05
	12.0 VDC	0.260 A	4 mA	154 mA	77%	JCA0324S12
	15.0 VDC	0.200 A	4 mA	157 mA	77%	JCA0324S15
	±5.0 VDC	±0.300 A	3 mA	156 mA	77%	JCA0324D01
	±12.0 VDC	±0.130 A	5 mA	154 mA	77%	JCA0324D02
	±15.0 VDC	±0.100 A	6 mA	160 mA	75%	JCA0324D03
36-75 VDC	3.3 VDC	0.910 A	3 mA	82 mA	73%	JCA0348S03
	5.0 VDC	0.600 A	5 mA	82 mA	74%	JCA0348S05
	12.0 VDC	0.260 A	6 mA	79 mA	75%	JCA0348S12
	15.0 VDC	0.200 A	6 mA	81 mA	75%	JCA0348S15
	±5.0 VDC	±0.300 A	2 mA	79 mA	76%	JCA0348D01
	±12.0 VDC	±0.130 A	3 mA	78 mA	76%	JCA0348D02
	±15.0 VDC	±0.100 A	3 mA	82 mA	74%	JCA0348D03

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 and Application Note

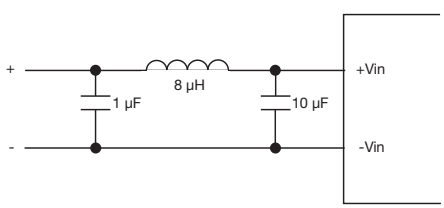


PIN CONNECTIONS		
Pin	Single Output	Dual Output
2	-Vin	-Vin
3	-Vin	-Vin
9	No pin	Common
11	N/C	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

1. All dimensions 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.



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