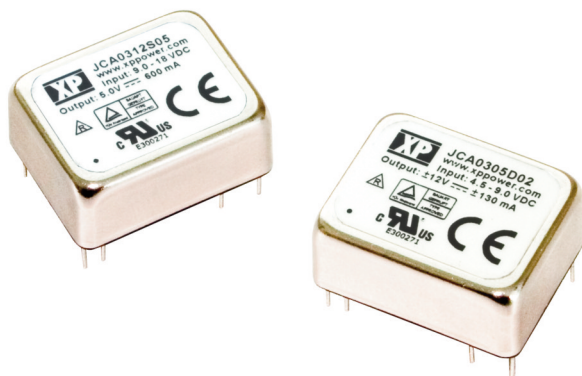


## JCA Series



- 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"> <li>• 5 V (4.5-9.0 VDC)</li> <li>• 12 V (9-18 VDC)</li> <li>• 24 V (18-36 VDC)</li> <li>• 48 V (36-75 VDC)</li> <li>• Turn On at <math>&gt;90\text{-}95\%</math> of rated input</li> <li>• Turn Off at <math>&lt;80\%</math> of rated input</li> </ul>
Input Current	<ul style="list-style-type: none"> <li>• See table</li> </ul>
Input Filter	<ul style="list-style-type: none"> <li>• Pi network</li> </ul>
Input Reflected	<ul style="list-style-type: none"> <li>• 80 mA, 5 V input models, 30 mA all others</li> </ul>
Ripple Current	<ul style="list-style-type: none"> <li>• 12 <math>\mu\text{H}</math> inductor, 5 Hz to 20 MHz</li> </ul>
Input Surge	<ul style="list-style-type: none"> <li>• 5 V models 10 V for 1 s max,</li> <li>• 12 V models 25 V for 1 s max,</li> <li>• 24 V models 50 V for 1 s max,</li> <li>• 48 V models 100 V for 1 s max</li> </ul>

## Output

Output Voltage	<ul style="list-style-type: none"> <li>• See table</li> </ul>
Initial Set Accuracy	<ul style="list-style-type: none"> <li>• <math>\pm 1\%</math> max</li> </ul>
Start Up Delay	<ul style="list-style-type: none"> <li>• 30 ms max</li> </ul>
Start Up Rise Time	<ul style="list-style-type: none"> <li>• 3.5 ms typical</li> </ul>
Minimum Load	<ul style="list-style-type: none"> <li>• No minimum load required</li> </ul>
Line Regulation	<ul style="list-style-type: none"> <li>• <math>\pm 0.3\%</math></li> </ul>
Load Regulation	<ul style="list-style-type: none"> <li>• <math>\pm 1\%</math></li> </ul>
Cross Regulation	<ul style="list-style-type: none"> <li>• <math>\pm 5\%</math> on dual output models</li> </ul>
Transient Response	<ul style="list-style-type: none"> <li>• 4% max deviation, recovery to within 1% in <math>&lt;500\text{ }\mu\text{s}</math> for a 25% load change at 1 A/<math>\mu\text{s}</math></li> </ul>
Ripple & Noise	<ul style="list-style-type: none"> <li>• 50 mV pk-pk, 20 MHz bandwidth</li> </ul>
Overcurrent Protection	<ul style="list-style-type: none"> <li>• 150% typical, trip and restart (hiccup mode)</li> </ul>
Short Circuit Protection	<ul style="list-style-type: none"> <li>• Continuous with auto recovery</li> </ul>
Overvoltage Protection	<ul style="list-style-type: none"> <li>• 150% typical, Recycle input to reset</li> </ul>
Temperature Coefficient	<ul style="list-style-type: none"> <li>• <math>\pm 0.05\%/^{\circ}\text{C}</math></li> </ul>

## General

Efficiency	<ul style="list-style-type: none"> <li>• See table</li> </ul>
Isolation	<ul style="list-style-type: none"> <li>• 1500 VDC Input to Output, basic insulation</li> <li>• 500 VDC Input to Case</li> <li>• 500 VDC Output to Case</li> </ul>
Switching Frequency	<ul style="list-style-type: none"> <li>• 300 kHz typical</li> </ul>
Power Density	<ul style="list-style-type: none"> <li>• JCA02: 6.25 W/in<sup>3</sup>, JCA03: 9.38 W/in<sup>3</sup></li> </ul>
MTBF	<ul style="list-style-type: none"> <li>• <math>&gt;2\text{ Mhrs}</math> to MIL-HDBK-217F at <math>25\text{ }^{\circ}\text{C}</math>, GB</li> </ul>

## Environmental

Operating Temperature	<ul style="list-style-type: none"> <li>• <math>-40\text{ }^{\circ}\text{C}</math> to <math>+100\text{ }^{\circ}\text{C}</math> output power derates from 100% load at <math>+75\text{ }^{\circ}\text{C}</math> linearly to 0% load at <math>+100\text{ }^{\circ}\text{C}</math></li> </ul>
Case Temperature	<ul style="list-style-type: none"> <li>• <math>+100\text{ }^{\circ}\text{C}</math> max</li> </ul>
Storage Temperature	<ul style="list-style-type: none"> <li>• <math>-55\text{ }^{\circ}\text{C}</math> to <math>+125\text{ }^{\circ}\text{C}</math></li> </ul>
Cooling	<ul style="list-style-type: none"> <li>• Convection cooled</li> </ul>
Operating Humidity	<ul style="list-style-type: none"> <li>• Up to 95% RH, non-condensing</li> </ul>

## EMC &amp; Safety

Emissions	<ul style="list-style-type: none"> <li>• EN55022, level A conducted (level B with external components, see application note), level B radiated</li> </ul>
ESD Immunity	<ul style="list-style-type: none"> <li>• EN61000-4-2, level 2 Perf Criteria A</li> </ul>
Radiated Immunity	<ul style="list-style-type: none"> <li>• EN61000-4-3, 3 V/m Perf Criteria A</li> </ul>
Conducted Immunity	<ul style="list-style-type: none"> <li>• EN61000-4-6, 3 V rms Perf Criteria A</li> </ul>
Magnetic Fields	<ul style="list-style-type: none"> <li>• EN61000-4-8, 10 A/m, Perf Criteria A</li> </ul>
Safety Approvals	<ul style="list-style-type: none"> <li>• EN60950-1, UL60950-1, CSA C22.2 No. 60950-1-03, CE Mark LVD</li> </ul>

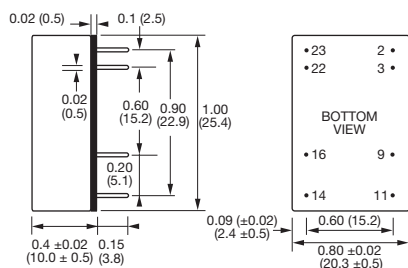
Input Voltage <sup>(1)</sup>	Output Voltage	Output Current	Input Current <sup>(2)</sup>		Efficiency	Model Number
			No Load	Full Load		
4.5-9.0 VDC	3.3 VDC	0.600 A	28 mA	560 mA	69%	JCA0205S03
	5.0 VDC	0.400 A	10 mA	535 mA	73%	JCA0205S05
	12.0 VDC	0.170 A	15 mA	526 mA	74%	JCA0205S12
	15.0 VDC	0.140 A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

Input Voltage <sup>(1)</sup>	Output Voltage	Output Current	Input Current <sup>(2)</sup>		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
9-18 VDC	3.3 VDC	0.910 A	25 mA	820 mA	73%	JCA0305D03
	5.0 VDC	0.600 A	8 mA	333 mA	74%	JCA0312S03
	12.0 VDC	0.260 A	5 mA	324 mA	75%	JCA0312S05
	15.0 VDC	0.200 A	5 mA	315 mA	78%	JCA0312S12
	±5.0 VDC	±0.300 A	7 mA	322 mA	77%	JCA0312S15
	±12.0 VDC	±0.130 A	10 mA	325 mA	75%	JCA0312D01
18-36 VDC	3.3 VDC	0.910 A	9 mA	313 mA	75%	JCA0312D02
	5.0 VDC	0.600 A	11 mA	322 mA	73%	JCA0312D03
	12.0 VDC	0.260 A	3 mA	165 mA	74%	JCA0324S03
	15.0 VDC	0.200 A	3 mA	157 mA	77%	JCA0324S05
	±5.0 VDC	±0.300 A	4 mA	154 mA	77%	JCA0324S12
	±12.0 VDC	±0.130 A	4 mA	157 mA	77%	JCA0324S15
36-75 VDC	3.3 VDC	0.910 A	3 mA	156 mA	77%	JCA0324D01
	5.0 VDC	0.600 A	5 mA	154 mA	77%	JCA0324D02
	12.0 VDC	0.260 A	6 mA	160 mA	75%	JCA0324D03
	15.0 VDC	0.200 A	6 mA	82 mA	73%	JCA0348S03
	±5.0 VDC	±0.300 A	5 mA	82 mA	74%	JCA0348S05
	±12.0 VDC	±0.130 A	6 mA	79 mA	75%	JCA0348S12
36-75 VDC	3.3 VDC	0.910 A	6 mA	81 mA	75%	JCA0348S15
	5.0 VDC	0.600 A	2 mA	79 mA	76%	JCA0348D01
	12.0 VDC	0.260 A	3 mA	78 mA	76%	JCA0348D02
	15.0 VDC	0.200 A	3 mA	82 mA	74%	JCA0348D03
	±5.0 VDC	±0.300 A	3 mA			
	±12.0 VDC	±0.100 A	3 mA			

**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 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.

