



**THE DATASHEET OF  
JCA0612S03**



# 4/6 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	<ul style="list-style-type: none"> <li>• 5 V (4.5-9.0 VDC), 12 V (9-18 VDC)</li> <li>• 24 V (18-36 VDC), 48 V (36-75 VDC)</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 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>
Input Reflected Ripple	<ul style="list-style-type: none"> <li>• 80 mA for 5 V models</li> <li>• 30 mA for all other models</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>• ±1% max</li> </ul>
Start Up Delay	<ul style="list-style-type: none"> <li>• 200 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>• ±0.3%</li> </ul>
Load Regulation	<ul style="list-style-type: none"> <li>• ±1%</li> </ul>
Cross Regulation	<ul style="list-style-type: none"> <li>• ±5% on dual output models</li> </ul>
Transient Response	<ul style="list-style-type: none"> <li>• 4% max deviation, recovery to within 1% in &lt;500 μs for a 25% load change at 1 A/μs</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 &amp; 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>• ±0.05%/°C</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>• JCA04: 12.5 W/in<sup>3</sup>, JCA06: 18.8 W/in<sup>3</sup></li> </ul>
MTBF	<ul style="list-style-type: none"> <li>• 1.0 Mhrs to MIL-HDBK-217F at 25 °C, GB</li> </ul>

#### Environmental

Operating Temperature	<ul style="list-style-type: none"> <li>• -40 °C to +100 °C output power derates from 100% load at +75 °C linearly to 0% load at +100 °C</li> </ul>
Case Temperature	<ul style="list-style-type: none"> <li>• +100 °C max</li> </ul>
Storage Temperature	<ul style="list-style-type: none"> <li>• -55 °C to +125 °C</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 & Safety

Emissions	<ul style="list-style-type: none"> <li>• EN55032, level A conducted &amp; radiated (level B with external components, see application note)</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>• EN62368-1</li> <li>• UL60950-1, UL62368-1</li> <li>• CSA C22.2 No. 60950-1 and 62368-1</li> <li>• IEC60950-1, IEC62368-1, CE &amp; UKCA</li> <li>• meets all applicable directives &amp; legislation</li> </ul>

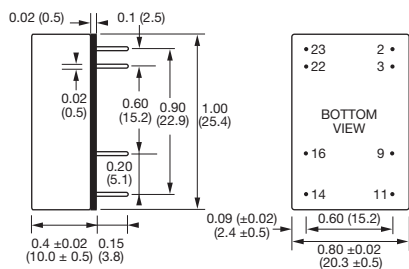
Input Voltage <sup>(1)</sup>	Output Voltage	Output Current	Input Current <sup>(2)</sup>		Efficiency	Max. Capacitive Load	Model Number
			No Load	Full Load			
4.5-9.0 VDC	3.3 VDC	1.22 A	44 mA	1000 mA	80%	470 µF	JCA0405S03
	5.0 VDC	0.80 A	66 mA	955 mA	83%	1000 µF	JCA0405S05
	12.0 VDC	0.34 A	9 mA	975 mA	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 <sup>(1)</sup>	Output Voltage	Output Current	Input Current <sup>(2)</sup>		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**

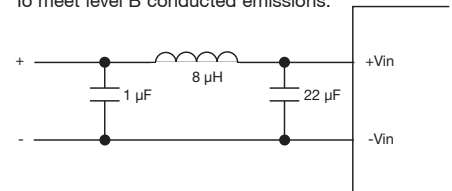


PIN CONNECTIONS		
Pin	Single Output	Dual Output
2	-Vin	-Vin
3	-Vin	-Vin
9	No pin	Common
11	N/C	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

- 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.



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