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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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## JCK Series



- 2:1 Input Range
- Very High Power Density
- Single and Dual Outputs
- High Efficiency – Up to 92%
- Remote On/Off
- 1600 VDC Isolation
- 3 Year Warranty

## Specification

## Input

Input Voltage Range	<ul style="list-style-type: none"> <li>• 12 V (9-18 VDC), 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 Reflected Ripple Current	<ul style="list-style-type: none"> <li>• 20 mA pk-pk through 12 <math>\mu</math>H inductor, 5 Hz to 20 MHz</li> </ul>
Undervoltage Lockout	<ul style="list-style-type: none"> <li>• 12 V models: ON 8.6 V, OFF 7.9 V typical</li> <li>• 24 V models: ON 17.8 V, OFF 16 V typical</li> <li>• 48 V models: ON 33.5 V, OFF 30.5 V typical</li> </ul>
Input Surge	<ul style="list-style-type: none"> <li>• 12 V models 25 VDC for 1000 ms</li> <li>• 24 V models 50 VDC for 1000 ms</li> <li>• 48 V models 100 VDC for 1000 ms</li> </ul>

## Output

Output Voltage	<ul style="list-style-type: none"> <li>• See table</li> </ul>
Output Voltage Trim	<ul style="list-style-type: none"> <li>• <math>\pm 10\%</math> on single outputs models only, contact sales for details</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 0.5\%</math> max</li> </ul>
Load Regulation	<ul style="list-style-type: none"> <li>• Single output models: <math>\pm 0.5\%</math> max</li> <li>• Dual output models: <math>\pm 1\%</math> max balanced outputs</li> </ul>
Cross Regulation	<ul style="list-style-type: none"> <li>• <math>\pm 5\%</math> (see note 2)</li> </ul>
Setpoint Accuracy	<ul style="list-style-type: none"> <li>• <math>\pm 1\%</math></li> </ul>
Start Up Time	<ul style="list-style-type: none"> <li>• 30 ms typical</li> </ul>
Ripple & Noise	<ul style="list-style-type: none"> <li>• 100 mV for 3V3 +5 V models, 150 mV for other models (see note 3)</li> </ul>
Transient Response	<ul style="list-style-type: none"> <li>• 3% max deviation, recovery to within 1% in <math>&lt; 250 \mu</math>s for a 25% load change</li> </ul>
Temperature Coefficient	<ul style="list-style-type: none"> <li>• 0.02%/<math>^{\circ}</math>C</li> </ul>
Overvoltage Protection	<ul style="list-style-type: none"> <li>• 3.3 V models: 3.9 V typical</li> <li>• 5 V models: 6.2 V typical</li> <li>• 12 V models: 15 V typical</li> <li>• 15 V models: 18 V typical</li> <li>• <math>\pm 12</math> V models: <math>\pm 15</math> V typical</li> <li>• <math>\pm 15</math> V models: <math>\pm 18</math> V typical</li> </ul>
Overload Protection	<ul style="list-style-type: none"> <li>• 115-130% of output current</li> </ul>
Short Circuit Protection	<ul style="list-style-type: none"> <li>• Trip &amp; restart (Hiccup mode), auto recovery</li> </ul>
Remote On/Off	<ul style="list-style-type: none"> <li>• On = Logic High (<math>&gt; 3.0</math>) or Open</li> <li>• Off = Logic Low (<math>&lt; 1.2</math> V) or short pin 2 to 3</li> </ul>

## General

Efficiency	<ul style="list-style-type: none"> <li>• See table</li> </ul>
Isolation	<ul style="list-style-type: none"> <li>• 1600 VDC Input to Output</li> <li>• 1600 VDC Input to Case</li> <li>• 1600 VDC Output to Case</li> </ul>
Isolation Capacitance	<ul style="list-style-type: none"> <li>• 1000 pF typical</li> </ul>
Switching Frequency	<ul style="list-style-type: none"> <li>• 270 kHz typical</li> </ul>
Power Density	<ul style="list-style-type: none"> <li>• 50 W/in<sup>3</sup></li> </ul>
MTBF	<ul style="list-style-type: none"> <li>• 330 kHrs min to MIL-HDBK-217F at 25 <math>^{\circ}</math>C, GB</li> </ul>

## Environmental

Operating Temperature	<ul style="list-style-type: none"> <li>• -40 <math>^{\circ}</math>C to +70 <math>^{\circ}</math>C, derate from 100% load at 55 <math>^{\circ}</math>C to 60% load at 70 <math>^{\circ}</math>C</li> </ul>
Case Temperature	<ul style="list-style-type: none"> <li>• +105 <math>^{\circ}</math>C max</li> </ul>
Cooling	<ul style="list-style-type: none"> <li>• Convection-cooled</li> </ul>
Operating Humidity	<ul style="list-style-type: none"> <li>• 5-95% RH, non-condensing</li> </ul>
Storage Temperature	<ul style="list-style-type: none"> <li>• -40 <math>^{\circ}</math>C to +125 <math>^{\circ}</math>C</li> </ul>

## EMC

Emissions	<ul style="list-style-type: none"> <li>• EN55022 class B conducted &amp; radiated with external components, see application note</li> </ul>
ESD Immunity	<ul style="list-style-type: none"> <li>• EN61000-4-2, 4 kV contact discharge, Perf Criteria B</li> </ul>
Radiated Immunity	<ul style="list-style-type: none"> <li>• EN61000-4-3, 3 V/m, Perf Criteria A</li> </ul>
EFT/Burst	<ul style="list-style-type: none"> <li>• EN61000-4-4, level 1, Perf Criteria A*</li> </ul>
Surge	<ul style="list-style-type: none"> <li>• EN61000-4-5, level 1, Perf Criteria A</li> </ul>
Conducted Immunity	<ul style="list-style-type: none"> <li>• EN61000-4-6, 3 Vrms, Perf Criteria A</li> </ul>
Magnetic Field	<ul style="list-style-type: none"> <li>• EN61000-4-8, 1 A/m, Perf Criteria A</li> </ul>

\*External input capacitor required, 220  $\mu$ F/100 V.

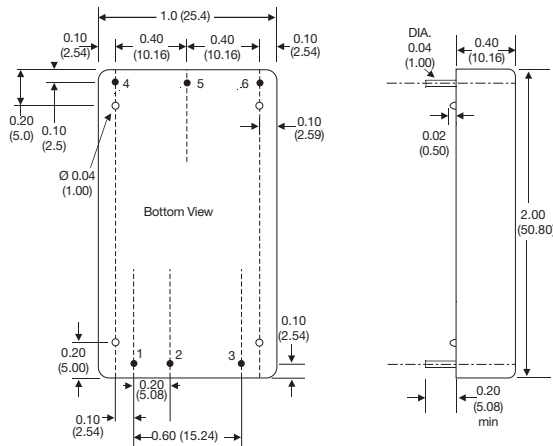
**Models and Ratings**

Input Voltage	Output Voltage	Output Current	Input Current <sup>(1)</sup>		Maximum Capacitive Load	Efficiency	Model Number
			No Load	Full Load			
9-18 VDC	3.3 V	8.00 A	100 mA	2444 mA	21000 µF	90%	JCK4012S3V3
	5.0 V	8.00 A	150 mA	3663 mA	13000 µF	91%	JCK4012S05
	12.0 V	3.33 A	40 mA	3663 mA	2000 µF	91%	JCK4012S12
	15.0 V	2.67 A	50 mA	3663 mA	1500 µF	91%	JCK4012S15
	±12.0 V	±1.67 A	30 mA	3663 mA	±1200 µF	91%	JCK4012D12
18-36 VDC	3.3 V	8.00 A	60 mA	1208 mA	21000 µF	91%	JCK4024S3V3
	5.0 V	8.00 A	80 mA	1811 mA	13000 µF	92%	JCK4024S05
	12.0 V	3.33 A	30 mA	1831 mA	2000 µF	91%	JCK4024S12
	15.0 V	2.67 A	40 mA	1811 mA	1500 µF	92%	JCK4024S15
	±12.0 V	±1.67 A	50 mA	1831 mA	±1200 µF	91%	JCK4024D12
36-75 VDC	3.3 V	8.00 A	40 mA	604 mA	21000 µF	91%	JCK4048S3V3
	5.0 V	8.00 A	60 mA	905 mA	13000 µF	92%	JCK4048S05
	12.0 V	3.33 A	20 mA	915 mA	2000 µF	91%	JCK4048S12
	15.0 V	2.67 A	20 mA	905 mA	1500 µF	92%	JCK4048S15
	±12.0 V	±1.67 A	30 mA	906 mA	±1200 µF	92%	JCK4048D12
	±15.0 V	±1.33 A	40 mA	906 mA	±750 µF	92%	JCK4048D15

**Notes**

1. Input current specified at nominal input.
2. Cross regulation for duals is ±5% when one output is at 100% and the other is varied between 25% and 100%.
3. Measured with 1 µF ceramic capacitor in parallel with a 10 µF electrolytic across output rails.

**Mechanical Details**



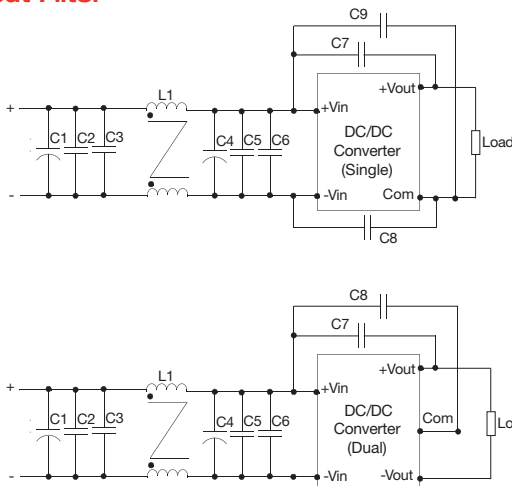
PIN CONNECTIONS		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	Remote On/Off	Remote On/Off
4	+Vout	+Vout
5	Com	Com
6	Trim	-Vout

**Notes**

1. All dimensions are in inches (mm).
2. Weight: 0.07 lbs (30 g) approx
3. Pin diameter: 0.04 ±0.002 (1.0 ±0.05)
4. Pin pitch tolerance: ±0.014 (±0.35)
5. Case tolerance: ±0.02 (±0.5)

**Application Notes**

**Input Filter**



JCK40 Single	C1	L1	C2/C3/C5/C6	C4
12 V	220 µF, 100 V	Common Mode Choke 68 µH	6.8 µF, 50 V	330 µF, 100 V
24 V			4.7 µF, 50 V	220 µF, 100 V
48 V			1.5 µF, 1000 V	220 µF, 100 V
JCK40 Dual	C1	L1	C2/C3/C5/C6	C4
12 V	220 µF, 100 V	Common Mode Choke 68 µH	6.8 µF, 50 V	330 µF, 100 V
24 V			4.7 µF, 50 V	220 µF, 100 V
48 V			1.5 µF, 1000 V	220 µF, 100 V

JCK40 Single	C7	C8	C9
12 V			1000 pF, 2 kV
24 V	1000 pF, 2 kV	1000 pF, 2 kV	
48 V	1000 pF, 2 kV	1000 pF, 2 kV	
JCK40 Dual	C7	C8	
12 V	1000 pF, 2 kV	1000 pF, 2 kV	
24 V	1000 pF, 2 kV	1000 pF, 2 kV	
48 V	1000 pF, 2 kV	1000 pF, 2 kV	

**External Output Trim**

