

## JCP Series



- 2:1 Input Range
- Single, Dual & Triple Outputs
- -40 °C to +100 °C Operating Temperature
- High Efficiency up to 92%
- Six-sided Metal Case
- Fixed 350 kHz Switching Frequency
- Continuous Short Circuit Protection

## Specification

## Input

Input Voltage Range	<ul style="list-style-type: none"> <li>• 12 VDC (9-18 VDC)</li> <li>• 24 VDC (18-36 VDC)</li> <li>• 48 VDC (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>
Undervoltage Lockout	<ul style="list-style-type: none"> <li>• Turn on &gt;71% nominal input</li> <li>• Turn off &lt;67% nominal input</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>• ±10%</li> </ul>
Minimum Load	<ul style="list-style-type: none"> <li>• See table</li> </ul>
Line Regulation	<ul style="list-style-type: none"> <li>• ±0.5% max for single &amp; dual outputs,</li> <li>• ±1.0% max for V1 of triple outputs,</li> <li>• ±5.0% for V2 &amp; V3</li> </ul>
Load Regulation	<ul style="list-style-type: none"> <li>• ±0.5% max single &amp; dual outputs,</li> <li>• ±2.0% max for V1 of triple outputs,</li> <li>• ±5.0% for V2 &amp; V3</li> </ul>
Setpoint Accuracy	<ul style="list-style-type: none"> <li>• ±1.5% max</li> </ul>
Voltage Balance	<ul style="list-style-type: none"> <li>• ±2.0% max</li> </ul>
Ripple & Noise	<ul style="list-style-type: none"> <li>• 2.5, 3.3 &amp; 5.0 V models 50 mV pk-pk max</li> <li>• 12.0 &amp; 15.0 V models 75 mV pk-pk max</li> <li>• (20 MHz bandwidth)</li> </ul>
Transient Response	<ul style="list-style-type: none"> <li>• 5% max deviation, recovery to within</li> <li>• 1% in 300 μs for a 25% load change</li> </ul>
Temperature Coefficient	<ul style="list-style-type: none"> <li>• ±0.02%/°C</li> </ul>
Overvoltage Protection	<ul style="list-style-type: none"> <li>• 2.5 V models 3.6 V typical,</li> <li>• 3.3 V models 3.9 V typical,</li> <li>• 5.0 V models 6.2 V typical,</li> <li>• 12.0 V models 15.0 V typical,</li> <li>• 15.0 V models 18.0 V typical</li> </ul>
Overcurrent Protection	<ul style="list-style-type: none"> <li>• 110-140%</li> </ul>
Short Circuit Protection	<ul style="list-style-type: none"> <li>• Continuous, trip &amp; restart (Hiccup mode)</li> </ul>
Remote On/Off	<ul style="list-style-type: none"> <li>• ON &gt;3.5 VDC or open circuit</li> <li>• OFF &lt;1.8 VDC</li> </ul>
Thermal Protection	<ul style="list-style-type: none"> <li>• Shuts down when case temperature</li> <li>• measures +110 °C typical</li> </ul>
Remote Sense	<ul style="list-style-type: none"> <li>• Compensates for up to 10% voltage drop</li> <li>• single output models only</li> </ul>

## General

Efficiency	<ul style="list-style-type: none"> <li>• See table</li> </ul>
Isolation Voltage	<ul style="list-style-type: none"> <li>• 1500 VDC Input to Output</li> <li>• 1500 VDC Input to Case</li> <li>• Output return connected to case</li> </ul>
Switching Frequency	<ul style="list-style-type: none"> <li>• 350 kHz typical</li> </ul>
MTBF	<ul style="list-style-type: none"> <li>• &gt;600 kHrs to MIL-STD-217F</li> </ul>

## Environmental

Operating Temperature	<ul style="list-style-type: none"> <li>• -40 °C to +100 °C, derate from 100% load</li> <li>• at +60 °C 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 90%, non-condensing</li> </ul>
Shock	<ul style="list-style-type: none"> <li>• 30 g, half sine wave 18 ms pulse applied</li> <li>• 3 times on each of 6 axes</li> </ul>
Vibration	<ul style="list-style-type: none"> <li>• 5-500 Hz, 3 g, for 10 mins on each</li> <li>• of 3 axes</li> </ul>

## EMC

Emissions	<ul style="list-style-type: none"> <li>• EN55022 Level A conducted &amp; radiated</li> <li>• with external components - contact</li> <li>• technical sales</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>

Input Voltage	Output Voltage	Output Current		Input Current <sup>(2)</sup>		Efficiency	Model Number <sup>(1)</sup>
		Min	Max	No Load	Full Load		
9-18 V	2.5 V	0 A	10.00 A	200 mA	2422 mA	86%	JCP4012S2V5
	3.3 V	0 A	10.00 A	200 mA	3161 mA	87%	JCP4012S3V3
	5.0 V	0 A	8.80 A	200 mA	3745 mA	89%	JCP4012S05
	12.0 V	0 A	3.33 A	200 mA	3703 mA	90%	JCP4012S12
	15.0 V	0 A	2.66 A	200 mA	3702 mA	90%	JCP4012S15
	±12.0 V	±0.09 A	±1.80 A	100 mA	4186 mA	86%	JCP4012D12
	±15.0 V	±0.07 A	±1.40 A	100 mA	4070 mA	86%	JCP4012D15
	3.3 V/±12.0 V	0.60 A/±0.04 A	6.00 A/±0.40 A	200 mA	2917 mA	84%	JCP4012T0312
	3.3 V/±15.0 V	0.60 A/±0.03 A	6.00 A/±0.30 A	200 mA	2857 mA	84%	JCP4012T0315
	5.0 V/±12.0 V	0.60 A/±0.04 A	6.00 A/±0.40 A	200 mA	3837 mA	86%	JCP4012T0512
5.0 V/±15.0 V	0.60 A/±0.03 A	6.00 A/±0.30 A	200 mA	3779 mA	86%	JCP4012T0515	
18-36 V	2.5 V	0 A	10.00 A	100 mA	1184 mA	88%	JCP4024S2V5
	3.3 V	0 A	10.00 A	100 mA	1545 mA	89%	JCP4024S3V3
	5.0 V	0 A	8.80 A	110 mA	1831 mA	91%	JCP4024S05
	12.0 V	0 A	3.33 A	100 mA	1811 mA	92%	JCP4024S12
	15.0 V	0 A	2.66 A	100 mA	1810 mA	92%	JCP4024S15
	±12.0 V	±0.09 A	±1.80 A	100 mA	2069 mA	87%	JCP4024D12
	±15.0 V	±0.07 A	±1.40 A	100 mA	2011 mA	87%	JCP4024D15
	3.3 V/±12.0 V	0.60 A/±0.04 A	6.00 A/±0.40 A	100 mA	1441 mA	85%	JCP4024T0312
	3.3 V/±15.0 V	0.60 A/±0.03 A	6.00 A/±0.30 A	100 mA	1412 mA	85%	JCP4024T0315
	5.0 V/±12.0 V	0.60 A/±0.04 A	6.00 A/±0.40 A	100 mA	1897 mA	87%	JCP4024T0512
5.0 V/±15.0 V	0.60 A/±0.03 A	6.00 A/±0.30 A	100 mA	1868 mA	87%	JCP4024T0515	
36-75 V	2.5 V	0 A	10.00 A	50 mA	599 mA	87%	JCP4048S2V5
	3.3 V	0 A	10.00 A	50 mA	781 mA	88%	JCP4048S3V3
	5.0 V	0 A	8.80 A	60 mA	926 mA	90%	JCP4048S05
	12.0 V	0 A	3.33 A	60 mA	916 mA	91%	JCP4048S12
	15.0 V	0 A	2.66 A	60 mA	906 mA	92%	JCP4048S15
	±12.0 V	±0.09 A	±1.80 A	50 mA	1034 mA	87%	JCP4048D12
	±15.0 V	±0.07 A	±1.40 A	50 mA	1006 mA	87%	JCP4048D15
	3.3 V/±12.0 V	0.60 A/±0.04 A	6.00 A/±0.40 A	50 mA	712 mA	86%	JCP4048T0312
	3.3 V/±15.0 V	0.60 A/±0.03 A	6.00 A/±0.30 A	50 mA	698 mA	86%	JCP4048T0315
	5.0 V/±12.0 V	0.60 A/±0.04 A	6.00 A/±0.40 A	50 mA	938 mA	88%	JCP4048T0512
5.0 V/±15.0 V	0.60 A/±0.03 A	6.00 A/±0.30 A	50 mA	923 mA	88%	JCP4048T0515	

Notes

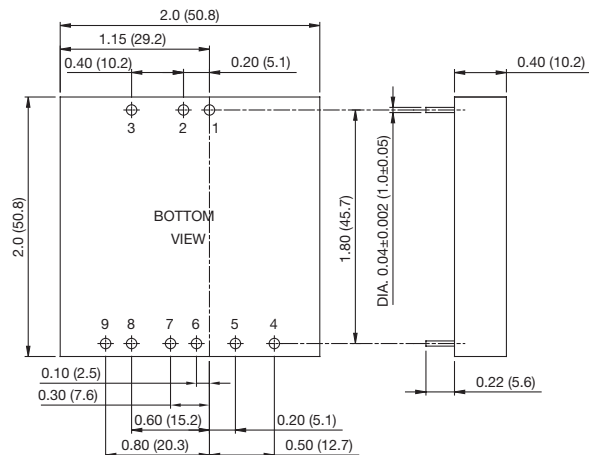
1. Add suffix '-N' to model number for negative logic Remote On/Off.

2. Input current measured at nominal input voltage.

Mechanical Details

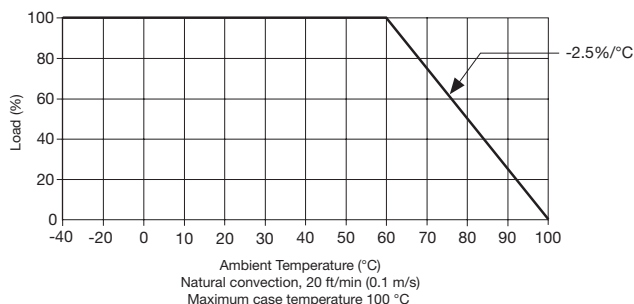
All dimensions are in inches (mm)  
Weight: 65 g (0.14 lbs)

PIN CONNECTIONS			
Pin	Single	Dual	Triple
1	+V Input	+V Input	+V Input
2	-V Input	-V Input	-V Input
3	On/Off	On/Off	On/Off
4	NC	NC	+Aux. Output
5	-Sense	+V Output 1	Rtn
6	+Sense	Rtn	-Aux. Output
7	+Vout	Rtn	+V Output 1
8	Rtn	-V Output 2	Rtn
9	Trim	Trim	NC



Application Notes

Derating Curve



Remote On/Off Control

Standard ROF logic is positive.  
Output On >3.5 VDC or open circuit  
Output Off >1.8 VDC

Optional ROF logic is negative ('-N' version).

Output On <1.8 VDC  
Output Off >3.5 VDC or open circuit

Remote Sense

If remote sense is not being used:  
+Sense should be connected to +Vout  
-Sense should be connected to -Vout.