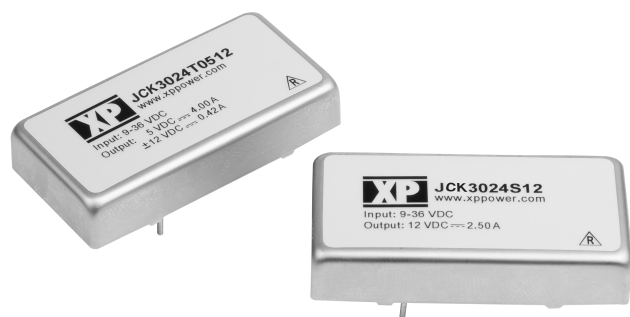


JCK30 Series



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

Specification

Input

Input Voltage Range	• 12 V (9-18 VDC), 24 V (18-36 VDC), 48 V (36-75 VDC)
Input Current	• See table
Undervoltage Lockout	• 12 V models: ON 8.6 V, OFF 7.9 V typical • 24 V models: ON 17.8 V, OFF 16 V typical • 48 V models: ON 33.5 V, OFF 30.5 V typical
Input Surge	• 12 V models 25 VDC for 100 ms • 24 V models 50 VDC for 100 ms • 48 V models 100 VDC for 100 ms

Output

Output Voltage	• See table
Output Voltage Trim	• $\pm 10\%$ on single outputs models only
Minimum Load	• No minimum load required for single and dual output models, 10% required for triple output models
Line Regulation	• $\pm 0.5\%$ max
Load Regulation	• Single output models: $\pm 0.5\%$ max • Dual output models: $\pm 1\%$ max balanced outputs
Cross Regulation	• $\pm 5\%$, see note 2
Setpoint Accuracy	• $\pm 1\%$
Start Up Time	• 30 ms typical
Ripple & Noise	• 100 mV or 1% pk-pk, whichever is greater, 20 MHz bandwidth, see note 3
Transient Response	• 3% max deviation, recovery to within 1% in $< 250 \mu\text{s}$ for a 25% load change
Temperature Coefficient	• $0.02\%/^{\circ}\text{C}$
Overvoltage Protection	• 3.3 V models: 3.9 V typical • 5 V models: 6.2 V typical • 12 V models: 15 V typical • 15 V models: 18 V typical • ± 5 V models: ± 6.2 V typical • ± 12 V models: ± 15 V typical • ± 15 V models: ± 18 V typical
Overload Protection	• $> 150\%$
Short Circuit Protection	• Trip & restart (Hiccup mode), auto recovery
Remote On/Off	• On = Logic High (> 3.0) or Open • Off = Logic Low (< 1.2 V) or short pin 2 to 3

General

Efficiency	• See table
Isolation	• 1600 VDC Input to Output • 1600 VDC Input to Case • 1600 VDC Output to Case
Isolation Capacitance	• 1500 pF typical
Switching Frequency	• 330 kHz typical
MTBF	• 430 kHrs min to MIL-HDBK-217F at 25 $^{\circ}\text{C}$, GB

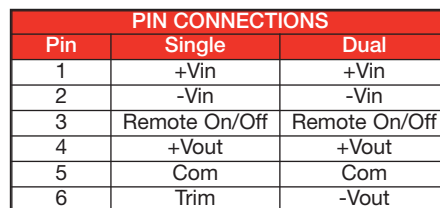
Environmental

Operating Temperature	• -40°C to $+75^{\circ}\text{C}$, see derating curve
Case Temperature	• $+105^{\circ}\text{C}$ max
Cooling	• Convection-cooled
Operating Humidity	• 5-95% RH, non-condensing
Storage Temperature	• -40°C to $+125^{\circ}\text{C}$

Input Voltage	Output Voltage	Output Current	Input Current ⁽¹⁾		Maximum Capacitive Load	Efficiency	Model Number
			No Load	Full Load			
9-18 VDC	3.3 V	8.00 A	80 mA	2426 mA	20000 µF	89%	JCK3012S3V3
	5.0 V	6.00 A	120 mA	2874 mA	14000 µF	91%	JCK3012S05
	5.1 V	6.00 A	110 mA	2874 mA	14000 µF	92%	JCK3012S5V1
	12.0 V	2.50 A	50 mA	2809 mA	2000 µF	91%	JCK3012S12
	15.0 V	2.00 A	50 mA	2809 mA	2000 µF	92%	JCK3012S15
	±5.0 V	±3.00 A	180 mA	2874 mA	±3000 µF	89%	JCK3012D05
	±12.0 V	±1.25 A	50 mA	2874 mA	±1300 µF	90%	JCK3012D12
	±15.0 V	±1.00 A	60 mA	2874 mA	±1300 µF	91%	JCK3012D15
18-36 VDC	3.3 V	8.00 A	60 mA	1185 mA	20000 µF	91%	JCK3024S3V3
	5.0 V	6.00 A	100 mA	1420 mA	14000 µF	92%	JCK3024S05
	5.1 V	6.00 A	90 mA	1448 mA	14000 µF	92%	JCK3024S5V1
	12.0 V	2.50 A	30 mA	1436 mA	2000 µF	92%	JCK3024S12
	15.0 V	2.00 A	30 mA	1420 mA	2000 µF	92%	JCK3024S15
	±5.0 V	±3.00 A	120 mA	1437 mA	±3000 µF	90%	JCK3024D05
	±12.0 V	±1.25 A	30 mA	1453 mA	±1300 µF	91%	JCK3024D12
	±15.0 V	±1.00 A	40 mA	1437 mA	±1300 µF	91%	JCK3024D15
36-75 VDC	3.3 V	8.00 A	50 mA	593 mA	20000 µF	90%	JCK3048S3V3
	5.0 V	6.00 A	60 mA	710 mA	14000 µF	91%	JCK3048S05
	5.1 V	6.00 A	60 mA	710 mA	14000 µF	91%	JCK3048S5V1
	12.0 V	2.50 A	30 mA	718 mA	2000 µF	91%	JCK3048S12
	15.0 V	2.00 A	30 mA	718 mA	2000 µF	91%	JCK3048S15
	±5.0 V	±3.00 A	70 mA	710 mA	±3000 µF	90%	JCK3048D05
	±12.0 V	±1.25 A	30 mA	718 mA	±1300 µF	90%	JCK3048D12
	±15.0 V	±1.00 A	40 mA	718 mA	±1300 µF	90%	JCK3048D15

1. Input current specified at nominal 24 V or 48 V input.
2. Cross regulation for duals is $\pm 5\%$ when one output is at 100% and the other is varied between 25% and 100%.
3. Measured with 1 μF ceramic capacitor across output rails.

Weight: 0.07 lbs (30 g) approx



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

Derating Curve



Output On >3.0 VDC or open circuit
Output Off <1.2 VDC or short circuit pins 2 & 3

The diagram shows an input filter circuit. It starts with a positive input terminal (+) and a negative input terminal (-). A 100 µF, 100 V capacitor is connected in parallel between these terminals. Following the capacitor, a 12 µF inductor is connected in series. The output of the inductor is connected to the positive input of a DC/DC Converter, labeled +Vin. The negative input of the DC/DC Converter is labeled -Vin. The output of the DC/DC Converter is labeled -Vout. This output is connected to a load, which is a 470 pF, 2 kV capacitor connected to ground.