

JCK30 Series



- 2:1 Input Range
- 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"> • 12 V (9-18 VDC), 24 V (18-36 VDC), 48 V (36-75 VDC)
Input Current	<ul style="list-style-type: none"> • See table
Undervoltage Lockout	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • See table
Output Voltage Trim	<ul style="list-style-type: none"> • $\pm 10\%$ on single outputs models only
Minimum Load	<ul style="list-style-type: none"> • No minimum load required
Line Regulation	<ul style="list-style-type: none"> • $\pm 0.5\%$ max
Load Regulation	<ul style="list-style-type: none"> • Single output models: $\pm 0.5\%$ max • Dual output models: $\pm 1\%$ max balanced outputs
Cross Regulation	<ul style="list-style-type: none"> • $\pm 5\%$, see note 2
Setpoint Accuracy	<ul style="list-style-type: none"> • $\pm 1\%$
Start Up Time	<ul style="list-style-type: none"> • 30 ms typical
Ripple & Noise	<ul style="list-style-type: none"> • 100 mV or 1% pk-pk, whichever is greater, 20 MHz bandwidth, see note 3
Transient Response	<ul style="list-style-type: none"> • 3% max deviation, recovery to within 1% in $< 250 \mu\text{s}$ for a 25% load change
Temperature Coefficient	<ul style="list-style-type: none"> • 0.02%/°C
Overvoltage Protection	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • $> 150\%$
Short Circuit Protection	<ul style="list-style-type: none"> • Trip & restart (Hiccup mode), auto recovery
Remote On/Off	<ul style="list-style-type: none"> • On = Logic High (> 3.0) or Open • Off = Logic Low (< 1.2 V) or short pin 2 to 3

General

Efficiency	<ul style="list-style-type: none"> • See table
Isolation	<ul style="list-style-type: none"> • 1600 VDC Input to Output • 1600 VDC Input to Case • 1600 VDC Output to Case
Isolation Capacitance	<ul style="list-style-type: none"> • 1500 pF typical
Switching Frequency	<ul style="list-style-type: none"> • 330 kHz typical
MTBF	<ul style="list-style-type: none"> • 430 kHrs min to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	<ul style="list-style-type: none"> • -40 °C to $+75$ °C, see derating curve
Case Temperature	<ul style="list-style-type: none"> • $+105$ °C max
Cooling	<ul style="list-style-type: none"> • Convection-cooled
Operating Humidity	<ul style="list-style-type: none"> • 5-95% RH, non-condensing
Storage Temperature	<ul style="list-style-type: none"> • -40 °C to $+125$ °C

Models and Ratings

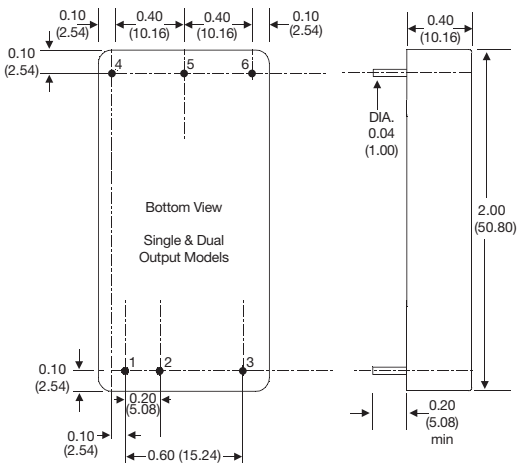
Input Voltage	Output Voltage	Output Current	Input Current ⁽¹⁾		Maximum Capacitive Load	Efficiency	Model Number
			No Load	Full Load			
9-18 VDC	3.3 V	8.00 A	80 mA	2426 mA	20000 µF	89%	JCK3012S3V3
	5.0 V	6.00 A	120 mA	2874 mA	14000 µF	91%	JCK3012S05
	5.1 V	6.00 A	110 mA	2874 mA	14000 µF	92%	JCK3012S5V1
	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

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 across output rails.

Mechanical Details

Weight: 0.07 lbs (30 g) approx



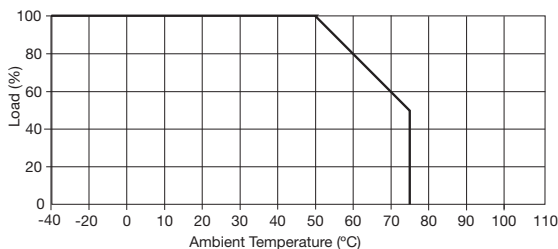
PIN CONNECTIONS		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	Remote On/Off	Remote On/Off
4	+Vout	+Vout
5	Com	Com
6	Trim	-Vout

Notes

1. All dimensions are in inches (mm).
2. 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)

Application Notes

Derating Curve



Remote On/Off Control

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

Input Filter

