



- 2:1 Input Range
- Very High Power Density
- High Efficiency – Up to 92%
- Remote On/Off
- 1600 VDC Isolation
- OCP, OVP & OTP Functions
- 3 Year Warranty

## Specification

### Input

Input Voltage Range	• 24 V (18-36 VDC), 48 V (36-75 VDC)
Input Current	• See table
Input Reflected Ripple Current	• 20 mA pk-pk through 12 $\mu$ H inductor, 5 Hz to 20 MHz
Undervoltage Lockout	• 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	• 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%
Minimum Load	• No minimum load required
Line Regulation	• $\pm$ 0.5% max
Load Regulation	• $\pm$ 0.5% max
Setpoint Accuracy	• $\pm$ 1%
Start Up Time	• 30 ms typical
Ripple & Noise	• 75 mV for 3V3 +5 V models, 100 mV for other models (see note 2)
Transient Response	• 3% max deviation, recovery to within 1% in <250 $\mu$ s for a 25% load change
Temperature Coefficient	• 0.02%/ $^{\circ}$ 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
Overload Protection	• 115-130% of output current
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	• 2000 pF typical
Switching Frequency	• 270 kHz typical
Power Density	• 37.5 W/in <sup>3</sup>
MTBF	• >110 kHrs min to MIL-HDBK-217F at 25 $^{\circ}$ C, GB

### Environmental

Operating Temperature	• -40 $^{\circ}$ C to +85 $^{\circ}$ C, see derating curve
Case Temperature	• +105 $^{\circ}$ C max
Cooling	• Natural convection
Operating Humidity	• 5-95% RH, non-condensing
Storage Temperature	• -40 $^{\circ}$ C to +125 $^{\circ}$ C

### EMC

Emissions	• EN55022 class A conducted & radiated with no external components
ESD Immunity	• EN61000-4-2, 4 kV contact discharge, Perf Criteria B
Radiated Immunity	• EN61000-4-3, 3 V/m, Perf Criteria A
EFT/Burst	• EN61000-4-4, level 1, Perf Criteria A*
Surge	• EN61000-4-5, level 1, Perf Criteria A
Conducted Immunity	• EN61000-4-6, 3 Vrms, Perf Criteria A
Magnetic Field	• EN61000-4-8, 1 A/m, Perf Criteria A

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

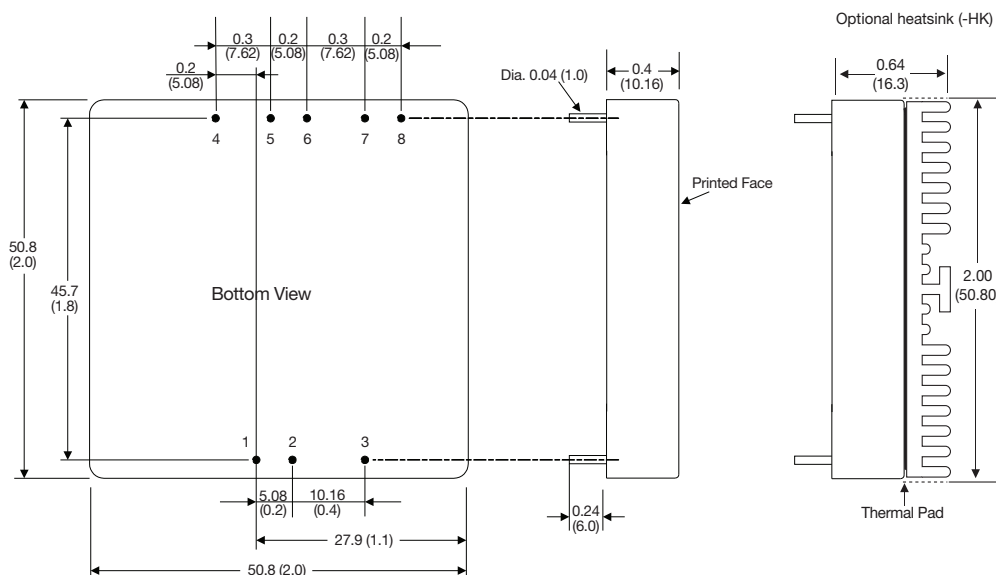
## Models and Ratings

Input Voltage	Output Voltage	Output Current	Input Current <sup>(1)</sup>		Maximum Capacitive Load	Efficiency	Model Number
			No Load	Full Load			
18-36 VDC	3.3 V	14.0 A	80 mA	2151 mA	36000 µF	91%	JCK6024S3V3
	5.0 V	12.0 A	100 mA	2762 mA	20400 µF	92%	JCK6024S05
	12.0 V	5.0 A	40 mA	2793 mA	3550 µF	91%	JCK6024S12
	15.0 V	4.0 A	40 mA	2793 mA	2300 µF	91%	JCK6024S15
36-75 VDC	3.3 V	14.0 A	50 mA	1075 mA	36000 µF	91%	JCK6048S3V3
	5.0 V	12.0 A	60 mA	1389 mA	20400 µF	92%	JCK6048S05
	12.0 V	5.0 A	40 mA	1397 mA	3550 µF	91%	JCK6048S12
	15.0 V	4.0 A	40 mA	1397 mA	2300 µF	91%	JCK6048S15

### Notes

1. Input current specified at nominal input.
2. Measured with 1 µF ceramic capacitor in parallel with a 10 µF electrolytic across output rails and 20 MHz bandwidth.
3. For heatsink option, add '-HK' to the end of the part number

## Mechanical Details



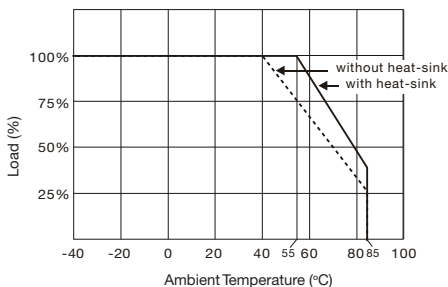
PIN CONNECTIONS	
Pin	Single
1	+Vin
2	-Vin
3	Remote On/Off
4	-Sense
5	+Sense
6	+Vout
7	-Vout
8	Trim

### Notes

1. All dimensions are in inches (mm).
2. Weight: 0.154 lbs (70 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

### Derating Curve



### External Output Trim

$$R_{\text{trim-up}} = \frac{(R2 + R3) \times R_{\text{TU}}}{(R2 + R3) - R_{\text{TU}}} - R4 \quad \text{Where:} \quad R_{\text{TU}} = \frac{R1 \times (R2 + R3) \times K}{V_{\text{REQ}} \times R3 - (R2 + R3) \times K}$$

$$R_{\text{trim-down}} = \frac{R1 \times R_{\text{TD}}}{R1 - R_{\text{TD}}} - R4 \quad \text{Where:} \quad R_{\text{TD}} = \frac{R3 \times (V_{\text{REQ}} - K)}{K} - R2$$

Model	R1	R2	R3	R4	K
JCK60XXS3V3	8200	330	5100	24000	1.24
JCK60XXS05	5100	22	5100	15000	2.495
JCK60XXS12	7500	6200	3600	20000	2.495
JCK60XXS15	8200	6800	3000	24000	2.495

### Remote Sense

If Remote Sense is not required, the +Sense and -Sense pins should be locally connected to +Vout and -Vout respectively. Remote sense can compensate for a total volt drop of 10%. When remote sense is used, output power must not exceed rated power.