



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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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60 Watts JCK Series



- 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 μ 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 μ s for a 25% load change
Temperature Coefficient	• 0.02%/°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 ³
MTBF	• >110 kHrs min to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	• -40 °C to +85 °C, see derating curve
Case Temperature	• +105 °C max
Cooling	• Natural convection
Operating Humidity	• 5-95% RH, non-condensing
Storage Temperature	• -40 °C to +125 °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 μ F/100 V.

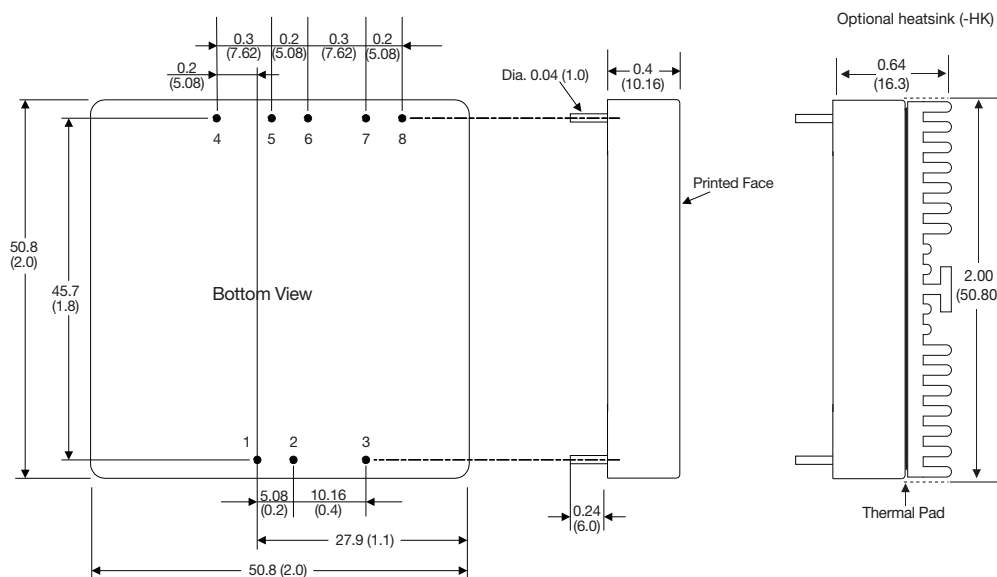
Models and Ratings

Input Voltage	Output Voltage	Output Current	Input Current ⁽¹⁾		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



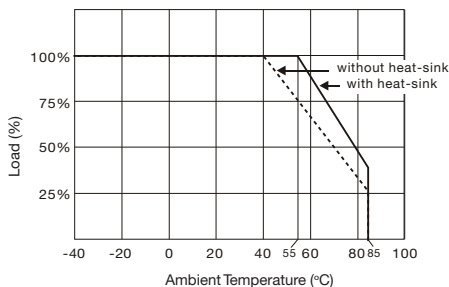
PIN CONNECTIONS	
Pin	Single
1	+Vin
2	-Vin
3	Remote On/Off
4	-Sense
5	+Sense
6	+Vout
7	-Vout
8	Trim

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

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

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

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.