

JBK Series



- Compact 1.1" x 1.0" Package
- Efficiency to 89%
- Fully Regulated Single Outputs
- Remote On/Off
- Input Undervoltage Protection
- Fully Isolated 2250 VDC
- SMD & Through-hole Versions

Specification

Input

Input Voltage Range	• 24 V (18-36 VDC) 48 V (36-75 VDC)
Input Current	• See table
Input Filter	• Pi network
Undervoltage Lockout	• Turn on >71% nominal input Turn off <65% nominal input

Output

Output Voltage	• See table
Output Voltage Trim	• $\pm 10\%$
Minimum Load	• No minimum load required
Line Regulation	• $\pm 0.2\%$ max
Load Regulation	• $\pm 0.2\%$ max
Setpoint Accuracy	• $\pm 1.5\%$ max
Start Up Delay	• 20 ms max
Start Up Rise Time	• 3 ms max
Ripple & Noise	• 75 mV pk-pk max for 3.3 & 5 V models, 100 mV pk-pk max for 12 & 15 V models 20 MHz BW (see note 3)
Transient Response	• 5% max deviation, recovery to within 1% in 500 μ s, 25% step load change
Temperature Coefficient	• $\pm 0.03\%/^{\circ}\text{C}$ max
Overcurrent Protection	• 110-140%
Short Circuit Protection	• Trip & restart (Hiccup mode), auto recovery
Overvoltage Protection	• 3.3 V model 3.63-4.62 V 5.0 V model 5.50-7.00 V 12.0 V model 13.20-16.50 V 15.0 V model 16.50-21.00 V
Remote On/Off	• On >3.5 VDC or open circuit Off <1.2 VDC or short circuit

General

Efficiency	• See table
Isolation	• 2250 VDC min Input to Output
Switching Frequency	• 400 kHz typical
MTBF	• 1,000 kHrs min per MIL-HDBK-217F

Environmental

Operating Temperature	• -40 $^{\circ}\text{C}$ to +100 $^{\circ}\text{C}$, derate from 100% load at +70 $^{\circ}\text{C}$ to 0% load at +100 $^{\circ}\text{C}$
Storage Temperature	• -40 $^{\circ}\text{C}$ to +125 $^{\circ}\text{C}$
Cooling	• Convection-cooled
Shock	• 30 g, half sine wave 18 ms pulse applied 3 times on each of 6 axes
Vibration	• 5-500 Hz, 3 g, for 10 mins on each of 3 axes

EMC

Emissions	• Meets EN55022 Class B radiated & conducted with external components (see application notes)
ESD Immunity	• EN61000-4-2, level 2 Perf Criteria A
Radiated Immunity	• EN61000-4-3, 3 V/m Perf Criteria A
Conducted Immunity	• EN61000-4-6, 3 V rms Perf Criteria A

Models and Ratings

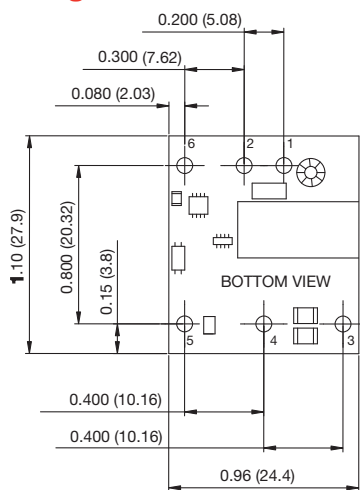
Input Voltage	Output Voltage	Output Current	Input Current		Efficiency	Model Number ⁽¹⁾
			No load	Full Load		
18-36 VDC	3.3 V	4000 mA	50 mA	639 mA	86%	JBK1524S3V3
	5.0 V	3000 mA	50 mA	718 mA	87%	JBK1524S05
	12.0 V	1250 mA	40 mA	718 mA	87%	JBK1524S12
	15.0 V	1000 mA	40 mA	718 mA	87%	JBK1524S15
36-75 VDC	3.3 V	4000 mA	30 mA	320 mA	86%	JBK1548S3V3
	5.0 V	3000 mA	30 mA	359 mA	87%	JBK1548S05
	12.0 V	1250 mA	30 mA	351 mA	89%	JBK1548S12
	15.0 V	1000 mA	30 mA	351 mA	89%	JBK1548S15

Notes

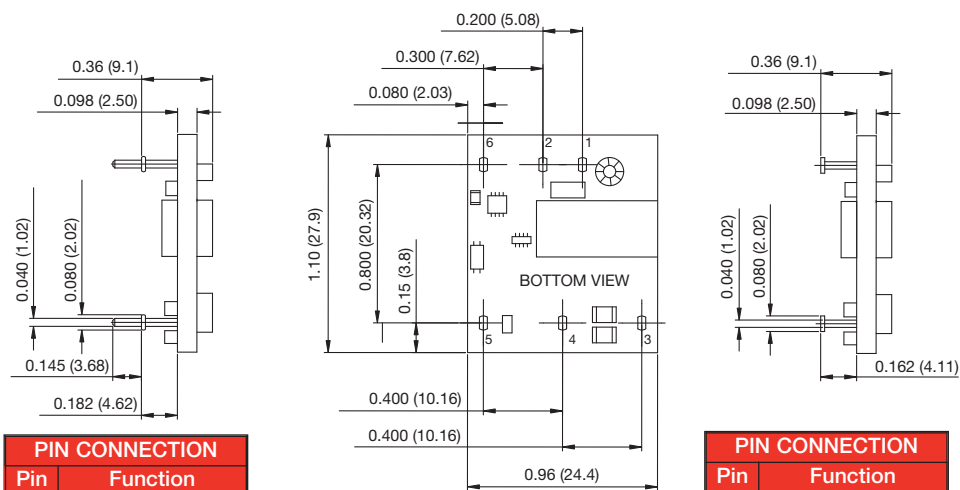
- Standard pinout is through hole, add suffix '-S' to model number for SMD version.
- Add suffix '-N' to model number for Remote On/Off negative logic.
- Noise and ripple measured using 10 μ F tantalum and 1 μ F ceramic capacitor across the output.

Mechanical Details

Through-Hole Model



SMD Model



PIN CONNECTION	
Pin	Function
1	+V Input
2	-V Input
3	+V Output
4	Trim
5	-V Output
6	Remote On/Off

PIN CONNECTION	
Pin	Function
1	+V Input
2	-V Input
3	+V Output
4	Trim
5	-V Output
6	Remote On/Off

All dimensions are in inches (mm)
 Tolerance: .xx = ± 0.02 (.x = ± 0.5)
 .xxx = ± 0.10 (.xx = ± 0.25)

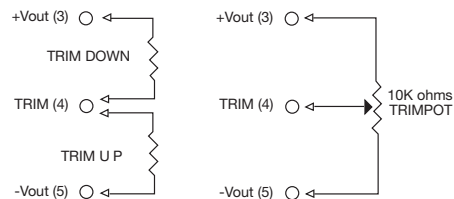
Application Notes

Remote On/Off Control

Standard Remote On/Off logic is positive.
 Output ON = >3.5 VDC or open circuit
 Output OFF = <1.2 VDC or short circuit

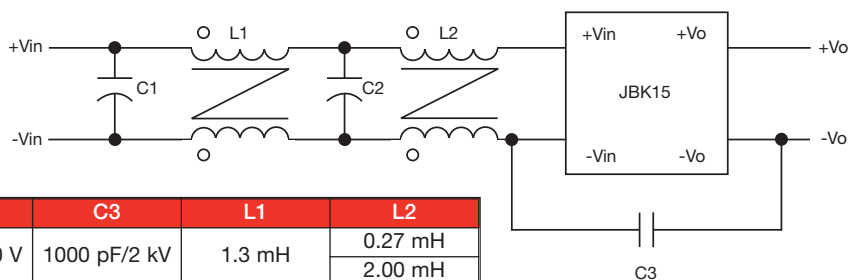
Optional Remote On/Off logic is negative ('-N' version).
 Output ON = <1.2 VDC or short circuit
 Output OFF = >3.5 VDC or open circuit

External Output Trim



Input Filter

To meet level B emissions.



Model	C1	C2	C3	L1	L2
24 V	330 μ F/100 V	330 μ F/100 V	1000 pF/2 kV	1.3 mH	0.27 mH
48 V					2.00 mH