

3-5 Watts

JTB03/05 Series



- 4:1 Input Range
- DIP-24 Metal Package
- Operating Temperature -25 °C to +100 °C
- Fully Regulated Single & Dual Outputs
- Optional 1500 VDC Isolation
- Continuous Short Circuit Protection
- 3 Year Warranty

Specification

Input

Input Voltage Range	• 24 V (9-36 VDC) • 48 V (18-72 VDC)
Input Current	• See table
Input Filter	• Pi network
Input Surge	• 24 V models 50 V for 100 ms • 48 V models 100 V for 100 ms

Output

Output Voltage	• See table
Output Voltage Balance	• $\pm 1\%$ max, dual output models
Initial Set Accuracy	• $\pm 2\%$ max
Start Up Delay	• 90 ms max
Start Up Rise Time	• 35 ms typical
Line Regulation	• $\pm 0.5\%$ max (high line to low line)
Load Regulation	• $\pm 0.5\%$ max single output models, • $\pm 1.0\%$ max for dual output models
Cross Regulation	• 2.2% on dual output models
Transient Response	• $< 1.5\%$ max deviation, recovery to within 1% in 800 μs for a 50% load change
Ripple & Noise	• 100 mV or 1% pk-pk, whichever is greater, 20 MHz bandwidth
Overcurrent Protection	• JTB03: $> 170\%$ fold back at nominal input voltage • JTB05: $> 130\%$ constant power
Short Circuit Protection	• JTB03: Continuous, hiccup mode, auto-restart • JTB05: Continuous, current limit, auto-restart
Maximum Capacitive Load	• 10,000 μF
Temperature Coefficient	• $\pm 0.05/^{\circ}\text{C}$ max

General

Efficiency	• See table
Isolation	• JTB03: 500 VDC Input to Output • 1500 VDC Input to Output, add suffix '-H' • JTB05: 1500 VDC Input to Output
Isolation Capacitance	• 80 pF max
Switching Frequency	• Variable 100-700 kHz
MTBF	• > 1.0 Mhrs to MIL-HDBK-217F at 25 $^{\circ}\text{C}$, GB

Environmental

Operating Temperature	• -25 $^{\circ}\text{C}$ to +100 $^{\circ}\text{C}$, derate linearly from 100% load at +70 $^{\circ}\text{C}$ to no load at 100 $^{\circ}\text{C}$
Case Temperature	• +100 $^{\circ}\text{C}$ max
Storage Temperature	• -40 $^{\circ}\text{C}$ to +100 $^{\circ}\text{C}$
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	• EN55022, level A conducted & radiated with external components, see application note
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

JTB03/05 Series **XP**

Input Voltage ⁽¹⁾	Output Voltage	Output Current	Input Current ⁽³⁾		Efficiency	Model Number ^(2,4)
			No Load	Full Load		
9-36 VDC	3.3 VDC	600 mA	15.0 mA	117 mA	70%	JTB0324S3V3
	5.0 VDC	600 mA	15.0 mA	174 mA	72%	JTB0324S05
	12.0 VDC	250 mA	15.0 mA	165 mA	76%	JTB0324S12
	15.0 VDC	200 mA	15.0 mA	165 mA	76%	JTB0324S15
	±5.0 VDC	±300 mA	25.0 mA	179 mA	70%	JTB0324D05
	±12.0 VDC	±125 mA	25.0 mA	174 mA	72%	JTB0324D12
	±15.0 VDC	±100 mA	25.0 mA	174 mA	72%	JTB0324D15
18-72 VDC	3.3 VDC	600 mA	7.5 mA	58 mA	70%	JTB0348S3V3
	5.0 VDC	600 mA	7.5 mA	87 mA	72%	JTB0348S05
	12.0 VDC	250 mA	7.5 mA	81 mA	77%	JTB0348S12
	15.0 VDC	200 mA	7.5 mA	81 mA	77%	JTB0348S15
	±5.0 VDC	±300 mA	12.0 mA	88 mA	71%	JTB0348D05
	±12.0 VDC	±125 mA	12.0 mA	87 mA	72%	JTB0348D12
	±15.0 VDC	±100 mA	12.0 mA	87 mA	70%	JTB0348D15
9-36 VDC	3.3 VDC	1000 mA	15.0 mA	191 mA	72%	JTB0524S3V3
	5.0 VDC	1000 mA	15.0 mA	267 mA	78%	JTB0524S05
	12.0 VDC	470 mA	15.0 mA	294 mA	80%	JTB0524S12
	15.0 VDC	400 mA	15.0 mA	313 mA	80%	JTB0524S15
	±5.0 VDC	±500 mA	25.0 mA	267 mA	78%	JTB0524D05
	±12.0 VDC	±230 mA	25.0 mA	288 mA	80%	JTB0524D12
	±15.0 VDC	±190 mA	25.0 mA	297 mA	80%	JTB0524D15
18-72 VDC	3.3 VDC	1000 mA	7.5 mA	100 mA	70%	JTB0548S3V3
	5.0 VDC	1000 mA	7.5 mA	134 mA	78%	JTB0548S05
	12.0 VDC	470 mA	7.5 mA	149 mA	79%	JTB0548S12
	15.0 VDC	400 mA	12.0 mA	157 mA	80%	JTB0548S15
	±5.0 VDC	±500 mA	12.0 mA	135 mA	77%	JTB0548D05
	±12.0 VDC	±230 mA	12.0 mA	146 mA	79%	JTB0548D12
	±15.0 VDC	±190 mA	12.0 mA	149 mA	80%	JTB0548D15

Notes

1. Nominal input voltage 24 or 48 VDC.
2. For optional 1500 VDC isolation add suffix '-H' to model number (JTB03 models only).
3. Input current is at nominal input voltage.
4. Surface mount versions with plastic case available in OEM quantities. Consult sales

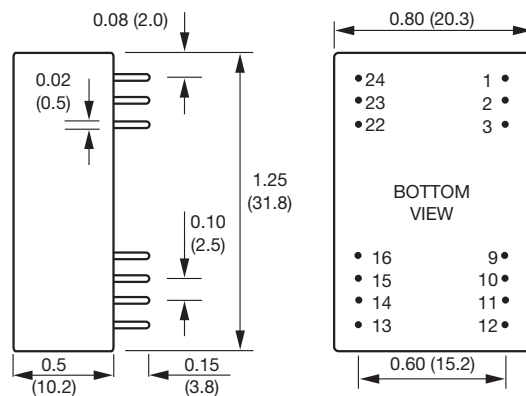
Mechanical Details and Application Note

All dimensions are in inches (mm)

Weight: 0.04 lbs (20 g) approx.

JTB03 Pin Connections		
Pin	Single Output	Dual Output
1	+V input	+V input
2	N/C	-V output
3	N/C	Common
9	No pin	No pin
10	-V output	Common
11	+V output	+V output
12	-V input	-V input
13	-V input	-V input
14	+V output	+V output
15	-V output	Common
16	No pin	No pin
22	N/C	Common
23	N/C	-V output
24	+V input	+V input

JTB03-H & JTB05 Pin Connections		
Pin	Single Output	Dual Output
1	No pin	No pin
2	-V input	-V input
3	-V input	-V input
9	N/C	Common
10	N/C	N/C
11	N/C	-V output
12	No pin	No pin
13	No pin	No pin
14	+V output	+V output
15	N/C	N/C
16	-V output	Common
22	+V input	+V input
23	+V input	+V input
24	No pin	No pin



Pin diameter tolerance: ± 0.00079 (± 0.02)

Pin pitch tolerance: ± 0.01 (± 0.25)

Case tolerance: ± 0.02 (± 0.5)

Input Filter

JTB05 JTB03
24 Vin: 220 μ F 47 μ F
48 Vin: 47 μ F 47 μ F

