

6 Watts

JTE Series



- 4:1 Input Range
- DIP-24 Plastic Case
- Operating Temperature -40°C to $+100^{\circ}\text{C}$
- Single & Dual Outputs
- Optional Metal Case
- 1500 VDC Isolation, 3000 VDC Option
- 3 Year Warranty

Specification

Input

Input Voltage Range	• 24 V (9-36 VDC) • 48 V (18-75 VDC)
Input Current	• See table
Input Filter	• Pi network
Input Reflected Ripple	• 20 mA pk-pk through 12 μH inductor and 4.7 μF capacitor
Input Surge	• 24 V models 50 VDC for 100 ms • 48 V models 100 VDC for 100 ms
Under Voltage Lockout	• 24 V models on $>8.5\text{ V}$, off $<8.0\text{ V}$ • 48 V models on $>16.5\text{ V}$, off $<15.5\text{ V}$

Output

Output Voltage	• See table
Output Voltage Balance	• $\pm 2\%$ max, dual output models
Initial Set Accuracy	• $\pm 2\%$ max
Minimum Load	• No minimum load required
Line Regulation	• $\pm 0.5\%$ max
Load Regulation	• $\pm 1.2\%$ max for single output and $\pm 5\%$ max for dual output from 10-100%
Cross Regulation	• $\pm 5\%$ max on dual output models (see note 4)
Start Up Delay	• 20 ms typical
Ripple & Noise	• 80 mV pk-pk (100 mV for D24 models), 20 MHz bandwidth (see note 5)
Transient Response	• $<3\%$ max deviation, recovery to within 1% in 300 μs for a 25% load change (4% max. deviation for S3V3 models)
Overload Protection	• 135% - 185% of Full Load
Short Circuit Protection	• Trip & restart (Hiccup mode), auto recovery
Maximum Capacitive Load	• See table
Temperature Coefficient	• $\pm 0.02/^{\circ}\text{C}$ max

General

Efficiency	• See table
Isolation Voltage	• 1500 VDC Input to Output, for optional high isolation version 3000 VDC input to output add suffix '-H' to model number • 1000 VDC Input to Case • 1000 VDC Output to Case
Isolation Capacitance	• 1000 pF typical input to output
Isolation Resistance	• $10^9\Omega$
Switching Frequency	• 330 kHz typical
Power Density	• 15 W/in³
MTBF	• $>800\text{ kHrs}$ to MIL-HDBK-217F at 25°C, GB

Environmental

Operating Temperature	• -40°C to $+100^{\circ}\text{C}$, derate from 100% load at $+60^{\circ}\text{C}$ to no load at $+100^{\circ}\text{C}$
Case Temperature	• $+100^{\circ}\text{C}$ max
Storage Temperature	• -55°C to $+125^{\circ}\text{C}$
Cooling	• Natural convection
Operating Humidity	• Up to 95%, non-condensing

EMC

Emissions	• EN55022 class A conducted
ESD Immunity	• EN61000-4-2, Level 3 • 8 kV air discharge Perf Criteria B, 6 kV contact discharge Perf Criteria A
Radiated immunity	• EN61000-4-3, 10 V/m, Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3, Perf Criteria A*
Surge	• EN61000-4-5, level 2, Perf Criteria A*
Conducted Immunity	• EN61000-4-6, 10 Vrms, Perf Criteria A
Magnetic Fields	• EN61000-4-8, 1 A/m, Perf Criteria A

* External input capacitor required, 220 μF /100V

Models and Ratings

JTE06 XP

Input Voltage	Output Voltage	Output Current	Input Current ⁽²⁾		Maximum Capacitive Load ⁽³⁾	Efficiency	Model Number ^(1,4)
			No Load	Full Load			
9-36 V	3.3 V	1400 mA	10 mA	257 mA	470 μ F	76%	JTE0624S3V3
	5.0 V	1200 mA	10 mA	316 mA	470 μ F	80%	JTE0624S05
	12.0 V	500 mA	10 mA	301 mA	100 μ F	84%	JTE0624S12
	15.0 V	400 mA	10 mA	301 mA	100 μ F	84%	JTE0624S15
	24.0 V	250 mA	10 mA	301 mA	47 μ F	84%	JTE0624S24
	± 3.3 V	± 909 mA	10 mA	324 mA	± 220 μ F	78%	JTE0624D03
	± 5.0 V	± 600 mA	10 mA	308 mA	± 220 μ F	82%	JTE0624D05
	± 12.0 V	± 250 mA	10 mA	301 mA	± 100 μ F	84%	JTE0624D12
	± 15.0 V	± 200 mA	15 mA	301 mA	± 100 μ F	84%	JTE0624D15
18-75 V	± 24.0 V	± 125 mA	20 mA	308 mA	± 47 μ F	82%	JTE0624D24
	3.3 V	1400 mA	7 mA	128 mA	470 μ F	76%	JTE0648S3V3
	5.0 V	1200 mA	7 mA	154 mA	470 μ F	82%	JTE0648S05
	12.0 V	500 mA	7 mA	151 mA	100 μ F	84%	JTE0648S12
	15.0 V	400 mA	7 mA	151 mA	100 μ F	84%	JTE0648S15
	24.0 V	250 mA	7 mA	151 mA	47 μ F	84%	JTE0648S24
	± 3.3 V	± 909 mA	7 mA	162 mA	± 220 μ F	78%	JTE0648D03
	± 5.0 V	± 600 mA	7 mA	154 mA	± 220 μ F	82%	JTE0648D05
	± 12.0 V	± 250 mA	7 mA	151 mA	± 100 μ F	84%	JTE0648D12
	± 15.0 V	± 200 mA	7 mA	151 mA	± 100 μ F	84%	JTE0648D15
	± 24.0 V	± 125 mA	10 mA	158 mA	± 47 μ F	80%	JTE0648D24

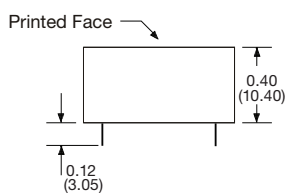
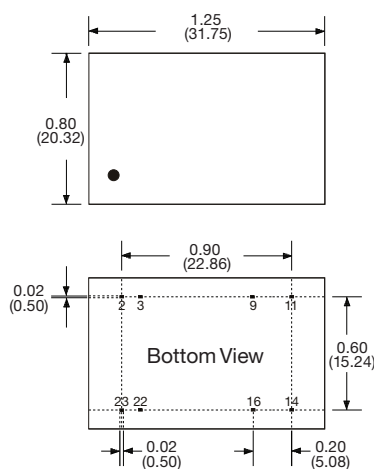
Notes

- For optional 3000 VDC isolation add suffix '-H' to model number.
- Input current measured at nominal input voltage.
- Maximum capacitive load is per output.
- Cross regulation for duals is $\pm 5\%$ when one output is at 100% and the other is varied between 25% and 100%.

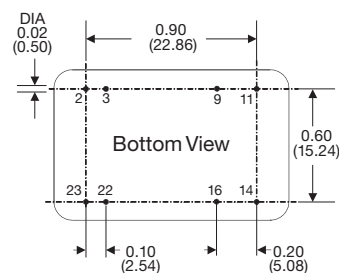
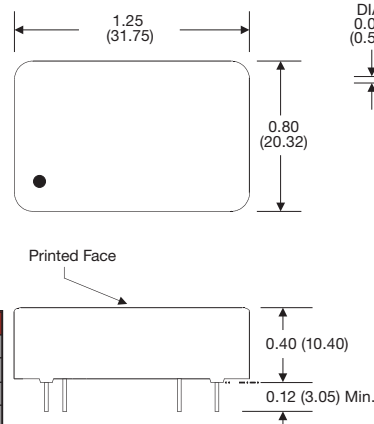
- Ripple & Noise measured with 1μ F ceramic capacitor across output pins.
- For optional metal case version, add suffix '-M' to part number e.g. JTE0624S12-M.

Mechanical Details

Plastic Case



Optional Metal Case



Pin	Single	Dual
2	-Vin	-Vin
3	-Vin	-Vin
9	No Pin	Common
11	N.C.	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

Notes

- All dimensions are in inches (mm)
- Weight: 0.04 lbs (17 g) approx.
- Pin diameter: 0.02 ± 0.002 (0.5 ± 0.005)

- Pin pitch tolerance: ± 0.014 (0.35)
- Case tolerance: ± 0.02 (± 0.5)

Application Note

Derating Curve

