

JTE Series



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

Specification

Input

Input Voltage Range	<ul style="list-style-type: none"> • 24 V (9-36 VDC) • 48 V (18-75 VDC)
Input Current	<ul style="list-style-type: none"> • See table
Input Filter	<ul style="list-style-type: none"> • Pi network
Input Reflected Ripple	<ul style="list-style-type: none"> • 20 mA pk-pk through 12 μH inductor and 4.7 μF capacitor
Input Surge	<ul style="list-style-type: none"> • 24 V models 50 VDC for 100 ms • 48 V models 100 VDC for 100 ms
Under Voltage Lockout	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • See table
Output Voltage Balance	<ul style="list-style-type: none"> • $\pm 2\%$ max, dual output models
Initial Set Accuracy	<ul style="list-style-type: none"> • $\pm 2\%$ max
Minimum Load	<ul style="list-style-type: none"> • No minimum load required
Line Regulation	<ul style="list-style-type: none"> • $\pm 0.5\%$ max
Load Regulation	<ul style="list-style-type: none"> • $\pm 1.2\%$ max for single output and $\pm 5\%$ max for dual output from 10-100%
Cross Regulation	<ul style="list-style-type: none"> • $\pm 5\%$ max on dual output models (see note 4)
Start Up Delay	<ul style="list-style-type: none"> • 20 ms typical
Ripple & Noise	<ul style="list-style-type: none"> • 80 mV pk-pk (100 mV for D24 models), 20 MHz bandwidth (see note 5)
Transient Response	<ul style="list-style-type: none"> • $<3\%$ max deviation, recovery to within 1% in 300 μs for a 25% load change (4% max. deviation for S3V3 models)
Overload Protection	<ul style="list-style-type: none"> • 135% - 185% of Full Load
Short Circuit Protection	<ul style="list-style-type: none"> • Trip & restart (Hiccup mode), auto recovery
Maximum Capacitive Load	<ul style="list-style-type: none"> • See table
Temperature Coefficient	<ul style="list-style-type: none"> • $\pm 0.02/^{\circ}\text{C}$ max

General

Efficiency	<ul style="list-style-type: none"> • See table
Isolation Voltage	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 1000 pF typical input to output
Isolation Resistance	<ul style="list-style-type: none"> • $10^9\Omega$
Switching Frequency	<ul style="list-style-type: none"> • 330 kHz typical
Power Density	<ul style="list-style-type: none"> • 15 W/in³
MTBF	<ul style="list-style-type: none"> • $>800\text{ kHrs}$ to MIL-HDBK-217F at $25\text{ }^{\circ}\text{C}$, GB

Environmental

Operating Temperature	<ul style="list-style-type: none"> • $-40\text{ }^{\circ}\text{C}$ to $+100\text{ }^{\circ}\text{C}$, derate from 100% load at $+60\text{ }^{\circ}\text{C}$ to no load at $+100\text{ }^{\circ}\text{C}$
Case Temperature	<ul style="list-style-type: none"> • $+100\text{ }^{\circ}\text{C}$ max
Storage Temperature	<ul style="list-style-type: none"> • $-55\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$
Cooling	<ul style="list-style-type: none"> • Natural convection
Operating Humidity	<ul style="list-style-type: none"> • Up to 95%, non-condensing

EMC

Emissions	<ul style="list-style-type: none"> • EN55022 class A conducted
ESD Immunity	<ul style="list-style-type: none"> • EN61000-4-2, Level 3 • 8 kV air discharge Perf Criteria B, 6 kV contact discharge Perf Criteria B
Radiated immunity	<ul style="list-style-type: none"> • EN61000-4-3, 10 V/m, Perf Criteria A
EFT/Burst	<ul style="list-style-type: none"> • EN61000-4-4, level 3, Perf Criteria A*
Surge	<ul style="list-style-type: none"> • EN61000-4-5, level 2, Perf Criteria A*
Conducted Immunity	<ul style="list-style-type: none"> • EN61000-4-6, 10 Vrms, Perf Criteria A
Magnetic Fields	<ul style="list-style-type: none"> • EN61000-4-8, 1 A/m, Perf Criteria A

Safety

Safety Approvals	<ul style="list-style-type: none"> • UL60950-1, CAN/CSA C22.2 No.60950-1
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* External input capacitor required, 220 $\mu\text{F}/100\text{V}$

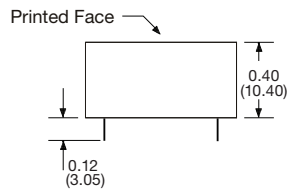
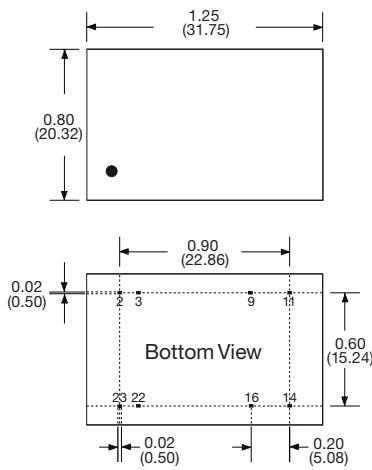
Input Voltage	Output Voltage	Output Current	Input Current ⁽²⁾		Maximum Capacitive Load ⁽³⁾	Efficiency	Model Number ^(1,4)
			No Load	Full Load			
9-36 V	3.3 V	1400 mA	10 mA	257 mA	470 µF	76%	JTE0624S3V3
	5.0 V	1200 mA	10 mA	316 mA	470 µF	80%	JTE0624S05
	12.0 V	500 mA	10 mA	301 mA	100 µF	84%	JTE0624S12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

Notes

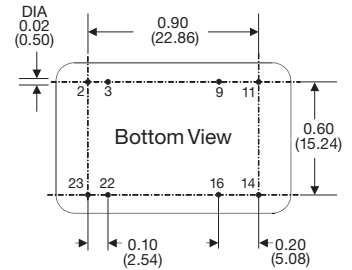
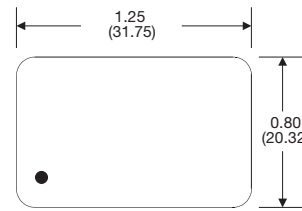
- For optional 3000 VDC isolation add suffix '-H' to model number.
- Input current measured at nominal input voltage.
- Maximum capacitive load is per output.
- Cross regulation for duals is ±5% when one output is at 100% and the other is varied between 25% and 100%.
- Ripple & Noise measured with 1µF 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



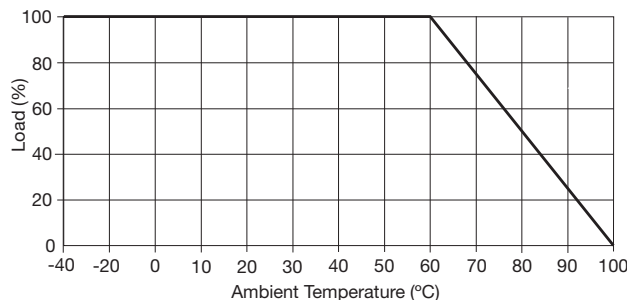
Pin	Single	Dual
2	-Vin	-Vin
3	-Vin	-Vin
9	No Pin	Common
11	N.C.	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

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



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