40 Watts
JTL Series

- 4:1 Input Range
- High Power Density
- Single and Dual Outputs
- High Efficiency – Up to 92%
- Remote On/Off
- 1600 VDC Isolation
- 3 Year Warranty

Specification

Input

Input Voltage Range	• 24 V (9-36 VDC), 48 V (18-75 VDC)
Input Current	• See table
Input Reflected Ripple Current	• 20 mA pk-pk through 12 µH inductor
Input Reverse Voltage Protection	• None
Undervoltage Lockout	• 24 V models: ON 8.6 V, OFF 7.9 V typical 48 V models: ON 17.8 V, OFF 16 V typical
Input Filter	• Pi network
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	• ±10%
Minimum Load	• No minimum load required
Line Regulation	• ±0.5% max
Load Regulation	• Single output models: ±0.5% max Dual output models: ±1% max balanced outputs
Cross Regulation	• ±5% for dual outputs (see note 2)
Setpoint Accuracy	• ±1%
Start Up Time	• 25 ms typical
Ripple & Noise	• 50 mV pk-pk max for 3.3 V & 5 V models, 75 mV pk-pk max for other single output models, 150 mV pk-pk max for dual output models, 20 MHz bandwidth, (see note 3)
Transient Response	• 3% max deviation, recovery to within 1% in <250 µs 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 ±12 V models: ±15 V typical ±15 V models: ±18 V typical
Overload Protection	• >130% of full load
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
Max Capacitive Load	• See table

General

Efficiency	• See table
Isolation	• 1600 VDC Input to Output 1600 VDC Input to Case 1600 VDC Output to Case
Isolation Capacitance	• 2500 pF max
Switching Frequency	• 270 kHz, typical
Power Density	• 25 W/in^3
MTBF	• 150 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	• Convection-cooled
Operating Humidity	• 5-95% RH, non-condensing
Storage Temperature	• -40 °C to +125 °C

EMC & Safety

Emissions	• EN55022, class A conducted and radiated with external components
ESD Immunity	• EN61000-4-2, level 3, Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3, Perf Criteria A (see note 4)
Surge	• EN61000-4-5, installation class 2, Perf Criteria A (see note 4)
Conducted Immunity	• EN61000-4-6, 3 Vrms, Perf Criteria A
Magnetic Fields	• EN61000-4-8, 1 A/m, Perf Criteria A

Models and Ratings

Input Voltage	Output Voltage	Output Current	Input Current [1]		Maximum Capacitive Load	Efficiency	Model Number
			No Load	Full Load			
9-36 VDC	3.3 V	10.00 A	80 mA	1600 mA	25000 µF	89%	JTL4024S3V3†^
	5.0 V	8.00 A	100 mA	1900 mA	13000 µF	91%	JTL4024S05†^
	12.0 V	3.35 A	50 mA	1930 mA	2300 µF	90%	JTL4024S12†^
	15.0 V	2.65 A	50 mA	1910 mA	1500 µF	90%	JTL4024S15†^
	±12.0 V	±1.65 A	60 mA	1920 mA	±1200 µF	89%	JTL4024D12†^
	±15.0 V	±1.35 A	60 mA	1960 mA	±750 µF	89%	JTL4024D15†^
18-75 VDC	3.3 V	10.00 A	60 mA	800 mA	25000 µF	89%	JTL4048S3V3†^
	5.0 V	8.00 A	60 mA	940 mA	13000 µF	92%	JTL4048S05†^
	12.0 V	3.35 A	30 mA	970 mA	2300 µF	90%	JTL4048S12†^
	15.0 V	2.65 A	30 mA	940 mA	1500 µF	91%	JTL4048S15†^
	±12.0 V	±1.65 A	30 mA	950 mA	±1200 µF	90%	JTL4048D12†^
	±15.0 V	±1.35 A	30 mA	970 mA	±750 µF	90%	JTL4048D15†^

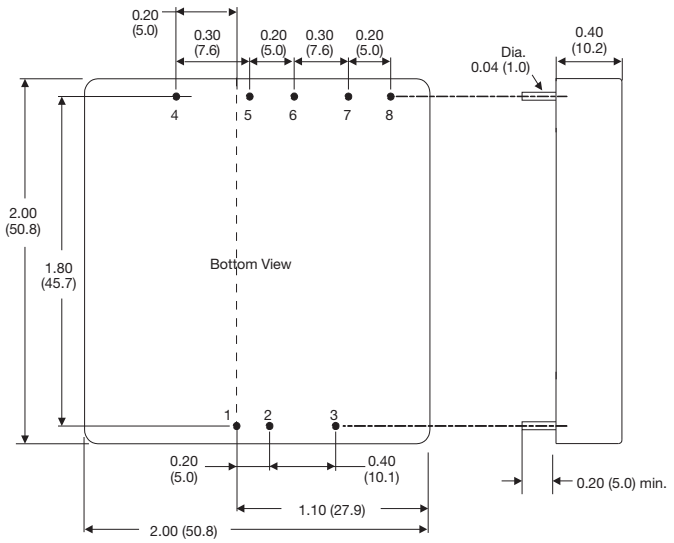
Notes

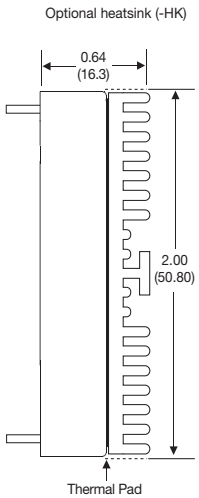
1. *Input current specified at nominal 24 V or 48 V input.*
2. *Cross regulation for duals is ±5% when one output is at 100% and the other is varied between 25% and 100%.*
3. *Measured with 1 µF ceramic capacitor across output rails.*
4. *A 220 µF/250 V capacitor across the input is required in order to meet EN61000-4-4 and EN61000-4-5.*
5. *Efficiency is measured at full load and nominal input at 25 °C.*
6. *For heatsink option, add '-HK' to the end of the part number.*

† Available from Farnell & element14. See pages 284-290.

^ Available from Newark. See pages 291-296.

Mechanical Details





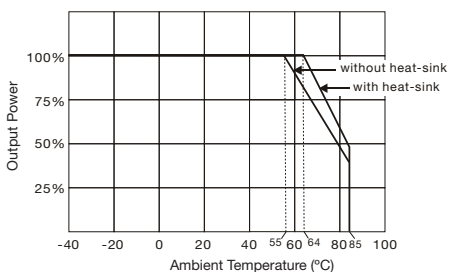
PIN CONNECTIONS		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	Remote On/Off	Remote On/Off
4	-Sense	+Vout
5	+Sense	Com
6	+Vout	Com
7	-Vout	-Vout
8	Trim	Trim

Notes

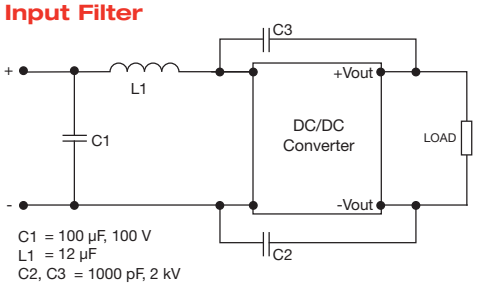
1. All dimensions are in inches (mm).
2. Weight: 0.07 lbs (30 g) approx
3. Pin diameter: 0.04 ±0.002 (1.0 ±0.05)
4. Pin pitch tolerance: ±0.014 (±0.35)
5. Case tolerance: ±0.02 (±0.5)

Application Notes

Derating Curve

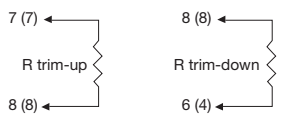


Input Filter



C1 = 100 µF, 100 V
L1 = 12 µF
C2, C3 = 1000 pF, 2 kV

External Output Trim



Output can be externally trimmed using this method.
( ) for dual output trim.

Contact sales for details.