30 Watts

JTL Series

- 4:1 Input Range
- High Power Density
- Single, Dual and Triple Outputs
- High Efficiency – Up to 91%
- 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	• 20 mA pk-pk through 12 µH inductor
Input Filter	• Pi network
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 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% on single outputs models only
Minimum Load	• No minimum load required for single and dual output models, 10% required on all outputs for triple output models
Line Regulation	• ±0.2% max for single and dual output models, ±1.0% main, ±5% auxiliary for triple output models
Load Regulation	• Single output models: ±0.5% max Dual output models: ±1% max balanced outputs Triple output models: ±1% max main, ±5% auxiliaries
Cross Regulation	• ±5% for dual and triples output (see note 2)
Setpoint Accuracy	• ±1% (±5% for triple auxiliaries)
Start Up Time	• 30 ms typical
Ripple & Noise	• 100 mV or 1% pk-pk, whichever is greater single & dual output models, 50/75 mV pk-pk main/auxiliary outputs of triple 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
Temp. 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 ±5 V models: ±6.2 V typical ±12 V models: ±15 V typical ±15 V models: ±18 V typical
Overload Protection	• >150% of full load
Short Circuit Protection	• Trip & restart (hiccup mode), auto recovery
Overtemperature Protection	• 115 °C typical
Remote On/Off	• On = Logic High (>3.0) or Open Off = Logic Low (<1.2 V) or short pin 2 to 3
Maximum Capacitive Load	• See table

General

Efficiency	• See table
Isolation Voltage	• 1600 VDC Input to Output 1600 VDC Input to Case 1600 VDC Output to Case
Switching Frequency	• 330 kHz typical
Water Wash	• Using de-ionised water, do not soak. Dry thoroughly
Solder Profile	• Wave solder, 260degC max 1.5mm from case for 10s max
Pin Material	• Brass, solder coated
Case Material	• Copper, nickel coated with non-conductive plastic base UL94V-0 rated
Potting Material	• Epoxy, UL94V-0 rated
Power Density	• 37.5 W/in^3
MTBF	• 320 kHrs min to MIL-HDBK-217F at 25°C, GB

Environmental

Operating Temperature	• -40°C to +75°C, see derating curve
Case Temperature	• +105 °C max
Cooling	• Convection-cooled
Operating Humidity	• 5-95% RH, non-condensing
Storage Temperature	• -55°C to +125°C

EMC

Emissions	• EN55032, class A conducted & radiated with external components, see application note
ESD Immunity	• EN61000-4-2, level 3, 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 installation class 2, Perf Criteria A
Conducted Immunity	• EN61000-4-6 10 V/rms, Perf Criteria A
Magnetic Field	• EN61000-4-8 1 A/m, Perf Criteria A

Safety

Safety Approvals	• CE (Meets all applicable directives), UKCA (Meets all applicable legislation)

*External input capacitor required 220 µF/250 V

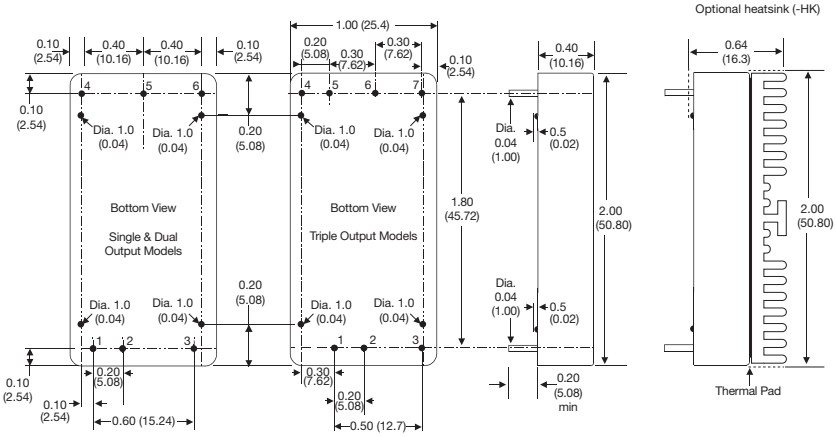
Models and Ratings

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	7.50 A	60 mA	1185 mA	20000 µF	89%	JTL3024S3V3
	5.0 V	6.00 A	100 mA	1420 mA	14000 µF	91%	JTL3024S05
	12.0 V	2.50 A	30 mA	1436 mA	2000 µF	90%	JTL3024S12
	15.0 V	2.00 A	30 mA	1420 mA	2000 µF	91%	JTL3024S15
	±5.0 V	±3.00 A	120 mA	1437 mA	±3000 µF	90%	JTL3024D05
	±12.0 V	±1.25 A	30 mA	1453 mA	±1300 µF	89%	JTL3024D12
	±15.0 V	±1.00 A	40 mA	1437 mA	±1300 µF	89%	JTL3024D15
	+3.3 V, ±12.0 V	5.00 A, ±0.42 A	80 mA	1287 mA	15000, ±220 µF	89%	JTL3024T0312
	+3.3 V, ±15.0 V	5.00 A, ±0.33 A	90 mA	1279 mA	15000, ±220 µF	89%	JTL3024T0315
	+5.0 V, ±12.0 V	4.00 A, ±0.42 A	100 mA	1440 mA	8000, ±220 µF	89%	JTL3024T0512
	+5.0 V, ±15.0 V	4.00 A, ±0.33 A	110 mA	1431 mA	8000, ±220 µF	90%	JTL3024T0515
18-75 VDC	3.3 V	7.50 A	50 mA	593 mA	20000 µF	89%	JTL3048S3V3
	5.0 V	6.00 A	60 mA	702 mA	14000 µF	91%	JTL3048S05
	12.0 V	2.50 A	30 mA	718 mA	2000 µF	90%	JTL3048S12
	15.0 V	2.00 A	30 mA	710 mA	2000 µF	90%	JTL3048S15
	±5.0 V	±3.00 A	70 mA	710 mA	±3000 µF	91%	JTL3048D05
	±12.0 V	±1.25 A	30 mA	718 mA	±1300 µF	90%	JTL3048D12
	±15.0 V	±1.00 A	40 mA	718 mA	±1300 µF	90%	JTL3048D15
	+3.3 V, ±12.0 V	5.00 A, ±0.42 A	50 mA	663 mA	15000, ±220 µF	89%	JTL3048T0312
	+3.3 V, ±15.0 V	5.00 A, ±0.33 A	50 mA	640 mA	15000, ±220 µF	89%	JTL3048T0315
	+5.0 V, ±12.0 V	4.00 A, ±0.42 A	60 mA	712 mA	8000, ±220 µF	91%	JTL3048T0512
	+5.0 V, ±15.0 V	4.00 A, ±0.33 A	50 mA	707 mA	8000, ±220 µF	90%	JTL3048T0515

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%. Cross regulation for triples is ±5% when main output and one auxiliary is at 25% and the other is varied between 25% and 100%.*
3. *Measured with 1 µF ceramic capacitor across output rails.*
4. *For heatsink option add '-HK' to the end of the part number.*

Mechanical Details



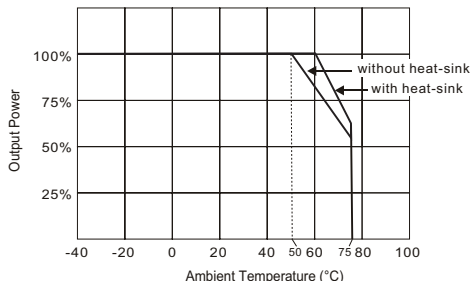
PIN CONNECTIONS			
Pin	Single	Dual	Triple
1	+Vin	+Vin	+Vin
2	-Vin	-Vin	-Vin
3	Remote On/Off	Remote On/Off	Remote On/Off
4	+Vout	+Vout	+Vout 2
5	-Vout	Com	-Vout 3
6	Trim	-Vout	Com
7			+Vout 1

Notes

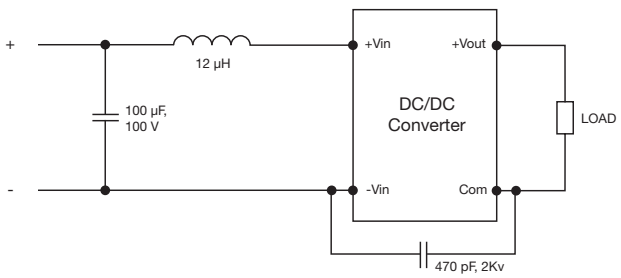
1. All dimensions are in inches (mm).
2. Weight: 0.07 lbs (30 g) approx
3. Pin diameter: 0.04 ±0.002 (1.0 ±0.05)
4. Pin pitch tolerance: ±0.014 (±0.35)
5. Case tolerance: ±0.02 (±0.5)

Application Notes

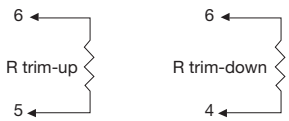
Derating Curve



Input Filter



External Output Trim



Output can be externally trimmed using this method.

Contact sales for details.