

JTL30 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 |
| 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 | • $\pm 10\%$ on single outputs models only |
| Minimum Load | • No minimum load required for single and dual output models, 10% required for triple output models |
| Line Regulation | • $\pm 0.2\%$ max for single and dual output models, $\pm 1.0\%$ main, $\pm 5\%$ auxiliary for triple output models |
| Load Regulation | • Single output models: $\pm 0.5\%$ max
Dual output models: $\pm 1\%$ max balanced outputs
Triple output models: $\pm 1\%$ max main, $\pm 5\%$ auxiliaries |
| Cross Regulation | • $\pm 5\%$ for dual and triples outputs, see note 2 |
| Setpoint Accuracy | • $\pm 1\%$ ($\pm 5\%$ for triple auxiliaries) |
| Start Up Time | • 30 ms typical |
| Ripple & Noise | • 100 mV or 1% pk-pk, whichever is greater single and 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 $< 250 \mu\text{s}$ 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
± 5 V models: ± 6.2 V typical
± 12 V models: ± 15 V typical
± 15 V models: ± 18 V typical |
| Overload Protection | • $> 120\%$ |
| 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 |

General

- | | |
|---------------------|---|
| Efficiency | • See table |
| Isolation | • 1600 VDC Input to Output
1600 VDC Input to Case
1600 VDC Output to Case |
| Switching Frequency | • 330 kHz typical |
| 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 | • -40 °C to $+125$ °C |

Models and Ratings

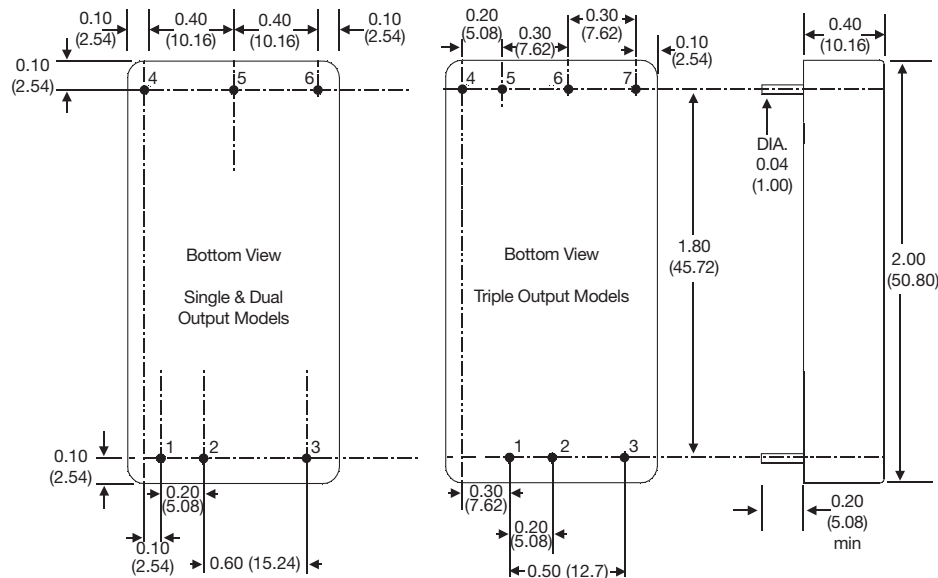
Input Voltage	Output Voltage	Output Current	Input Current ⁽¹⁾		Maximum Capacitive Load	Efficiency	Model Number
			No Load	Full Load			
9-36 VDC	3.3 V	7.50 A	100 mA	1228 mA	20000 µF	86%	JTL3024S3V3
	5.0 V	6.00 A	100 mA	1483 mA	14000 µF	88%	JTL3024S05
	12.0 V	2.50 A	100 mA	1437 mA	2000 µF	89%	JTL3024S12
	15.0 V	2.00 A	100 mA	1437 mA	2000 µF	89%	JTL3024S15
	±5.0 V	±3.00 A	100 mA	1453 mA	±3000 µF	88%	JTL3024D05
	±12.0 V	±1.25 A	100 mA	1470 mA	±1300 µF	87%	JTL3024D12
	±15.0 V	±1.00 A	100 mA	1470 mA	±1300 µF	87%	JTL3024D15
	3.3 V, ±12.0 V	5.00 A, ±0.42 A	100 mA	1288 mA	15000, ±220 µF	88%	JTL3024T0312
	3.3 V, ±15.0 V	5.00 A, ±0.33 A	100 mA	1279 mA	15000, ±220 µF	88%	JTL3024T0315
	5.0 V, ±12.0 V	4.00 A, ±0.42 A	100 mA	1424 mA	8000, ±220 µF	90%	JTL3024T0512
5.0 V, ±15.0 V	4.00 A, ±0.33 A	100 mA	1418 mA	8000, ±220 µF	90%	JTL3024T0515	
18-75 VDC	3.3 V	7.50 A	50 mA	614 mA	20000 µF	86%	JTL3048S3V3
	5.0 V	6.00 A	50 mA	742 mA	14000 µF	88%	JTL3048S05
	12.0 V	2.50 A	50 mA	711 mA	2000 µF	90%	JTL3048S12
	15.0 V	2.00 A	50 mA	702 mA	2000 µF	91%	JTL3048S15
	±5.0 V	±3.00 A	50 mA	727 mA	±3000 µF	88%	JTL3048D05
	±12.0 V	±1.25 A	50 mA	727 mA	±1300 µF	88%	JTL3048D12
	±15.0 V	±1.00 A	50 mA	727 mA	±1300 µF	88%	JTL3048D15
	3.3 V, ±12.0 V	5.00 A, ±0.42 A	50 mA	644 mA	15000, ±220 µF	88%	JTL3048T0312
	3.3 V, ±15.0 V	5.00 A, ±0.33 A	50 mA	640 mA	15000, ±220 µF	88%	JTL3048T0315
	5.0 V, ±12.0 V	4.00 A, ±0.42 A	50 mA	712 mA	8000, ±220 µF	90%	JTL3048T0512
5.0 V, ±15.0 V	4.00 A, ±0.33 A	50 mA	708 mA	8000, ±220 µF	90%	JTL3048T0515	

Notes

- Input current specified at nominal 24 V or 48 V input.
- 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%.
- Measured with 1 µF ceramic capacitor across output rails.

Mechanical Details

Weight: 0.07 lbs (30 g) approx



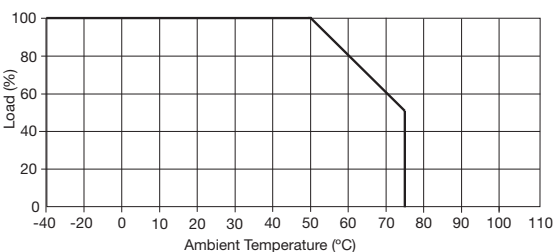
PIN CONNECTIONS			
Pin	Single	Dual	Triple
1	+Vin	+Vin	+Vin
2	-Vin	-Vin	-Vin
3	CTRL	CTRL	CTRL
4	+Vout	+Vout	+Vout 2
5	Com	Com	-Vout 3
6	Trim	-Vout	Com
7			+Vout 1

Notes

- All dimensions are in inches (mm).
- Pin diameter: 0.04 ±0.002 (1.0 ±0.05)
- Pin pitch tolerance: ±0.014 (±0.35)
- Case tolerance: ±0.02 (±0.5)

Application Notes

Derating Curve



Remote On/Off Control

- Output On >3.0 VDC or open circuit
- Output Off <1.2 VDC or short circuit pins 2 & 3