

JTH Series



- 4:1 Input Range
- 1500 VDC Isolation
- Efficiency up to 86%
- -40 °C to +100 °C Operating Temperature
- UL Approved
- Optional Remote On/Off
- Single & Dual Outputs
- 3 Year Warranty

Specification

Input

Input Voltage Range	• 24 V (9-36 VDC) • 48 V (18-72 VDC)
Input Current	• See table
Input Filter	• Pi network
Input Reflected Ripple Current	• 35 mA rms through 12 μH inductor
Input Surge	• 24 V models 40 VDC for 100 ms • 48 V models 80 VDC for 100 ms
Undervoltage Lockout	• 24 V models ON 8.6 V, OFF 8 VDC typical • 48 V models ON 16.0 V, OFF 14 V typical

Output

Output Voltage	• See table
Minimum Load	• No minimum load required
Line Regulation	• $\pm 0.5\%$
Load Regulation	• $\pm 0.5\%$ 10-100% load, • $\pm 1.0\%$ 10% load
Cross Regulation	• $\pm 5\%$ on dual output models (see note 3)
Setpoint Accuracy	• $\pm 1\%$
Start Up Delay	• <10 ms
Start Up Rise Time	• <20 ms
Ripple & Noise	• 75 mV pk-pk 20 MHz bandwidth
Transient Response	• 3% max deviation, recovery to within 1% in 200 μs for 25% load change
Temperature Coefficient	• 0.02%/°C
Overvoltage Protection	• None
Overcurrent Protection	• 140% typical of full load at nominal input
Short Circuit Protection	• Trip & restart (hiccup mode), auto recovery
Remote On/Off	• Optional (see application note)
Maximum Capacitive Load	• See table

General

Efficiency	• See table
Isolation	• 1500 VDC Input to Output • 1000 VDC Input to Case • 1000 VDC Output to Case
Isolation Resistance	• $10^9 \Omega$
Isolation Capacitance	• 1200 pF typical
Switching Frequency	• 300 kHz typical
Power Density	• 18.75 W/in³
MTBF	• >1.21 Mhrs to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	• -40 °C to +100 °C, derate from 100% load at +60 °C to 0% load at +100 °C
Case Temperature	• 100 °C max
Cooling	• Convection-cooled
Operating Humidity	• Up to 95% RH, non-condensing
Storage Temperature	• -40 °C to +125 °C

EMC

Emissions	• EN55022 class A conducted & radiated with external components, see application note
ESD Immunity	• EN61000-4-2, 8 kV air discharge Perf Criteria A, 4 kV contact discharge Perf Criteria A
EFT/Burst Surge	• EN61000-4-4, level 1 Perf Criteria A* • EN61000-4-5, installation class 1, Perf Criteria A*
Conducted Immunity	• EN61000-4-6, 3 Vrms Perf Criteria A
Magnetic Field	• EN61000-4-8, 1 A/m Perf Criteria A

Safety

Safety Approvals	• UL60950-1, CAN/CSA C22.2 No.60950-1, UL62368-1
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*External input capacitor required 220 μ F/100 V

Models and Ratings

JTH15 XP

Input Voltage Range	Output Voltage	Output Current	Input Current ⁽¹⁾		Efficiency	Max. Capacitive Load	Model Number ⁽²⁾
			No Load	Full Load			
9-36 VDC	3.3 V	3000 mA	25 mA	515 mA	80%	3300 μ F	JTH1524S3V3
	5.0 V	3000 mA	25 mA	753 mA	83%	3300 μ F	JTH1524S05
	12.0 V	1250 mA	25 mA	735 mA	85%	680 μ F	JTH1524S12
	15.0 V	1000 mA	25 mA	726 mA	86%	470 μ F	JTH1524S15
	± 5.0 V	± 1500 mA	25 mA	753 mA	83%	± 2200 μ F	JTH1524D05
	± 12.0 V	± 625 mA	25 mA	735 mA	85%	± 470 μ F	JTH1524D12
	± 15.0 V	± 500 mA	25 mA	726 mA	86%	± 330 μ F	JTH1524D15
18-72 VDC	3.3 V	3000 mA	20 mA	257 mA	80%	3300 μ F	JTH1548S3V3
	5.0 V	3000 mA	20 mA	376 mA	83%	3300 μ F	JTH1548S05
	12.0 V	1250 mA	20 mA	367 mA	85%	680 μ F	JTH1548S12
	15.0 V	1000 mA	20 mA	363 mA	86%	470 μ F	JTH1548S15
	± 5.0 V	± 1500 mA	20 mA	376 mA	83%	± 2200 μ F	JTH1548D05
	± 12.0 V	± 625 mA	20 mA	367 mA	85%	± 470 μ F	JTH1548D12
	± 15.0 V	± 500 mA	20 mA	363 mA	86%	± 330 μ F	JTH1548D15

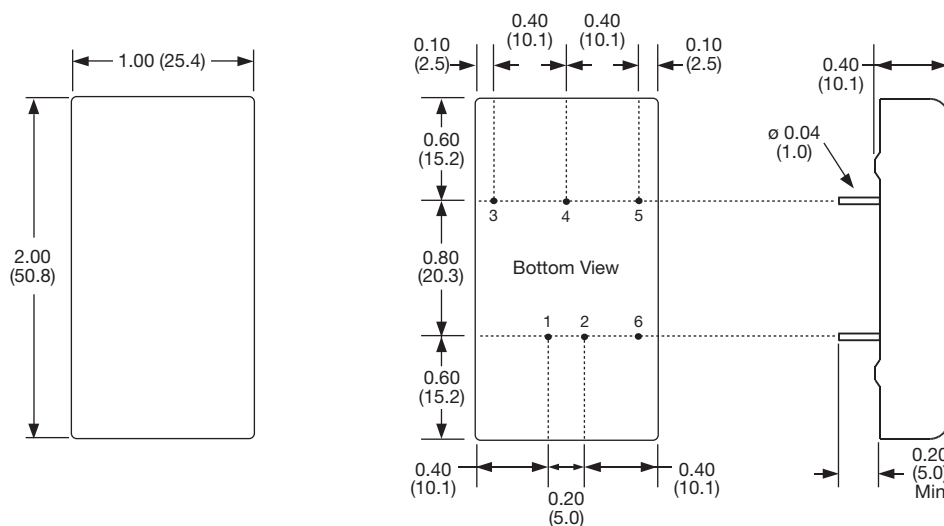
Notes

1. Measured at nominal input voltage.

2. For optional Remote On/Off, add suffix '-R' to model number.

3. Cross regulations is $\pm 5\%$ when one output is at 100% and the other is varied between 25% and 100%.

Mechanical Details



PIN CONNECTIONS		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	No pin	Common
5	-Vout	-Vout
6*	ROF*	ROF*

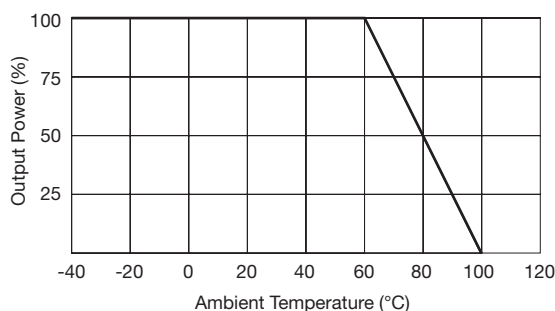
* Pin 6 only present with optional Remote On/Off

Notes

- All dimensions are in inches (mm).
- Weight: 0.07 lbs (30 g)
- Pin diameter: 0.04 $\pm$ 0.002 (1.0 $\pm$ 0.05)
- Pin pitch tolerance: $\pm$ 0.014 ($\pm$ 0.35)
- Case tolerance: $\pm$ 0.02 ($\pm$ 0.5)

Application Notes

Derating Curve



Optional Remote On/Off

On = +2.5 to +5.5 VDC on pin 6 WRT pin 2 or open circuit
Off = -0.7 to +0.8 VDC on pin 6 WRT pin 2 or short circuit pin 2 & 6

Input current is typically 2.5 mA when output is remotely switched off.

Input Filter

