15 Watts
JTH Series



- 4:1 Input Range
- 1500 VDC Isolation
- Efficiency up to 86%
- –40 °C to +100 °C Operating Temperature
- 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	• ±0.5%
Load Regulation	• ±0.5% 10-100% load, ±1.0% 10% load
Cross Regulation	• ±5% on dual output models (see note 3)
Setpoint Accuracy	• ±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/in^3
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	• EN61000-4-4, level 1 Perf Criteria A*
Surge	• 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

*External input capacitor required 220 µF/100 V

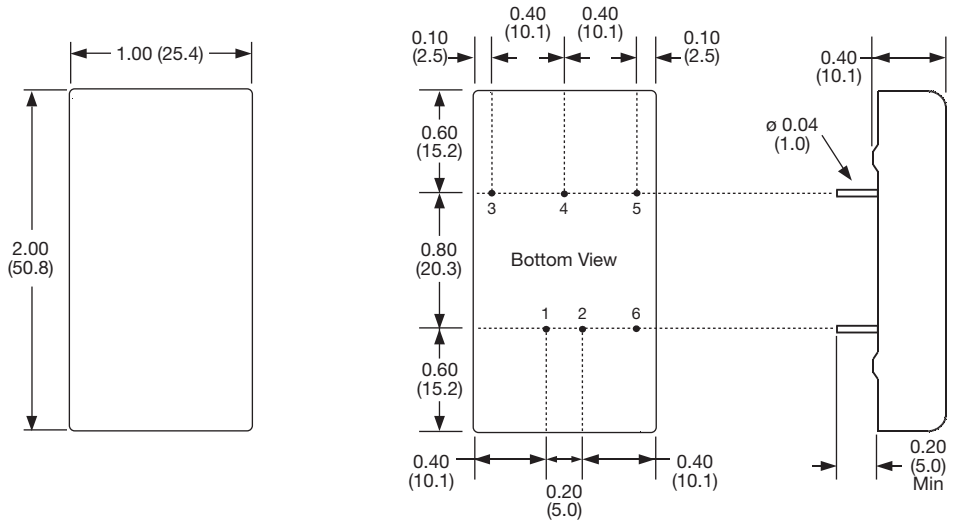
Models and Ratings

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 µF	JTH1524S3V3
	5.0 V	3000 mA	25 mA	753 mA	83%	3300 µF	JTH1524S05
	12.0 V	1250 mA	25 mA	735 mA	85%	680 µF	JTH1524S12
	15.0 V	1000 mA	25 mA	726 mA	86%	470 µF	JTH1524S15
	±5.0 V	±1500 mA	25 mA	753 mA	83%	±2200 µF	JTH1524D05
	±12.0 V	±625 mA	25 mA	735 mA	85%	±470 µF	JTH1524D12
	±15.0 V	±500 mA	25 mA	726 mA	86%	±330 µF	JTH1524D15
18-72 VDC	3.3 V	3000 mA	20 mA	257 mA	80%	3300 µF	JTH1548S3V3
	5.0 V	3000 mA	20 mA	376 mA	83%	3300 µF	JTH1548S05
	12.0 V	1250 mA	20 mA	367 mA	85%	680 µF	JTH1548S12
	15.0 V	1000 mA	20 mA	363 mA	86%	470 µF	JTH1548S15
	±5.0 V	±1500 mA	20 mA	376 mA	83%	±2200 µF	JTH1548D05
	±12.0 V	±625 mA	20 mA	367 mA	85%	±470 µF	JTH1548D12
	±15.0 V	±500 mA	20 mA	363 mA	86%	±330 µF	JTH1548D15

Notes

1. Measured at nominal input voltage.
2. For optional Remote On/Off. add suffix '-R' to model number.
3. Cross regulations is ±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*

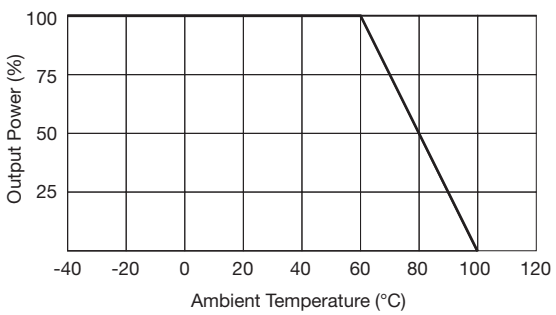
* Pin 6 only present with optional Remote On/Off

Notes

1. All dimensions are in inches (mm).
2. Weight: 0.07 lbs (30 g)
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



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

