JTH15 series

XP Power

15W

DC-DC converters

The JTH15 series is housed in a 50.8 x 25.4 x 10.1 mm (2" x 1" x 0.4") metal case. Featuring a 4:1 input voltage range of 9 to 36VDC or 18 to 72VDC with both single and dual outputs, singles have 3.3, 5, 12 or 15VDC with duals having ±5, ±12 or ±15VDC.

The JTH15 has regulated outputs and provides 1.5kVDC isolation between input and output. Operating temperature range is from -40°C to +100°C, with derating above +60°C. Remote on/off (suffx -R) is optional.

Features

- Regulated single outputs 3.3 to 15VDC
- Regulated dual outputs ±5, ±12 & ±15VDC
- 4:1 input range
- 50.8 x 25.4mm (2" x 1") footprint, 10.1mm profile
- 1.5kVDC isolation
- Optional remote On/Off
- -40°C to +100°C operating temperature
- Full power to +60°C
- 3 year warranty

Applications

Autonomous equipment

Industrial

Technology

Instrumentation

Robotics

Dimensions

50.8 x 25.4 x 10.1mm (2.00" x 1.00" x 0.4")

Documentation

For further information click the link or scan the code

→ xppower.com

Models & ratings

Model number[2]	Input voltage	Output voltage	Output current	Efficiency	Input current[1]		Maximum capacitive load
					No load	Full load	
JTH1524S3V3	9-36VDC	3.3VDC	3000mA	80%	25mA	515mA	3300µF
JTH1524S05		5.0VDC	3000mA	83%	25mA	753mA	3300µF
JTH1524S12		12.0VDC	1250mA	85%	25mA	735mA	680µF
JTH1524S15		15.0VDC	1000mA	86%	25mA	726mA	470µF
JTH1524D05[3]		±5.0 VDC	±1500mA	83%	25mA	753mA	±2200µF
JTH1524D12[3]		±12.0 VDC	±625mA	85%	25mA	735mA	±470µF
JTH1524D15[3]		±15.0VDC	±500mA	86%	25mA	726mA	±330µF

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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%.

Models & ratings

Model number[2]	Input voltage	Output voltage	Output current	Efficiency	Input current[1]		Maximum capacitive load
					No load	Full load	
JTH1548S3V3	18-72VDC	3.3VDC	4.000A	86%	15mA	647mA	1000µF
JTH1548S05		5.0VDC	3.000A	87%	15mA	727mA	1000µF
JTH1548S12		12.0VDC	1.300A	88%	15mA	747mA	330µF
JTH1548S15		15.0VDC	1.000A	89%	15mA	710mA	220µF
JTH1548D05[3]		±5.0 VDC	±1.500A	85%	15mA	744mA	±470µF
JTH1548D12[3]		±12.0 VDC	±0.625A	88%	15mA	718mA	±220µF
JTH1548D15[3]		±15.0VDC	±0.500A	89%	10mA	710mA	±100µF

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%.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage range	9		36	VDC	24VDC nominal
	18		72		48VDC nominal
Input current	See models & ratings table				
Input Filter	Pi network				
Input reflected ripple current		35		mA rms	Through 12µH inductor
Input surge		40		VDC	24VDC models (for 100ms)
		80			48VDC models (for 100ms)
Undervoltage lockout	On: 8.6		Off: 8	VDC	24VDC models
	On: 16		Off: 14		48VDC models

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	See models & ratings table				
Minimum load	0			%	No minimum load required
Line regulation		±0.5		%	
Load regulation		±0.5		%	10-100% load
		±1.0			10% load
Cross regulation		±5		%	Dual outputs. Cross regulation is ±5% when one output is at 100% and the other is varied between 25% and 100%.
Setpoint accuracy		±1		%	
Start up delay		<10		ms	
Start up rise time		<20		ms	
Ripple & noise		75		mV pk-pk	20MHz bandwidth
Transient response			3	%	Deviation, recovery to within 1% in 200µs for 25% load change
Short circuit protection	Trip & restart (hiccup mode), auto recovery				
Temperature coefficient		±0.02		%/ °C	
Overload protection	None				
Overcurrent protection		140		%	Of full load at nominal input
Remote on/off	See application note				
Maximum capacitive load	See models and ratings table				

JTH15 series

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency	See models & ratings table				
Isolation: input to output		1500		VDC	
Isolation: input to case		1000		VDC	
Isolation: output to case		1000		VDC	
Isolation capacitance		1200		pF	
Switching frequency		300		kHz	
Power density		1.14 (18.75)		W/cm^3 (W/in^3)	
Mean time between failure		>1.21		khrs	MIL-HDBK-217F, +25°C GB

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-40		+100	°C	Derate from 100% load at +60°C to 0% load at +100°C
Storage temperature	-40		+125	°C	
Case temperature			+105	°C	
Cooling	Convection cooled				
Humidity			95	%	Non condensing

Safety approvals

Safety agency	Standard	Notes & conditions
UL	UL60950-1, CAN/CSA C22.2 No.60950-1, UL62368-1	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Emissions - EMC

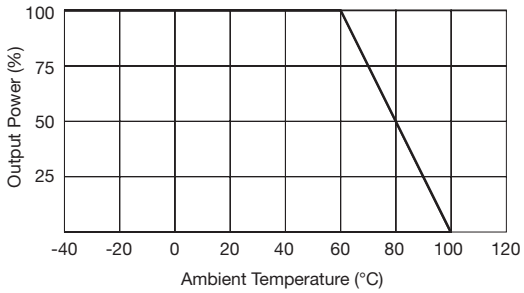
Phenomenon	Standard	Test level	Notes & conditions
Conducted	EN55022	Class A	With external components, see application note
Radiated	EN55022	Class A	

Immunity - EMC

Phenomenon	Standard	Test level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2		A	6kV contact discharge, 8kV air discharge
EFT/Burst	EN61000-4-4	1	A	External input capacitor required, 220µF/100V.
Surge	EN61000-4-5	1	A	External input capacitor required, 220µF/100V.
Conducted immunity	EN61000-4-6	3Vrms	A	
Magnetic fields	EN61000-4-8	1A/m	A	

Application notes

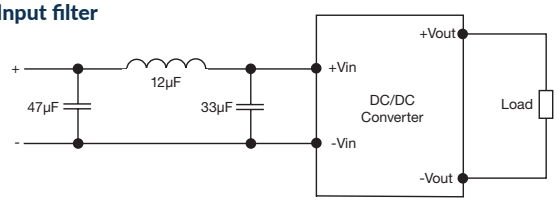
Derating curve



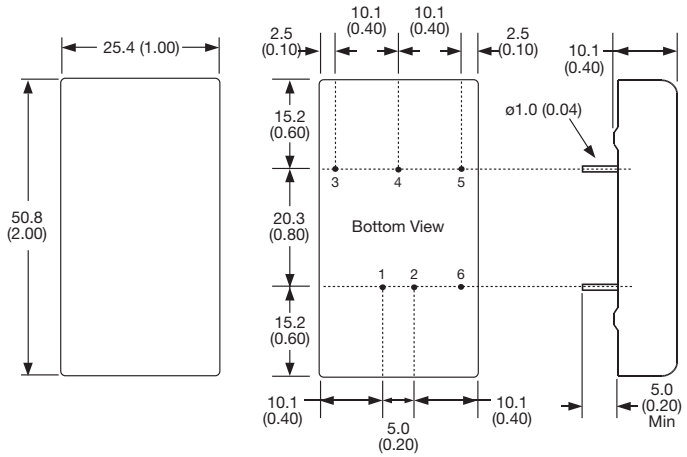
Optional remote on/off

On = +2.5 to +5.5VDC on pin 6 WRT pin 2 or open circuit
Off = -0.7 to +0.8VDC on pin 6 WRT pin 2 or short circuit pin 2 & 6
Input current is typically 2.5mA when output is remotely switched off.

Input filter



Mechanical details



Pin connections		
Pin	**Single**	**Dual**
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	No pin	Common
5	-Vout	-Vout
6	Remote On/Off	Remote On/Off

Pin 6 only present with optional Remote On/Off

Notes:

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