

15W Convection cooled

DC-DC converters

The JTF15 series is housed in a DIP24 metal case. Featuring a 4:1 input voltage range of 9 to 36VDC or 18 to 75VDC with both single and dual outputs, singles have 3.3, 5, 12 or 15VDC with duals having ± 5 , ± 12 or ± 15 VDC. Single output models are adjustable $\pm 10\%$ with a trim resistor.

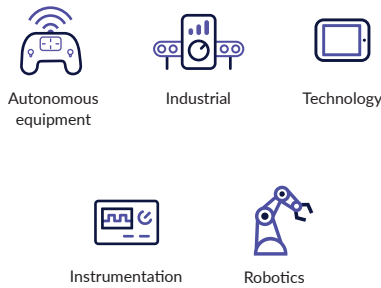


The JTF15 provides 1.6kVDC isolation between input and output. Remote on/off is standard. Operating temperature range is from -40°C to $+85^{\circ}\text{C}$, with derating above $+60^{\circ}\text{C}$.

Features

- ▶ Regulated single & dual outputs
- ▶ 4:1 input range
- ▶ Single outputs 3.3 to 15VDC
- ▶ Dual outputs ± 5.0 to ± 15 VDC
- ▶ DIP24 metal case
- ▶ 1.6kVDC isolation
- ▶ Remote On/Off
- ▶ -40°C to $+85^{\circ}\text{C}$ operating temperature
- ▶ Full power to $+60^{\circ}\text{C}$
- ▶ 3 year warranty

Applications



Dimensions

31.75 x 20.3 x 10.16mm (1.25" x 0.8" x 0.4")

Models & ratings

Model number	Input voltage	Output voltage	Output current	Efficiency	Input current ⁽¹⁾		Maximum capacitive load
					No load	Full load	
JTF1524S3V3	9-36VDC	3.3VDC	4.000A	87%	10mA	647mA	4700 μF
JTF1524S05		5.1VDC	3.000A	89%		732mA	3300 μF
JTF1524S12		12.0VDC	1.250A	90%		710mA	600 μF
JTF1524S15		15.0VDC	1.000A	90%		710mA	400 μF
JTF1524D05		± 5.0 VDC	± 1.500 A	86%		744mA	$\pm 1500\mu\text{F}$
JTF1524D12		± 12.0 VDC	± 0.625 A	89%		718mA	$\pm 288\mu\text{F}$
JTF1524D15		± 15.0 VDC	± 0.500 A	90%		710mA	$\pm 200\mu\text{F}$

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Notes:

1. Input current measured at nominal 24V and 48V input.
2. When one output is set to 100% load, and the other varies between 25% and 100% load.
3. Measured with $1\mu\text{F}$ ceramic capacitor and $10\mu\text{F}$ tantalum capacitor across output rails.

Models & ratings

Model number	Input voltage	Output voltage	Output current	Efficiency	Input current ⁽¹⁾		Maximum capacitive load
					No load	Full load	
JTF1548S3V3	18-75VDC	3.3VDC	4.000A	86%	5mA	327 mA	1000µF
JTF1548S05		5.1VDC	3.000A	88%		370 mA	1000µF
JTF1548S12		12.0VDC	1.300A	90%		355 mA	330µF
JTF1548S15		15.0VDC	1.000A	89%		359 mA	220µF
JTF1548D05		±5.0VDC	±1.500A	86%		372 mA	±470µF
JTF1548D12		±12.0VDC	±0.625A	89%		359mA	±220µF
JTF1548D15		±15.0VDC	±0.500A	90%		355mA	±100µF

Notes:

- Input current measured at nominal 24V and 48V input.
- When one output is set to 100% load, and the other varies between 25% and 100% load.
- Measured with 1µF ceramic capacitor and 10µF tantalum capacitor across output rails.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage range	9		36	VDC	24VDC nominal
	18		75		48VDC nominal
Input current	See models & ratings table				
Input Filter	Pi network				
Input reflected ripple current		20		mA/pk-pk	12µH inductor and 47µF capacitor, 5Hz to 20MHz
Input surge		50		VDC	24VDC models (for 100ms)
		100			48VDC models (for 100ms)

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	See models & ratings table				
Minimum load	0			%	No minimum load required
Initial set accuracy			±1.0	%	
Line regulation			±0.2	%	Single output
			±0.5		Dual outputs
Load regulation			±0.5	%	Single output
			±1.0		Dual outputs
Transient response			<3	%	Deviation, recovery to within 1% in 250µs for a 25% load change
Start up time		30		ms	
Ripple & noise		60		mV pk-pk	20MHz bandwidth, measured with 1µF ceramic capacitor across output rails.
Short circuit protection	Trip & restart (hiccup mode), auto recovery				
Temperature coefficient		±0.02		%/°C	
Overload protection		150		%	Full load
Remote on/off	On = 3 to 12VDC or open circuit				
	Off = <1.2VDC or short circuit pins 1, 2 & 3				
Overvoltage protection		3.9		VDC	3.3VDC models
		6.2			5VDC models
		15			12VDC models
		18			15VDC models
		±6.2			±5VDC models
		±15			±12VDC models
	±18		±15VDC models		
Maximum capacitive load	See models and ratings table				

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency	See models & ratings table				
Isolation: input to output		1600		VDC	
Isolation: input to case		1600		VDC	
Isolation: output to case		1600		VDC	
Isolation capacitance			1200	pF	
Switching frequency		330		kHz	
Power density		2.29 (37.5)		W/cm ³ (W/in ³)	
Mean time between failure		>1		Mhrs	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 no load at +100°C (see derating curve)
Storage temperature	-40		+125	°C	
Case temperature			+105	°C	
Cooling	Natural convection				
Humidity		90		%	Non-condensing

Safety approvals

Safety agency	Standard	Notes & conditions
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Emissions - EMC

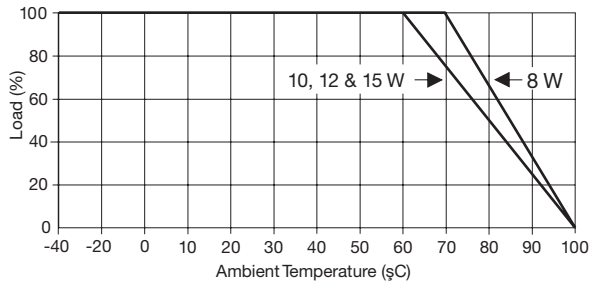
Phenomenon	Standard	Test level	Notes & conditions
Conducted	EN55032	A	See application notes

Immunity - EMC

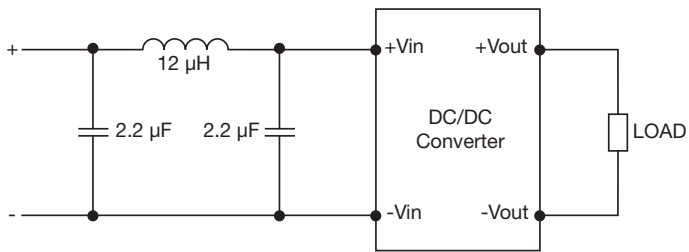
Phenomenon	Standard	Test level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2	3	B	
Radiated immunity	EN61000-4-3	10V/m	A	
EFT/Burst	EN61000-4-4	3	B	External input capacitor required, 330µF/100V
Surge	EN61000-4-5	2	B	External input capacitor required, 330µF/100V
Conducted immunity	EN61000-4-6	10Vrms	A	External input capacitor required, 330µF/100V
Magnetic fields	EN61000-4-8	1A/m	A	

Application notes

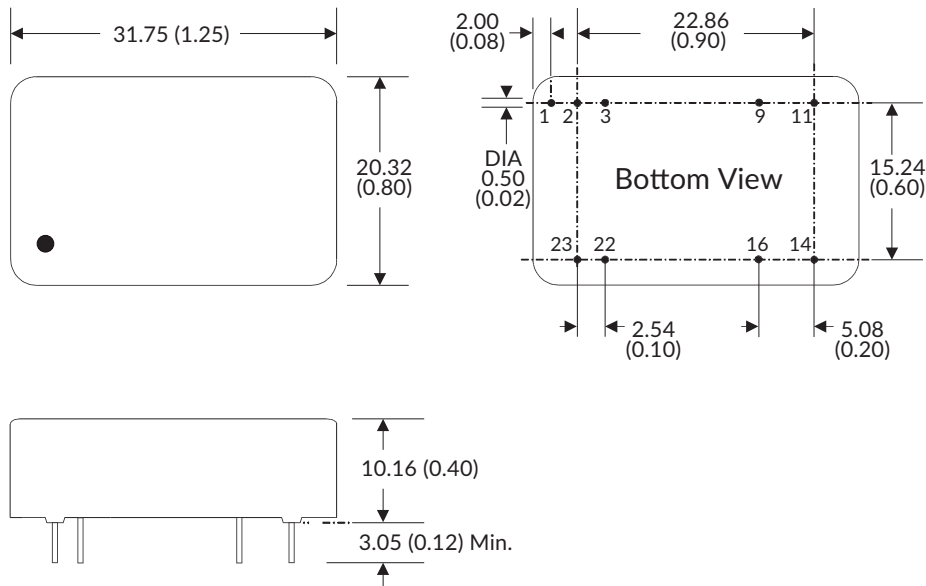
Derating curve



Input filter



Mechanical details



Pin connections		
Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-Vin	-Vin
3	-Vin	-Vin
9	No Pin	Common
11	Not Connected	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

Notes:

- All dimensions are in mm (inches)
- Weight: 20g (0.04lbs) approx.
- Pin diameter: 1.0 ±0.05 (0.04 ±0.002)
- Pin pitch tolerance: ±0.35 (±0.014)
- Case tolerance: ±0.5 (±0.02)
- Package: 24 pin DIL nickel-coated copper.

Specifications subject to change without notice.