

15 Watts

- High power density
- 4:1 Input range
- 1 x 1" Package
- Single and dual outputs
- 1600VDC Isolation
- Remote on/off
- 5 Year warranty



The HTF15 series of power dense DC/DC converters come in both single and dual outputs. Inputs are available in nominal 24 & 48V with 4:1 range and outputs from 3.3 to 15V single and dual. Remote on/off is available as an option. The units operate from -40 to +85°C. High volumes are held in stock for the popular models. All models have a FIDUS 5 year warranty.

Dimensions:

1.00 x 1.00 x 0.40" (25.4 x 25.4 x 10.16mm)

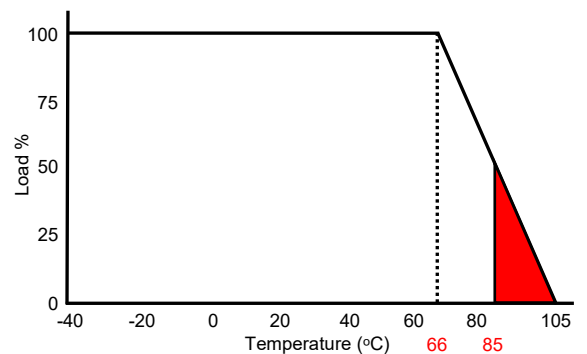
Models & Ratings

Model Number	Input Voltage	Output Voltage	Output Current	Input Current		Maximum Capacitive Load	Efficiency
				No Load	Full Load		
HTF152403	9-36V	3.3V	4000mA	15mA	647mA	1000uF	86%
HTF152405 ⁽¹⁾		5V	3000mA	15mA	727mA	1000uF	87%
HTF152412		12V	1300mA	15mA	747mA	330uF	88%
HTF152415 ⁽¹⁾		15V	1000mA	15mA	710mA	220uF	89%
HTF152405D		±5V	±1500mA	15mA	744mA	±470uF	85%
HTF152412D		±12V	±625mA	15mA	718mA	±220uF	88%
HTF152415D		±15V	±500mA	15mA	710mA	±100uF	89%
HTF154803	18-75V	3.3V	4000mA	10mA	331mA	1000uF	84%
HTF154805		5V	3000mA	10mA	368mA	1000uF	86%
HTF154812		12V	1300mA	10mA	378mA	330uF	87%
HTF154815		15V	1000mA	10mA	360mA	220uF	87%
HTF154805D		±5V	±1500mA	10mA	376mA	±470uF	84%
HTF154812D		±12V	±625mA	10mA	363mA	±220uF	87%
HTF154815D		±15V	±500mA	10mA	359mA	±100uF	88%

Notes

1. High stock items
2. For Remote on/off add 'C' to the model number
3. Under no load conditions the unit may not meet all specifications
4. Do not operate continuously in the red area of the derating curve

Derating curve



Input	
Parameter	Rating
Input voltage range	See table
Input reflected ripple current	20mA pk-pk through 12uH inductor
Input surge (100mS max)	24V Models 50VDC Max. 48V Models 100VDC Max.
Input filter	Pi type

Output

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Output voltage	3.3		15	VDC	See Model & Ratings table
Set point accuracy			±1	%	
Line regulation			±0.2	%	Low line to High line
			±0.5		Dual outputs
Load regulation			±0.5	%	Single outputs. 0 to 100% load change
			±1		Dual outputs. 0 to 100% load change
Cross regulation			±5	%	On dual output models when one load is varied by 25 to 100% and the other is 100% load.
Ripple & Noise			100	mV pk-pk	All models measured with 1uF ceramic capacitor. 20 MHz bandwidth
Overvoltage protection	3.3V output 3.9V. 12V output 15V. ±5V output ±6.2V. ±15V output ±18V	5V output 6.2V. 15V output 18V. ±12V output ±15V.		VDC	
Transient response			±3	% Deviation	For a 25% load change, recovery to within 3% within 300uS typically.
Short circuit protection					Continuous with automatic recovery
Maximum capacitive load					See Model and Ratings table
Remote on/off	Open circuit or high impedance ON. 3 - 6mA via a 1K resistor OFF. See application notes.				
Output trim	Trim 10% up on outputs 3.3, 5, 12,15V use 8,10, 20, 20K respectively between pins 5 & 6. Trim 10% down on outputs 3.3, 5, 12, 15 V use 12, 5, 7, 6K respectively between pins 4 & 5.				

General

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	84		89	%	See Model & Ratings table
Isolation			1600	VDC	Input to output
Isolation resistance	1000			M Ohm	
Isolation capacitance			1200	pF	
Switching frequency		375		KHz	
Power density			37.5	W/In ³	
MTBF		>560		KHrs	As per MIL-HDBK-217F, 25°C GB

Environmental

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating temperature	-40		85	°C	Max. 66°C at 100% load. 85°C at 50% load
Storage temperature	-55		125	°C	
Case temperature			105	°C	
Cooling					Convection cooled
Humidity			95	% RH	Non-condensing

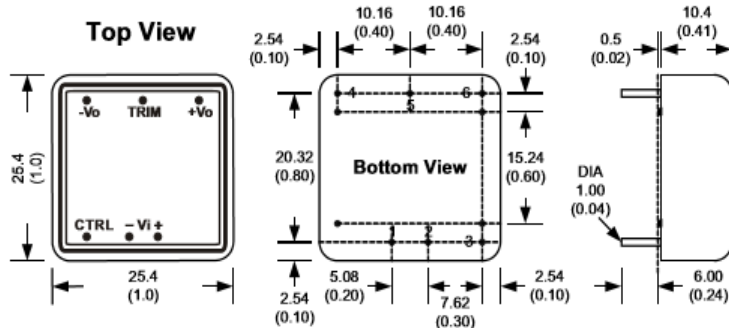
EMC: Emissions

	Standard	Test level	Notes & Conditions
Conducted	EN55022	Class A	See application notes
Radiated	EN55022	Class A	

EMC: Immunity

	Standard	Test level	Criteria	Notes & Conditions
ESD	EN61000-4-2	3	A	8kV air discharge, 6kV contact discharge
Radiated	EN61000-4-3	3	A	80~1000 MHz, 10V/m, 80% AM (1kHz)
EFT/Burst	EN61000-4-4	3	A	External input capacitor required 220uF/100V. Power line : 2kV
Surges	EN61000-4-5	3	A	External input capacitor required 220uF/100V. 1.2/50 µs Open Circuit Voltage, 8/20 µs Short Circuit Current, DC Port, Line to line : 1kV
Conducted	EN61000-4-6	3	A	0.15 ~ 80 MHz, 10Vrms, 80% AM (1kHz)
Magnetic fields	EN61000-4-8	1A/m	A	50Hz

Mechanical Details



Pin Connections		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	CTRL	CTRL
4	+Vout	+Vout
5	Trim	0V
6	-Vout	-Vout

Notes

1. All dimensions shown in millimetres (inches)
2. Pin diameter 1.0 ±0.05 (0.04 ±0.002)
3. Case tolerance ±0.5 (±0.002)

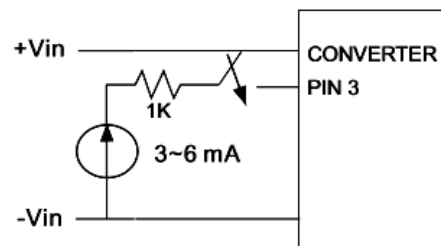
Physical

Parameter	Rating
Case material	Nickel coated copper
Pin material	1.0mm Brass solder coated
Potting material	Epoxy (UL94V-0)
Weight	18.1g
Dimensions	1.00 x 1.00 x 0.40"
Soldering temperature	1.5mm from case, 10s and 260°C max.

Application notes

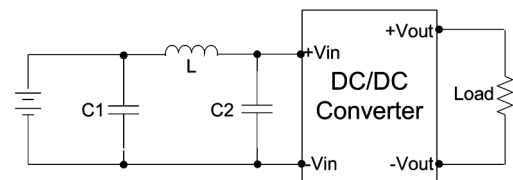
Remote ON/OFF

The HTF15 series output can be turned on and off using the remote on/off function. If Pin 3 is left open circuit or high impedance then the unit is ON. 3 - 6mA of idle current via a 1K resistor to turn OFF.



EMI Filter

The input filter components can be fitted to help meet conducted emission requirements for the system. They should be mounted as close as possible to the module. Lead lengths should be minimized and where possible avoid running input and output tracks under the module as part of good design practice for best EMC performance. If the module is embedded in a system running from a AC/DC converter, this will have its own additional immunity protection and EMI filtering that will impact the overall system EMI performance.



C1	L	C2
2.2uF/100V	12uH	2.2uF/100V