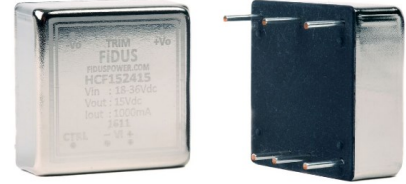


15 Watts

- High power density
- 2:1 Input range
- 1 x 1" Package
- Single and dual outputs
- 1600VDC Isolation
- Remote on/off
- 3 Year warranty



The HCF15 series of high power dense DC/DC converters come in both single and dual outputs. Inputs are available in 12, 24 & 48V versions with 2:1 range and outputs from 3.3 to 15V single and dual. The units operate from -40 to +85°C. High volumes are held in stock for the popular models. All models have a FiDUS 3 year warranty.

Dimensions:

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

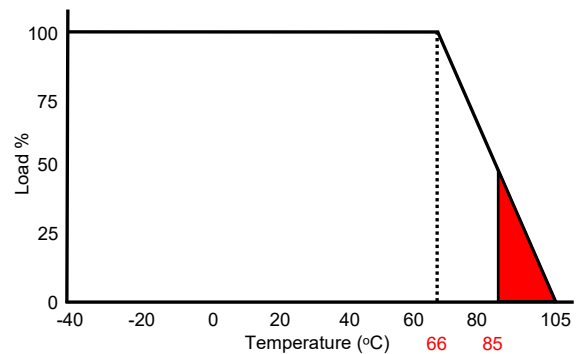
Models & Ratings

Model Number	Input Voltage	Output Voltage	Output Current	Input Current		Maximum Capacitive Load	Efficiency
				No Load	Full Load		
HCF151203	9-18V	3.3V	4000mA	20mA	1310mA	1000uF	85%
HCF151205		5V	3000mA	20mA	1471mA	1000uF	86%
HCF151212		12V	1300mA	20mA	1494mA	330uF	88%
HCF151215		15V	1000mA	20mA	1420mA	220uF	89%
HCF151205D		±5V	±1500mA	20mA	1488mA	±470uF	85%
HCF151212D		±12V	±625mA	20mA	1420mA	±220uF	89%
HCF151215D		±15V	±500mA	20mA	1437mA	±100uF	89%
HCF152403	18-36V	3.3V	4000mA	15mA	647mA	1000uF	86%
HCF152405 ⁽¹⁾		5V	3000mA	15mA	727mA	1000uF	87%
HCF152412		12V	1300mA	15mA	747mA	330uF	88%
HCF152415 ⁽¹⁾		15V	1000mA	15mA	710mA	220uF	89%
HCF152405D		±5V	±1500mA	15mA	744mA	±470uF	85%
HCF152412D		±12V	±625mA	15mA	718mA	±220uF	88%
HCF152415D		±15V	±500mA	15mA	710mA	±100uF	89%
HCF154803	36-75V	3.3V	4000mA	10mA	327mA	1000uF	85%
HCF154805		5V	3000mA	10mA	368mA	1000uF	86%
HCF154812		12V	1300mA	10mA	374mA	330uF	88%
HCF154815		15V	1000mA	10mA	359mA	220uF	88%
HCF154805D		±5V	±1500mA	10mA	377mA	±470uF	84%
HCF154812D		±12V	±625mA	10mA	363mA	±220uF	87%
HCF154815D		±15V	±500mA	10mA	359mA	±100uF	88%

Notes

1. High stock items
2. Under no load conditions the unit may not meet all specifications
3. 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)	12V Models 36V DC 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	ON:3 to 12Vdc or open circuit. OFF <1.2Vdc or short circuit pins 2 & 3. Off idle current :5mA typical.				

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
Storage temperature	-55		125	°C	
Case temperature			105	°C	
Cooling					Convection cooled
Humidity			95	% RH	Non-condensing
Temperature coefficient			±0.02	%/°C	

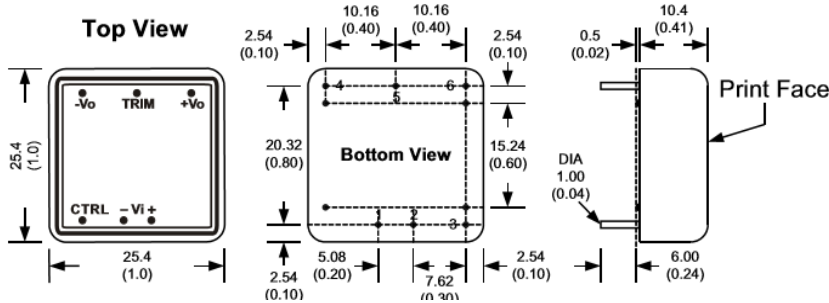
EMC: Emissions

	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	A 220uF/100V capacitor required. Power line : 2kV
Surges	EN61000-4-5	3	A	A 220uF/100V capacitor required. 1.2/50 μs Open Circuit Voltage, 8/20 μs Short Circuit Current, DC Port, Line to line : 1kV
Conducted	EN61000-4-6	10Vrms	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)

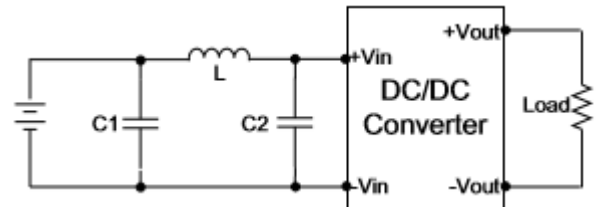
Physical

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

EMI Filter

The input filter components C1, C2 and L 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 an AC/DC converter, this will have its own additional immunity protection and EMI filtering that will impact the overall system EMI performance.



Model number	C1	L	C2
HCF1512XX	1210, 2.2uF/100V	12uH	1210, 2.2uF/100V
HCF1524XX	1210, 2.2uF/100V	12uH	1210, 2.2uF/100V
HCF1548XX	1210, 2.2uF/100V	12uH	1210, 2.2uF/100V