

12 Watts

- High power density
- 4:1 Input range
- DIP24 Industry standard package
- Single and dual outputs
- -40 to +85°C Operation
- Remote on/off
- 3 Year warranty



The GTH12 series of wide input DC/DC converters come in both single and dual outputs in a DIP24 pin package. Inputs are available in 24 & 48V versions with 4:1 range and outputs from 3.3 to 15V single and dual. The units operate from -40 to +85°C. All models have a FIDUS 3 year warranty.

Dimensions:

1.25 x 0.8 x 0.40" (31.8 x 20.3 x 10.2mm)

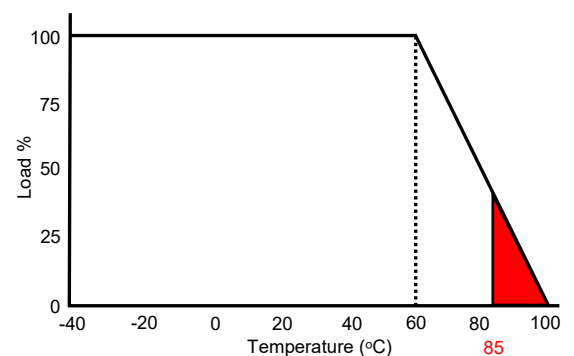
Models & Ratings

Model Number	Input Voltage	Output Voltage	Output Current	Input Current		Maximum Capacitive Load	Efficiency
				No Load	Full Load		
GTH122403	9-36V	3.3V	3500mA	15mA	573mA	2000uF	87%
GTH122405 ⁽¹⁾		5.1V	2400mA	15mA	581mA	2000uF	89%
GTH122412		12V	1000mA	15mA	574mA	430uF	90%
GTH122415		15V	800mA	15mA	574mA	300uF	90%
GTH122405D		±5V	±1200mA	15mA	595mA	±1250uF	87%
GTH122412D		±12V	±500mA	15mA	574mA	±200uF	90%
GTH122415D		±15V	±400mA	15mA	574mA	±120uF	90%
GTH124803	18-75V	3.3V	3500mA	15mA	286mA	2000uF	87%
GTH124805		5.1V	2400mA	15mA	290mA	2000uF	89%
GTH124812		12V	1000mA	15mA	287mA	430uF	90%
GTH124815		15V	800mA	15mA	287mA	300uF	90%
GTH124805D		±5V	±1200mA	15mA	297mA	±1250uF	87%
GTH124812D		±12V	±500mA	15mA	287mA	±200uF	90%
GTH124815D		±15V	±400mA	15mA	287mA	±120uF	90%

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)	24V Models 50V DC 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			±1.2	%	
Line regulation			±0.2	%	Low line to High line
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			85	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	5.1V 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 12 & 3. Off idle current :5mA typical.				

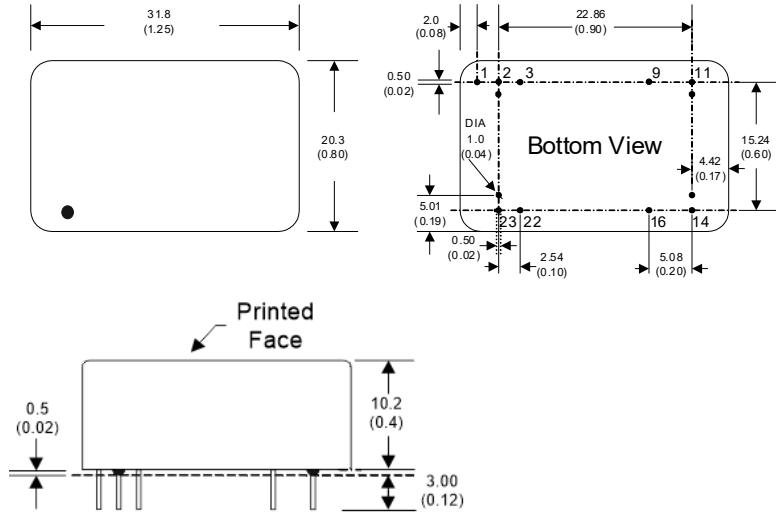
General					
Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	87		90	%	See Model & Ratings table
Isolation			1600	VDC	Input to output
Isolation resistance	1000			M Ohm	
Isolation capacitance			1500	pF	
Switching frequency		270		KHz	
Power density			30	W/In ³	
MTBF		>1		MHrs	As per MIL-HDBK-217F, 25°C GB

Environmental					
Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating temperature	-40		85	°C	100% load at 60°C. 40% load at 85°C
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	B	
Radiated	EN61000-4-3	10V/m	A	
EFT/Burst	EN61000-4-4	3	B	Requires 330uF/100V capacitor
Surges	EN61000-4-5	Installation class 2	B	Requires 330uF/100V capacitor
Conducted	EN61000-4-6	10Vrms	A	Requires 330uF/100V capacitor
Magnetic fields	EN61000-4-8	1A/m	A	

Mechanical Details



Pin Connections		
Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-Vin	-Vin
3	-Vin	-Vin
9	N.P	0V
11	N.C	-Vout
14	+Vout	+Vout
16	-Vout	0V
22	+Vin	+Vin
23	+Vin	+Vin

Notes

1. All dimensions shown in millimetres (inches)
2. Pin diameter 0.5 ± 0.05 (0.02 ± 0.002)
3. Case tolerance ± 0.5 (± 0.002)

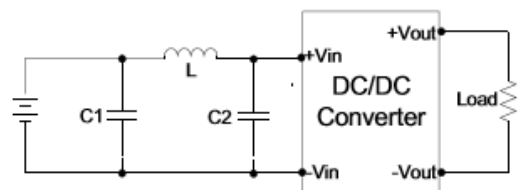
Physical

Parameter	Rating
Case material	Copper with nickel plated
Pin material	0.5mm Brass solder coated
Potting material	Epoxy (UL94V-0)
Weight	18g
Dimensions	1.25 x 0.8 x 0.4"
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 a 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
GTH1224XX	2.2uF, 100V	12uH	2.2uF, 100V
GTH1248XX	2.2uF, 100V	12uH	2.2uF, 100V