

# IM481H Plus <sup>CE</sup> <sup>RoHS</sup>

**HIGH PERFORMANCE  
ULTRA-MINIATURE  
MICROSTEPPING DRIVER**



## FEATURES

- Very Low Cost
- Ultra Miniature  
(1.1 x 2.7 x 0.175 inches)  
(28 x 69 x 4.4 mm)
- Advanced Hybrid Design
- High Input Voltage  
(+12 to +48 VDC)
- High Output Current  
(1.5 Amps RMS, 2.1 Amps Peak)
- Replaces Mechanical Gearing for  
Smoothness and Positioning
- Up to 51,200 Step/Rev with  
1.8° Motor
- No Minimum Inductance
- 16 Selectable Microstepping  
Resolutions can be Changed  
On-the-Fly
- Automatically Switches  
Between Slow and Fast Decay  
for Unmatched Performance
- Adjustable Automatic Current  
Reduction
- Short Circuit and Over  
Temperature Protection
- Fault Output
- At Full Step Output

## DESCRIPTION

The IM481H PLUS is a high performance, yet low cost microstepping driver that utilizes advanced hybrid technology to greatly reduce size without sacrificing features. The IM481H PLUS is exceptionally small, easy to interface and use, yet powerful enough to handle the most demanding applications.

The IM481H PLUS has 16 built-in microstep resolutions (both binary and decimal). The resolution can be changed at any time without the need to reset the driver. This feature allows the user to rapidly move long distances, yet precisely position the motor at the end of travel without the expense of high performance controllers.

With the development of proprietary and patented circuits, ripple current has been minimized to reduce motor heating common with other designs, allowing the use of low inductance motors to improve high speed performance and system efficiency.

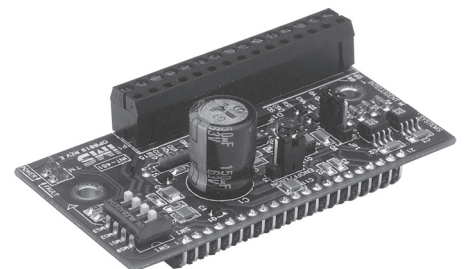
The IM481H PLUS, because of its ultra small size and low cost, can be used to increase accuracy and smoothness in systems using higher step angle motors. In many instances mechanical gearing can be replaced with microstepping, reducing cost and eliminating potential maintenance.

The IM481H PLUS was developed to provide designers with affordable, state-of-the-art technology for the competitive edge needed in today's market.

## OPTIONS

The INT-481 is an optional plug-on interface board which can be used with the IM481H PLUS to facilitate testing, or in situations where panel mounting the IM481H PLUS is preferred. The INT-481 contains extra circuitry which includes +5 VDC supply, opto isolators for step clock, direction, enable and reset, along with extra fault detection circuits, input capacitor, and fault and power LEDs. Wiring is done through a 15 pin screw terminal. A four position dip switch is supplied for microstep resolution selection.

The H-481 is a small, optional heat sink which mounts easily to the IM481H PLUS or the INT-481H/IM481H PLUS combination. Its compact size consumes only 4.3 cubic inches (70.5 cubic cm) of space. All required mounting hardware is included with the heat sink.



INT-481 Interface Board

## ELECTRICAL SPECIFICATIONS

Input Voltage*	.....	+12 to +48 VDC
Output Current (Resistor Selectable)	.....	0.14 to 2.1 Amps Peak (Max 1.5 Amps RMS)
Step Frequency (Max)	.....	2.5 MHz
Steps per Revolution – 1.8° Motor	.....	200, 400, 800, 1000, 1600, 2000, 3200, 5000, 6400, 10000, 12800, 25000, 25600, 36000, 50000, 51200
Protection	.....	Thermal, Phase to Phase, +V to Phase
Current Reduction (Resistor Selectable)	.....	0.5 Seconds After Last Step Input

\*Includes motor back EMF, Power Supply Ripple and High Line.

## PIN ASSIGNMENTS

PIN	FUNCTION	PIN	FUNCTION
1	Phase A	11	Ground
2	Phase /A	12	+V (+12 to +48 VDC)
3	Current Reduction Adjustment	13	Reset
		14	+5 VDC
4	Current Reference	15	Step Clock
5	Current Adjustment	16	Direction
6	Fault In	17	Enable
7	Resolution Select 0	18	On Full Step
8	Resolution Select 1	19	Fault Out
9	Resolution Select 2	20	Phase B
10	Resolution Select 3	21	Phase /B

## TEMPERATURE

Storage ..... -40 to +125° C  
 Rear Mounting Surface (Max)\* ..... -40 to +70° C

\*External heat sink may be required to maintain mounting surface below 85°C.  
 Isolating thermal pad is required when using additional heat sink.

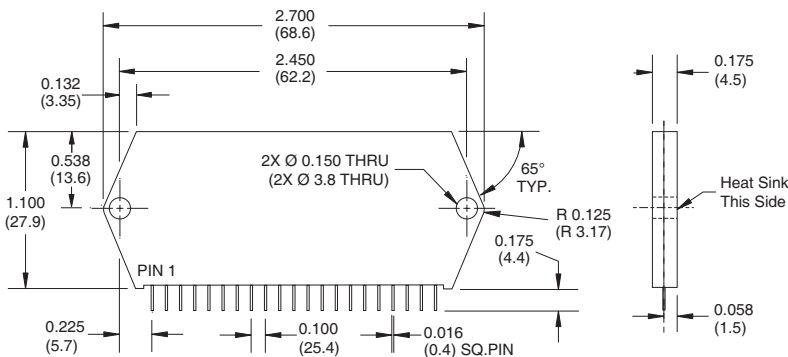
## ORDER INFORMATION

Name	Part Number
Microstepping Driver (Includes Thermal Pad) .....	XIM481H
Isolating Thermal Pad .....	TI-481
Interface Board .....	INT-481
Heat Sink (Includes Mounting Hardware) .....	H-481
21 Pin Right Angle Connector .....	HY481-CN021
Small End Screwdriver .....	SD1

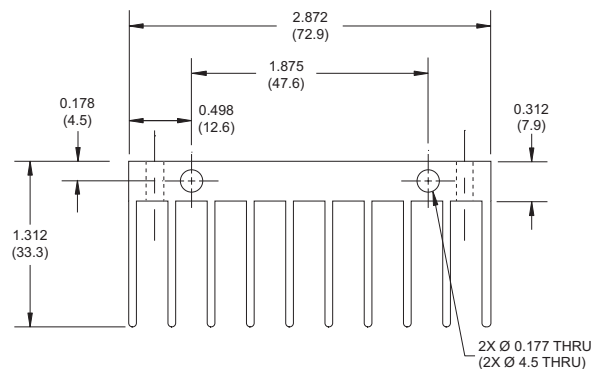
## MECHANICAL SPECIFICATIONS

Dimensions in Inches (mm)

### IM481H PLUS DRIVER



### H-481 HEAT SINK



### INT-481 INTERFACE BOARD

