

IM481H

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

The IM481H has 14 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, 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 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 to facilitate testing, or in situations where panel mounting the IM481H 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 LED's. Wiring is done through a 19 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 or the INT-481H/IM481H 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 kit.



INT-481 Interface Board

PIN ASSIGNMENTS

PIN#	FUNCTION	PIN#	FUNCTION
1	Phase A	12	V+ [+12 to 48VDC]
2	Phase /A	13	Reset
3	Current Reduction Adjustment	14	+5VDC
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
11	Ground		

ELECTRICAL SPECIFICATIONS

Input Voltage +12 to +48 Volts (Includes Back EMF and Power Supply Ripple)

Output Current* 0.14 to 2.1 A Peak (Max 1.5 A RMS)

Step Frequency (Max) 10 MHz

Steps per Revolution (1.8° Motor) 400, 800, 1000, 1600, 2000, 3200, 5000, 6400, 10000, 12800, 25000, 25600, 50000, 51200

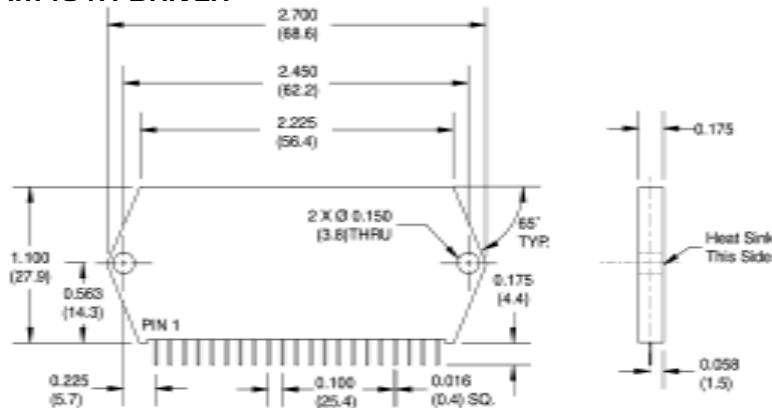
Protection Thermal, Phase to Phase, V+ to Phase

Current Reduction* 0.5 Sec. After Last Step Input

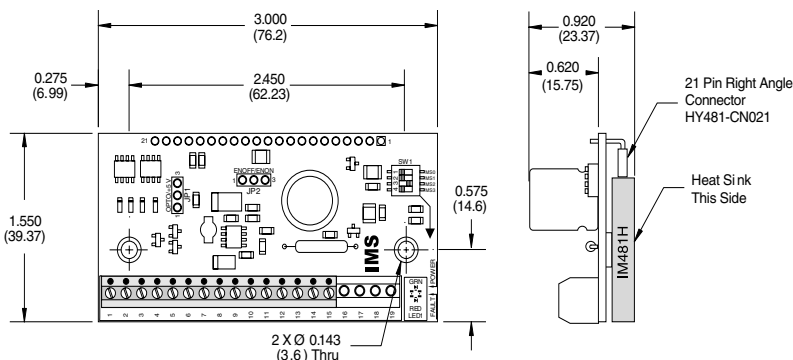
*Resistor Selectable

MECHANICAL SPECIFICATIONS

IM481H DRIVER



INT-481 INTERFACE BOARD



TEMPERATURE

Storage -40 to +125° C

Rear Mounting

Surface (Max)* 0 to +70° C

*External heat sink may be required to maintain mounting surface below 70°C. Isolating thermal pad is required when using additional heat sink.

ORDERING INFORMATION

Name Part Number

Microstepping Driver (Includes Thermal Pad) IM481H

Isolating Thermal Pad TI-481

Interface Board INT-481

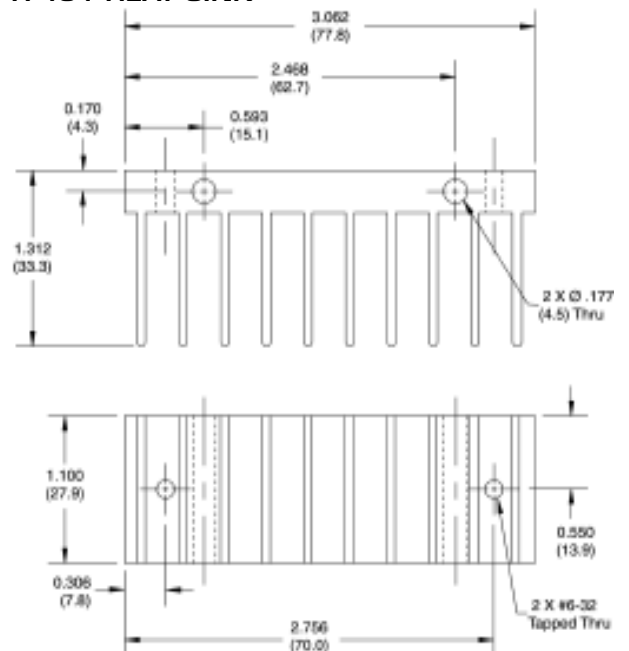
Heat Sink Kit (Includes Mounting Hardware) H-481

21 Pin Right

Angle Connector HY481-CN021

Small End Screwdriver SD1

H-481 HEAT SINK



Dimensions in Inches (mm)