

HIGH PERFORMANCE MICROSTEPPING DRIVER

- Low Cost
- Extremely Small
(5.9 x 3.0 x 1.1 inches)
(149 x 76.2 x 29 mm)
- High Input Voltage (+80 V)
- High Output Current
(7 Amps RMS, 10 Amps Peak)
- Advanced Surface Mount and ASIC Technology
- No Minimum Inductance
- Single Supply
- Microstep Resolutions Can Be Changed On-The-Fly Without Loss of Motor Position
- Up to 2 MHz Step Clock Rate
- All Inputs Opto-Isolated
- Adjustable Automatic Current Reduction
- Current Boost Mode
- 20 kHz Chopping Rate
- Short Circuit, Over/Under Voltage and Over Temperature Protection
- Removable Screw Type Terminal Connectors
- Automatically Switches between Slow and Fast Decay for Unmatched Performance
- 14 Selectable Resolutions Both in Decimal and Binary
- Up to 51,200 Steps/Rev
- Fault Output
- At Full Step Output
- Optional On-board Indexer and Encoder Feedback



The IM1007 has 14 different resolutions (both in binary and decimal) built into the driver. These resolutions can be changed at any time. There is no need to reset the driver.

The development of proprietary circuits has minimized ripple current, while maintaining a 20 kHz chopping rate. This prevents additional motor heating that is common with drivers requiring higher chopping rates. Now low inductance stepper motors can be used to improve high speed performance and system efficiency.

The IM1007 also comes with an optional on-board indexer to provide design engineers with versatility and power unmatched in today's industry.

The IM1007 is priced lower to provide customers with affordable state-of-the-art technology for that competitive edge needed in today's market.

A block diagram illustrating the components of a stepper motor system. On the left, two inputs are shown: "POWER SUPPLY" and "CONTROL INTERFACE", each with an arrow pointing to a central block labeled "DRIVER". From the right side of the "DRIVER" block, four lines connect to a "STEPPING MOTOR" block on the right. The "STEPPING MOTOR" block is depicted with a cylindrical body and a central shaft with a flat-top nut.

ELECTRICAL SPECIFICATIONS

Input Voltage*	+24 to +80 Volts
Drive Current Per Phase	2 to 10 Amps Peak (Max 7 Amps RMS)
Isolated Inputs	Microstep Resolution 1–4, Step Clock, Direction, Enable & Reset
Step Frequency (Max)	1.8 MHz (10 MHz –HS Option)
Steps per Revolution – 1.8° Motor	400, 800, 1000, 1600, 2000, 3200, 5000, 6400, 10000, 12800, 25000, 25600, 50000, 51200
Protection	Over Temperature, Over/Under Voltage and All Way Short Circuit

*Includes Motor Back EMF, Power Supply Ripple and High Line Conditions. Recommended Power Supply: ISP300-7.

PIN ASSIGNMENTS

CONNECTOR P1		CONNECTOR P2	
PIN	FUNCTION	PIN	FUNCTION
1	Microstep Resolution Select 1	1	Full Step
2	Microstep Resolution Select 2	2	Fault
3	Microstep Resolution Select 3	3	Reduction Adjust
4	Microstep Resolution Select 4	4	Current Adjust
5	Opto Supply	5	Ground
6	Step Clock	6	+V (+24 to +80 VDC)
7	Direction	7	Phase B
8	Reset	8	Phase /B
9	Enable Output	9	Phase A
10	Current Reduction	10	Phase /A

TEMPERATURE

Storage	–40 to +125° C
Case (Max)**	0 to +70° C

** External heat sink may be required to maintain case temperature.

ORDER INFORMATION

Name	Part Number
Microstepping Motor Driver	IM1007
High Speed Inputs (10 MHz)	 add –HS to basic part #
Heat Sink	 H-1000
Thermal Pad	 TN-1000
10 Pin Terminal Strips (pair)	 TS-10

MECHANICAL SPECIFICATIONS

Dimensions in Inches (mm)

