

2.5A BIPOLAR STEPPER MOTOR DRIVER USING A3979

The tiny board designed using A3979 IC from ALLEGRO which is complete micro stepping driver with built in translator. The translator is the key to the easy implementation of the A3979. It allows the simple input of one pulse on the STEP pin to drive the motor one micro step, which can be either a full step, half, quarter, or sixteenth, depending on the setting of the MS1 and MS2 logic inputs. There are no phase-sequence tables, high-frequency control lines, or complex interfaces to program. The A3979 interface is an ideal fit for applications where a complex microprocessor is unavailable or is overburdened.

Features

- REF (PR1) Current Adjust 0-2V
- CN1 Motor Supply Input Up to 30V DC (35V Maximum)
- Load 2.5A
- Logic Supply 3.3V to 5V DC
- CN3 Bipolar Stepper Motor Connections
- CN2 Logic Supply 5V & Signal Inputs
- J1-MS2 & J2-MS1 Micro-Stepping FULL, HALF, Quarter, Sixteenth
- J3, J4 Option Replacement for PR1 Jumper Type Current Setting
- D1 Logic Power LED

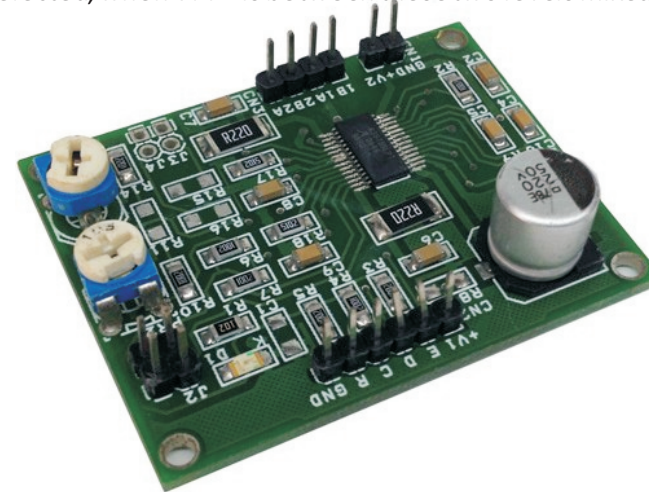


PFD (PR2)

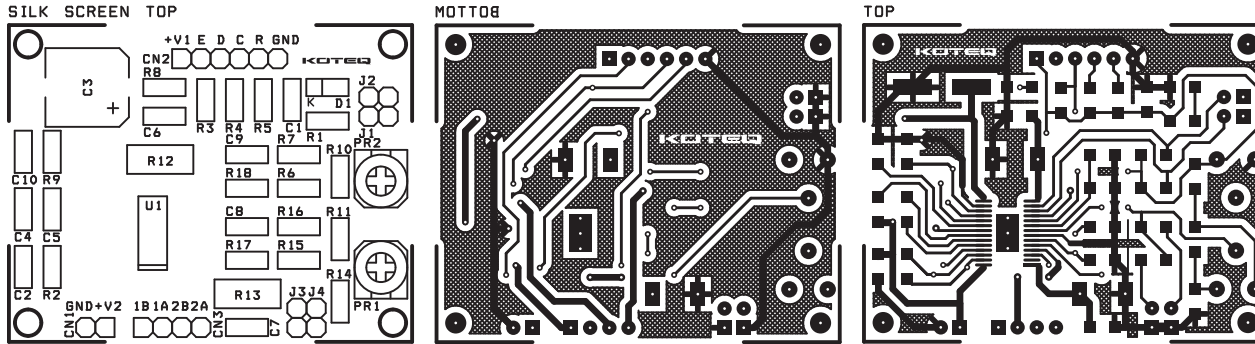
When A step input signal commands a lower output current than the previous step, it switches the output current decay to either slow, fast or mixed decay mode, depending on the voltage level at the PFD input. If the voltage at PFD input is greater than $0.6 \times V_{CC}$, then slow decay mode is selected, if the voltage on PFD input is less than $0.21 \times V_{CC}$ then the fast decay mode is selected, when VPF is between these two levels mixed decay mode is selected.

J2-MS1 & J1-MS2 MICRO-STEPPING

MS1	MS2	MICRO-STEPPING
CLOSE	CLOSE	FULL
OPEN	CLOSE	HALF
CLOSE	OPEN	1/4TH
OPEN	OPEN	1/16TH



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BOM			
SR.	QNTY.	REF	DESC.
1	1	CN1	2 PIN HEADER CONNECTOR
2	1	CN2	6 PIN HEADER CONNECTOR
3	1	CN3	4 PIN HEADER CONNECTOR
4	4	C1,C2,C6,C7	0.1uF SMD 1206
5	1	C3	220uF/50V
6	3	C4,C5,C10	0.22uF SMD 1206
7	2	C8,C9	470PF SMD 1206
8	1	D1	RED LED SMD 1206
9	4	J1-MS2,J2-MS1	2 PIN JUMPER & CLOSURE
10	8	R2,R3,R5,R6,R7,R14	10K SMD 1206
11	1	R1	470E SMD 1206
12	6	R4,R8,R9,R11,R15,R16	OMIT
13	1	R10	0E
14	2	R12,R13	0.2E/2W
15	2	R17,R18	12K SMD 1206
16	1	U1	A3979 SMD
17	2	PR1,PR2	10 K PRESET

