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NTE7082
Integrated Circuit
Stepper Motor Driver

Description:

The NTE7082 is a bipolar integrated circuit in a 16–Lead DIP type package intended for driving a four–phase two–state motor. The circuit consists of a bidirectional four–state counter and a code converter to drive the four outputs in the sequence required for driving a stepping motor.

Features:

- High Noise Immunity Inputs
- Clockwise and Counter–Clockwise Operation
- Reset Facility
- High Output Current
- Outputs Protected Against Damage by Overshoot

Applications:

- Automotive Industry
- Industrial
- Office Equipment
- EDP

Absolute Maximum Ratings:

DC Supply Voltage, $V_{CC}1$, $V_{CC}2$ 18V
Input Voltage (All Inputs), V_I 18V
Current into Pin4, I_{RX} 120mA
Output Current, I_{OL} 500mA
Operating Ambient Temperature Range, T_A . . . . . –20° to +70°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C

DC Electrical Characteristics: (V_{CC} = 9.5V to 18V, V_{EE} = 0V, T_A = –20° to +70°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage Range	V_{CC}		8.5	–	18.0	V
Supply Current	I_{CC}	$V_{CC}1$ = 12V, unloaded, all outputs HIGH, Pin4 Open	2.0	4.5	6.5	mA

DC Electrical Characteristics (Cont'd): (V_{CC} = 9.5V to 18V, V_{EE} = 0V, T_A = –20° to +70°C unless otherwise specified)

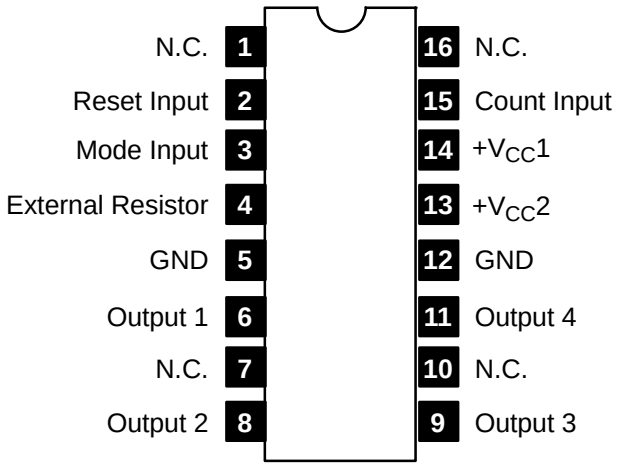
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Count, Mode, and Reset Inputs (Pin15, Pin3, and Pin2)						
HIGH Input Voltage	V_{IH}		7.5	–	–	V
LOW Input Voltage	V_{IL}		–	–	4.5	V
HIGH Input Current	I_{IH}		–	1	–	µA
LOW Input Current	I_{IL}		–	30	–	µA
External Resistor (Pin4)						
Voltage at External Resistor	V_{RX}	V_{CC} = 12V ±15%, R4 = 130Ω ±5%	3.0	–	4.5	V
Output 1, Output 2, Output 3, and Output 4 (Pin6, Pin8, Pin9, and Pin11)						
LOW Output Voltage	V_{OL}	I_{OL} = 350mA	–	500	1000	mV
		I_{OL} = 500mA	–	700	–	mV
LOW Output Current	I_{OL}		–	–	500	mA
HIGH Output Current	I_{OH}	V_O = 18V	–	–	50	µA

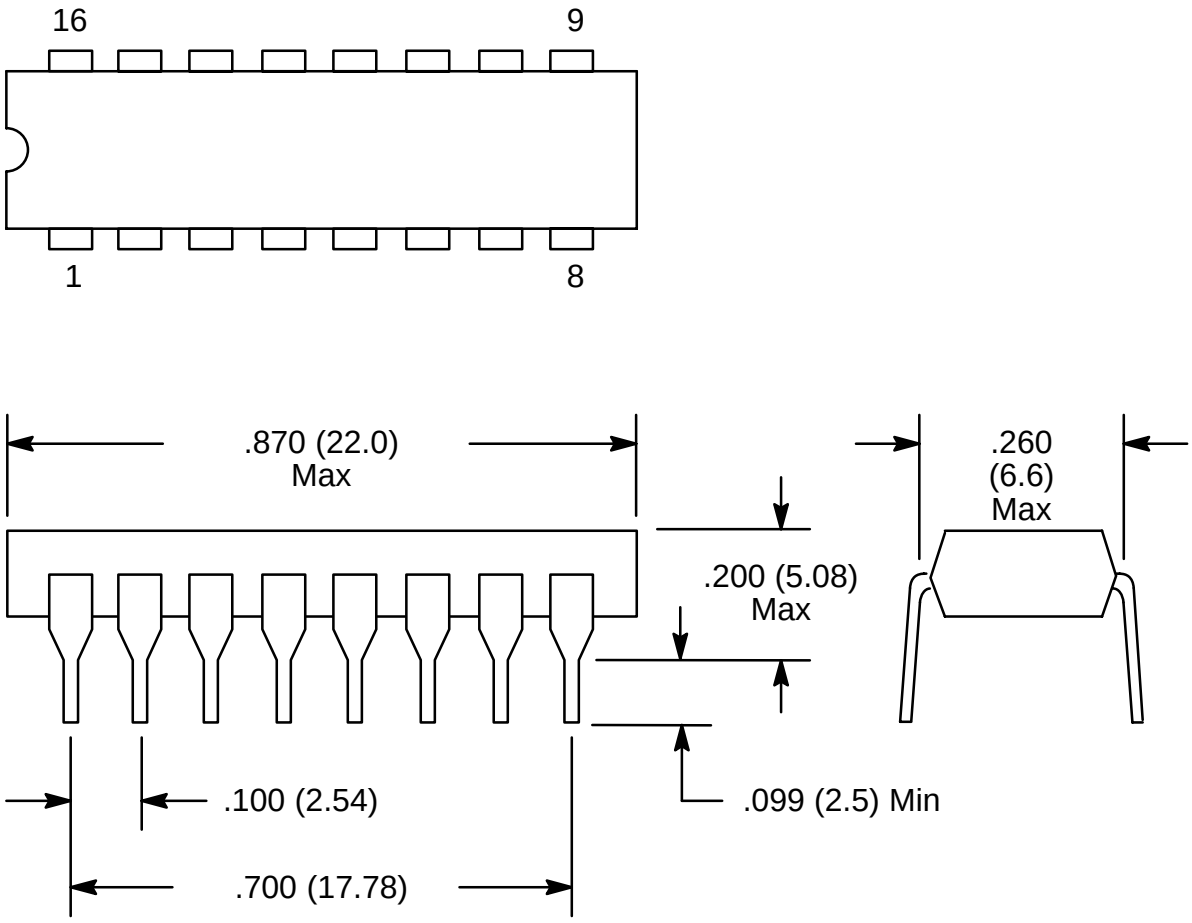
Mode Input Table:

With the Mode Input (Pin3) the sequence of output signals, and hence the direction of rotation of the stepping motor, can be chosen as shown below:

Counting Sequence	Mode = LOW				Mode = HIGH			
	Output 1	Output 2	Output 3	Output 4	Output 1	Output 2	Output 3	Output 4
0	L	H	L	H	L	H	L	H
1	H	L	L	H	L	H	H	L
2	H	L	H	L	H	L	H	L
3	L	H	H	L	H	L	L	H
0	L	H	L	H	L	H	L	H

Pin Connection Diagram




16
9
1
8
.870 (22.0)
Max
.200 (5.08)
Max
.260
(6.6)
Max
.100 (2.54)
.700 (17.78)
.099 (2.5) Min