

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_{CC1} , V_{CC2} 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 $+70^\circ\text{C}$
 Storage Temperature Range, T_{stg} -65° to $+150^\circ\text{C}$

DC Electrical Characteristics: ($V_{CC} = 9.5\text{V}$ to 18V , $V_{EE} = 0\text{V}$, $T_A = -20^\circ$ to $+70^\circ\text{C}$ 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}	$V_{CC1} = 12\text{V}$, unloaded, all outputs HIGH, Pin4 Open	2.0	4.5	6.5	mA

DC Electrical Characteristics (Cont'd): ($V_{CC} = 9.5V$ to $18V$, $V_{EE} = 0V$, $T_A = -20^\circ$ to $+70^\circ C$ 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}	$V_{CC} = 12V \pm 15\%$, $R_4 = 130\Omega \pm 5\%$	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



