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NTE7006
Integrated Circuit
Switch Mode Driver for DC Motors

Description

The NTE7006 is a monolithic LSI circuit in 15–Lead SIP type package with staggered leads. This device is intended for use in a 3–chip DC motor positioning system for applications such as carriage/ daisy–wheel position control in typewriters.

Features

- Driving Capability: 2A, 36V, 30kHz
- 2 Logic Chip Enable
- External Loop Gain Adjustment
- Single Power Supply: 18V to 36V
- Input Signal Symmetric to GND
- Thermal Protection

Absolute Maximum Ratings:

Power Supply, V_S 36V
Input Voltage, V_I . . . . . –15V to $+V_S$ V
Inhibit voltage, $V_{inhibit}$ . . . . . 0 to V_S V
Total Power Dissipation (T_C = +75°C), P_{tot} 25W
Operating Junction Temperature Range, T_{opr} . . . . . –40° to +150°C
Storage Temperature Range, T_{stg} . . . . . –40° to +150°C
Thermal Resistance, Junction–to–Case, $R_{\Theta JC}$ . . . . . 3°C/W

Electrical Characteristics: (T_A = +25°C, f_{OSC} = 20kHz unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V_S		18	–	36	V
Quiescent Drain Current	I_d	V_S = 20V (Offset Null)	–	30	50	mA
Input Offset Voltage (Pin6)	V_{OS}	V_S = 36V, I_O = 0	–	–	±350	mV
Inhibit Low Level (Pin12, Pin13)	V_{inh}		–	–	2	V
Inhibit High Level (Pin12, Pin13)	V_{inh}		3.2	–	–	V

Electrical Characteristics (Cont'd): (T_A = +25°C, f_{OSC} = 20kHz unless otherwise specified)

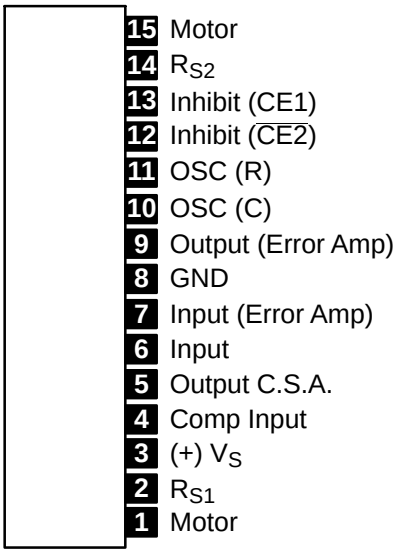
Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Low Voltage Condition	I_{inh}	V_{inh} (L) = 0.4V		–	–	–100	µA
High Voltage Conditions	I_{inh}	$V_{inh\ (H)\ =\ 3.2V}$		–	–	10	µA
Input Current (Pin6)	I_I	V_I = –8.8V		–	–	–1.8	mA
		V_I = +8.8V		–	–	0.5	mA
Input Voltage (Pin6)	V_I	$R_{S1} = R_{S2}$ = 0.2Ω	I_O = 2A	–	8.3	–	V
			I_O = –2A	–	–8.3	–	V
Output Current	I_O	V_I = ±8.8V, $R_{S1} = R_{S2}$ = 0.2Ω		±2	–	–	A
Total Dropout Voltage	V_D	(Including Sensing Resistors)	I_O = 2A	–	–	5	V
			I_O = 1A	–	–	3.5	V
Sensing Resistor Voltage Drop	V_{RS}	T_J = +150°C, I_O = 2A		–	–	0.44	V
Transconductance	$\frac{I_O}{V_i}$	$R_{S1} = R_{S2}$ = 0.2Ω		228	240	260	mA/V
		$R_{S1} = R_{S2}$ = 0.4Ω		–	120	–	mA/V
Frequency Range (Pin10)	f_{OSC}			1	–	30	kHz

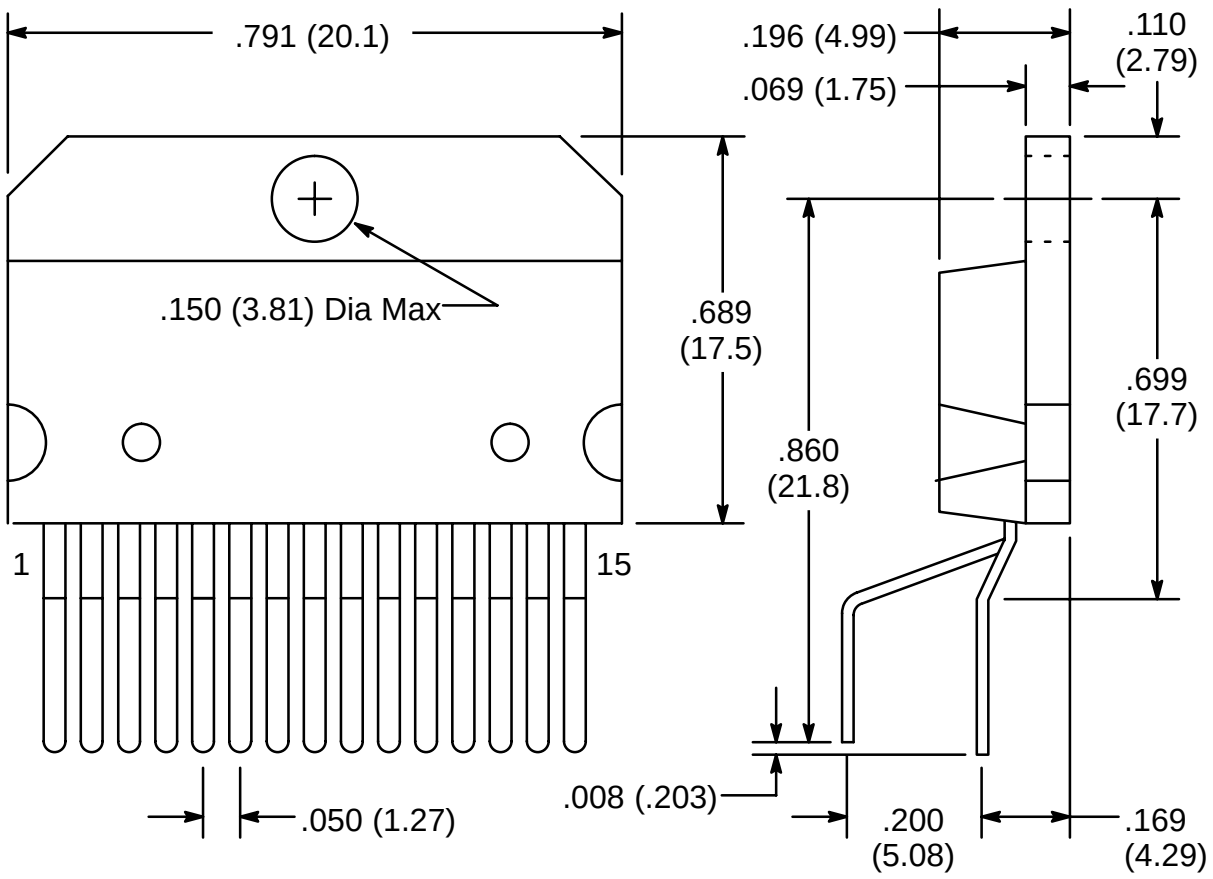
Truth Table:

$V_{inhibit}$		Output Stage Condition
Pin12	Pin13	
L	L	Disabled
L	H	Normal Operation
H	L	Disabled
H	H	Disabled

Note 1. The output stage is also disabled if the supply voltage falls below 18V.

Pin Connection Diagram
(Front View)




.791 (20.1)
.196 (4.99)
.110
(2.79)
.069 (1.75)
.150 (3.81) Dia Max
.689
(17.5)
.699
(17.7)
.860
(21.8)
1
15
.008 (.203)
.050 (1.27)
.200
(5.08)
.169
(4.29)