ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089

NTE2088
Integrated Circuit
4–Segment Darlington Array, w/Pre–Driver Stage
for use with PMOS and 12V CMOS

Description:

The NTE2088 is a High voltage, high current Darlington array in a 16–Lead DIP type package designed as an interface between low–level logic and a variety of peripheral loads such as relays, solenoids, DC and stepper motors, multiplexed LED and incandescent displays, heaters, and similar loads to 480 Watts (1.5A per output, 80V, 26% duty cycle).

This device has a minimum output breakdown of 50V and a minimum $V_{CE(sus)}$ of 35V measured at 100mA, or a minimum output breakdown of 80V and a minimum $V_{CE(sus)}$ of 50V.

A copper–alloy lead frame provides maximum power dissipation using standard cooling methods. This lead configuration facilitates attachment of external heat sinks for increased power dissipation with standard IC sockets and printed wiring boards.

Features:
- TTL, DTL, PMOS, CMOS Compatible Inputs
- Transient–Protected Outputs
- Loads to 480 Watts
- Heat Sink Contact Tabs on Quad Arrays

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Output Voltage, V_{CEX} 80V
Output Sustaining Voltage, $V_{CE(sus)}$ 50V
Output Current , I_{OUT} 1.75A
Input Voltage, V_{IN} 30V
Input Current (Note 1), I_B 25mA
Supply Voltage, V_S 20V
Operating Temperature Range, T_A . . . . –20° to +85°C
Storage Temperature Range, T_S . . . . –55° to –150°C

Note 1. Input current may be limited by maximum allowable input voltage.

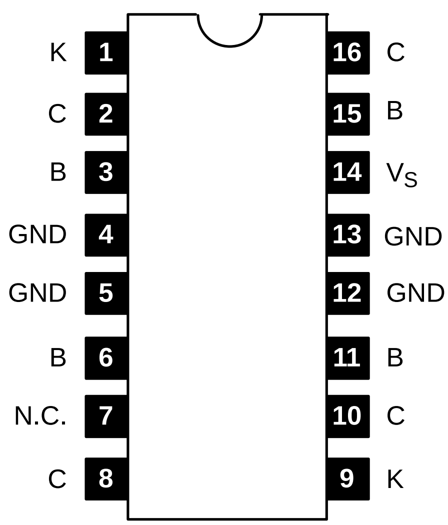
Electrical Characteristics: (T_A = +25°C unless otherwise specified)

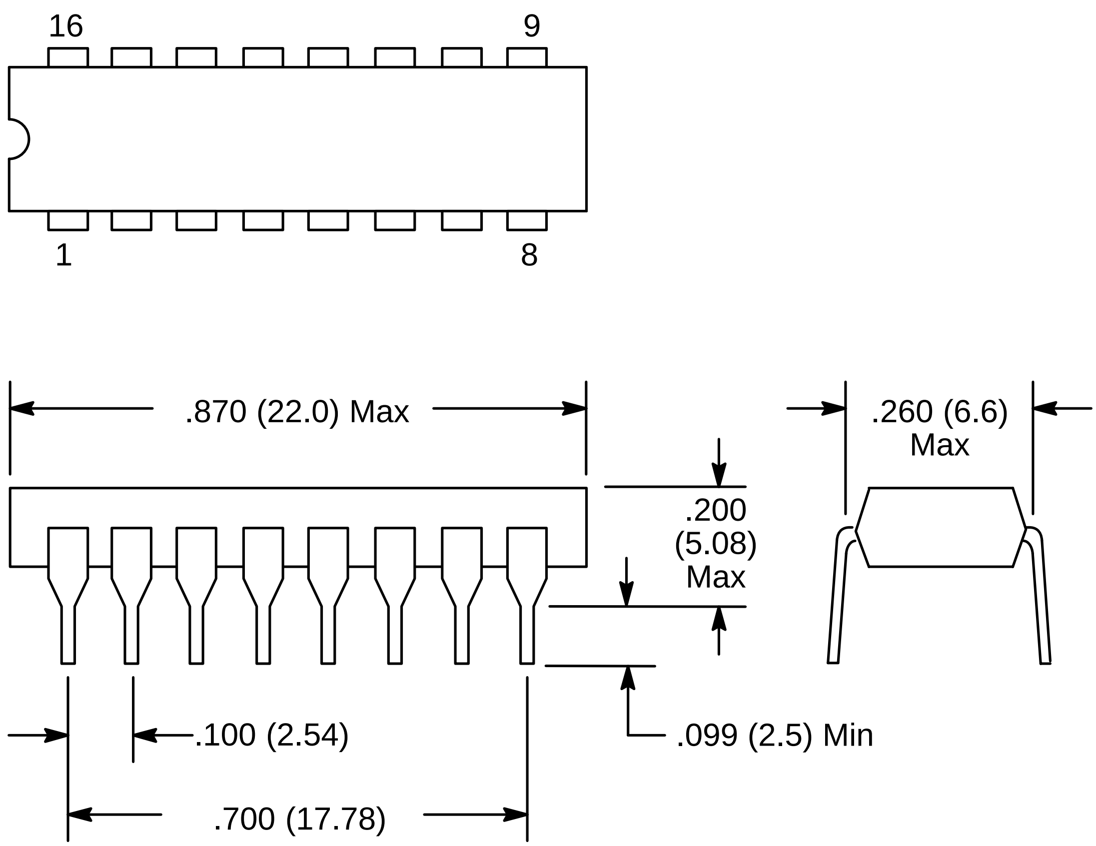
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Leakage Current	I_{CEX}	V_{CE} = 80V	–	–	100	µA
		V_{CE} = 80V, T_A = +70°C	–	–	500	µA
Output Sustaining Voltage	$V_{CE(sus)}$	I_C = 100mA, V_{IN} = –400mV	50	–	–	V

Electrical Characteristics (Cont'd): (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 500mA, V_{IN} = 5V	–	–	1.1	V
		I_C = 750mA, V_{IN} = 5V	–	–	1.2	V
		I_C = 1A, V_{IN} = 5V	–	–	1.3	V
		I_C = 1.25A, V_{IN} = 5V	–	–	1.4	V
		I_C = 1.5A, V_{IN} = 5V	–	–	1.5	V
Input Current	$I_{IN(ON)}$	V_{IN} = 5V	–	–	400	µA
		V_{IN} = 12V	–	–	1250	µA
Input Voltage	$V_{IN(ON)}$	V_{CE} = 2V, I_C = 1.5A	–	–	5	V
Supply Current	I_S	I_C = 500mA, V_{IN} = 5V	–	–	4.5	mA
Turn–On Delay	t_{PLH}	0.5 E_{IN} to 0.5 E_{OUT}	–	–	1.0	µs
Turn–Off Delay	t_{PHL}	0.5 E_{IN} to 0.5 E_{OUT}, I_C = 1.25A	–	–	1.5	µs
Clamp Diode Leakage Current	I_R	V_R = 80V	–	–	50	µA
		V_R = 80V, T_A = +70°C	–	–	100	µA
Clamp Diode Forward Voltage	V_F	I_F = 1A	–	–	1.75	V
		I_F = 1.5A	–	–	2.0	V

Pin Connection Diagram




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