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NTE2087
Integrated Circuit
4–Stage Darlington Array
w/Pre–Drive Stage for TTL

Description:

The NTE2087 is a High–Voltage, High–Current Darlington Array designed to interface low–level logic to a variety of peripheral loads such as relays, solenoids, d–c and stepper motors, multiplexed LED and incandescent displays, heaters, and similar loads to 480 watts (1.5 A per output, 80V, 26% duty cycle).

This device is specified with a minimum output breakdown of 50 volts and $V_{CE(sus)}$ minimum of 35 volts measured at 100mA and an output current specification of 1.5A (saturated).

A Quad driver Type, the NTE2087 is intended for use with TTL, low–speed TTL, and 5V MOS logic. This device incorporates predriver stages and is most suitable for applications requiring high gain (low input current loading).

Features:

- TTL, DTL, PMOS, CMOS Compatible Inputs
- Transient Protected Outputs
- Handle Loads to 480 Watts
- Plastic Dual In–Line Package with Heat Sink Contact Tabs

Absolute Maximum Ratings: (T_A = +25°C for any one driver unless otherwise specified)

Output Voltage, V_{CEX} 80V
Minimum Output Sustaining Voltage, $V_{CE(sus)}$ 50V
Output Current, I_{OUT} 1.75A
Input Voltage (Note 1), V_{IN} 15V
Input Current (Note 2), I_B 25mA
Supply Voltage, V_S 10V
Operating Ambient Temperature Range, T_{opr} . . . . . –20° to +85°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C

Note 1. Input Voltage is with reference to ground
Note 2. Input Current may be limited by maximum allowable input voltage.

Electrical Characteristics: (T_A = +25°C, V_S = 5V 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
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 500mA, V_{IN} = 2.75V	–	–	1.1	V
		I_C = 750mA, V_{IN} = 2.75V	–	–	1.2	V
		I_C = 1.0A, V_{IN} = 2.75V	–	–	1.3	V
		I_C = 1.25A, V_{IN} = 2.75V	–	–	1.4	V
		I_C = 1.5A, V_{IN} = 2.75V	–	–	1.5	V
Input Current	$I_{IN(ON)}$	V_{IN} = 2.75V	–	–	550	µA
		V_{IN} = 3.75V	–	–	1000	µA
Input Voltage	$V_{IN(ON)}$	V_{CE} = 2V, I_C = 1.5A	–	–	2.75	V
Supply Current	I_S	I_C = 500mA, V_{IN} = 2.75V	–	–	6.0	mA
Turn–On Delay	t_{PLH}	$0.5E_{in}$ to $0.5E_{out}$	–	–	1.0	µs
Turn–Off Delay	t_{PHL}	$0.5E_{in}$ to $0.5E_{out}$, 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 = 1.0A	–	–	1.75	V
		I_F = 1.5A	–	–	2.0	V

Pin Connection Diagram