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NTE75189
Integrated Circuit
Diode Transistor Logic (DTL)
Quad Line Receiver

Description:

The NTE75189 is a monolithic Low−power Schottky quadruple line receiver in a 14−Lead DIP type package designed to satisfy the requirements of the standard interface between data terminal equipment and data communication equipment as defined by EIA Standard RS−232−C. A separate response control pin is provided for each receiver. A resistor or a resistor and bias voltage source can be connected between this pin and GND to shift the input threshold levels. An external capacitor can be connected between this pin and GND to provide input noise filtering.

Features:

- Meets Specifications of EIA RS−232−C
- Input Resistance: 3kΩ to 7kΩ
- Input Signal Range: ±30V
- Operates from a Single 5V Supply
- Built−In Input Hysteresis (Double Thresholds)
- Response Control Provides:
  - Input Threshold Shifting
  - Input Noise Filtering

Absolute Maximum Ratings: (T_A = 0 to +70°C unless otherwise specified)

Supply Voltage (Note 1), V_{CC} 10V
Input Voltage . . . . . ±30V
Output Current 20mA
Continuous Total Dissipation ($T_A \le +25°C$), P_D 1025mW
Operating Ambient Temperature range, T_A . . . . . 0 to +70°C
Storage Temperature Range, T_{stg} . . . . . −65° to +150°C
Lead Temperature (During Soldering 1/16” (1.6mm) from case, 60sec Max), T_L . . . . . +300°C

Note 1. All voltage values are with respect to the network GND pin.

Electrical Characteristics: (T_A = 0 to +70°C, V_{CC} = 5V ±1% unless otherwise specified)

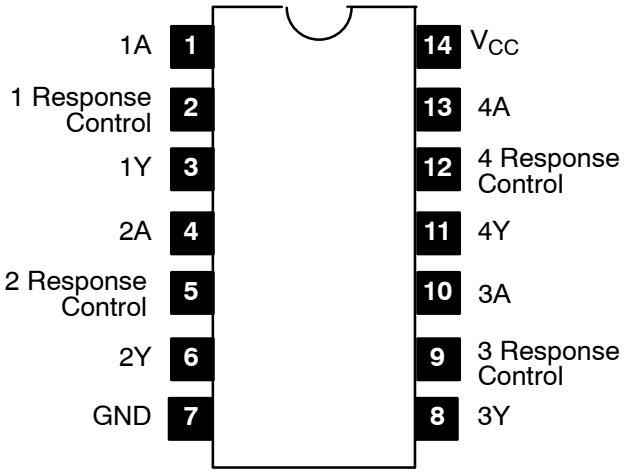
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Positive–Going Threshold Voltage	V_{T+}	T_A = +25°C	1.0	1.3	1.5	V
		T_A = 0 to +70°C	0.9	–	1.6	V
Negative–Going Threshold Voltage	$V_{T–}$	T_A = +25°C	0.75	1.0	1.25	V
		T_A = 0 to +70°C	0.65	–	1.25	V
High Level Output Voltage	V_{OH}	V_I = 750mV, I_{OH} = –0.5mA	2.6	4.0	5.0	V
		Input Open, I_{OH} = –0.5mA	2.6	4.0	5.0	V
Low Level Output Voltage	V_{OL}	V_I = 750mV, I_{OL} = 10mA	–	0.2	0.45	V
High Level Input Current	I_{IH}	V_I = 25V	3.6	–	8.3	mA
		V_I = 3V	0.43	–	–	mA
Low Level Input Current	I_{IL}	V_I = –25V	–3.6	–	–8.3	mA
		V_I = –3V	–0.43	–	–	mA
Short Circuit Output Current	I_{OS}		–	–3	–	mA
Supply Current	I_{CC}	V_I = 5V, Outputs Open	–	20	26	mA

Note 2. All typical values are at V_{CC} = 5V, T_A = +25°C.
Note 3. All characteristics are measured with the response control pin open.

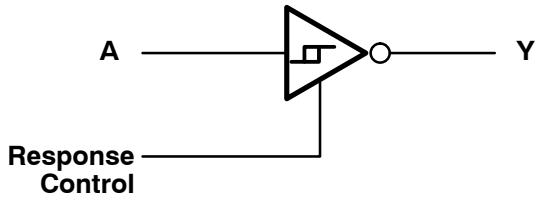
Switching Characteristics: (T_A = +25°C, V_{CC} = 5V unless otherwise specified)

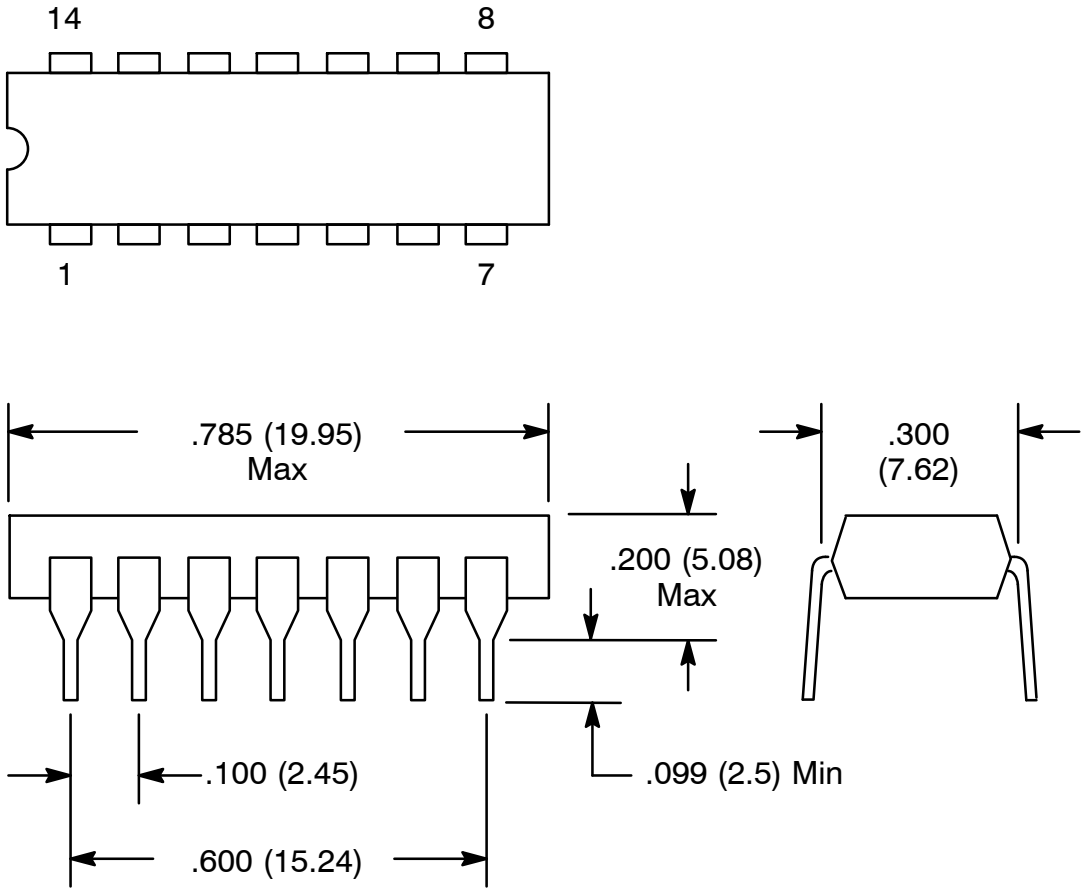
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Propagation Delay Time, Low–to–High–Level Output	t_{PLH}	C_L = 15pF, R_L = 3.9kΩ	–	25	85	ns
Propagation Delay Time, High–to–Low–Level Output	t_{PHL}	C_L = 15pF, R_L = 390Ω	–	25	50	ns
Transition Time, Low–to–High Level Output	t_{TLH}	C_L = 15pF, R_L = 3.9kΩ	–	120	175	ns
Transition Time, High–to–Low Level Output	t_{THL}	C_L = 15pF, R_L = 390Ω	–	10	20	ns

Pin Connection Diagram



Logic Diagram
(Each Receiver)




14
8
1
7
.785 (19.95)
Max
.200 (5.08)
Max
.300
(7.62)
.100 (2.45)
.099 (2.5) Min
.600 (15.24)