



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089
<http://www.nteinc.com>

NTE75453B Integrated Circuit TTL – Dual Peripheral OR Driver

Description:

The NTE75453B is a dual peripheral positive OR driver in an 8-Lead plastic DIP type package with the output of the logic gates internally connected to the bases of the NPN output transistors designed for use in systems that employ TTL logic. Diode-clamped inputs simplify circuit design.

Typical applications include high-speed logic buffers, power drivers, relay drivers, lamp drivers, MOS drivers, line drivers, and memory drivers.

Features:

- Characterized for Use to 300mA
- High-Voltage Outputs
- No Output Latch-Up at 20V (After Conducting 300mA)
- High-Speed Switching
- TTL-Compatible Diode-Clamped Inputs

Absolute Maximum Ratings: (Note 1)

Supply Voltage, V_{CC}	7V
Input Voltage	5.5V
Interemitter Voltage (Note 2)	5.5V
Off-State Output Voltage	30V
Continuous Collector or Output Current (Note 3)	400mA
Peak Collector or Output Current ($t_w \leq 10\text{ms}$, Duty Cycle $\leq 50\%$, Note 3)	500mA
Continuous Total Power Dissipation ($T_A \leq +25^\circ\text{C}$), P_D	1200mW
Derate Above $+25^\circ\text{C}$	9.6mW/ $^\circ\text{C}$
Operating Temperature Range, T_A	0°C to $+70^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65°C to $+150^\circ\text{C}$
Lead Temperature (During Soldering, 1/16" from case, 10sec max), T_L	$+260^\circ\text{C}$

- Note 1. Voltage values are with respect to network ground terminal unless otherwise specified.
 Note 2. This is the voltage between two emitters of a multiple-emitter transistor.
 Note 3. Both halves of this dual circuit may conduct rated current simultaneously; however, power dissipation averaged over a short time interval must fall within the continuous dissipation rating.

Recommended Operating Conditions:

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	V_{CC}	4.75	5.0	5.25	V
High-Level Input Voltage	V_{IH}	2	-	-	V
Low-Level Input Voltage	V_{IL}	-	-	0.8	V
Operating Temperature Range	T_A	0	-	+70	$^\circ\text{C}$

Electrical Characteristics: (Note 4, Note 5)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Input Clamp Voltage	V_{IK}	$V_{CC} = \text{MIN}, I_I = -12\text{mA}$	-	-1.2	-1.5	V	
High-Level Output Current	I_{OH}	$V_{CC} = \text{MIN}, V_{IH} = \text{MIN}, V_{OH} = 30\text{V}$	-	-	100	μA	
Low-Level Output Voltage	V_{OL}	$V_{CC} = \text{MIN}, V_{IL} = 0.8\text{V}$	$I_{OL} = 100\text{mA}$	-	0.25	0.4	V
			$I_{OL} = 300\text{mA}$	-	0.5	0.7	V
Input Current	I_I	$V_{CC} = \text{MAX}, V_I = 5.5\text{V}$	-	-	1	mA	
High-Level Input Current	I_{IH}	$V_{CC} = \text{MAX}, V_I = 2.4\text{V}$	-	-	40	μA	
Low-Level Input Current	I_{IL}	$V_{CC} = \text{MAX}, V_I = 0.4\text{V}$	-	-1.0	-1.6	mA	
Supply Current	I_{CCH}	$V_{CC} = \text{MAX}, V_I = 5\text{V}$	-	8	11	mA	
	I_{CCL}	$V_{CC} = \text{MAX}, V_I = 0\text{V}$	-	54	68	mA	

Note 4. For conditions shown as MIN or MAX, use the appropriate value specified under "Recommended Operation Conditions".

Note 5. All typical values are at $V_{CC} = 5\text{V}, T_A = +25^\circ\text{C}$.

Switching Characteristics: ($V_{CC} = 5\text{V}, T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Propagation Delay Time	t_{PLH}	$I_O = 200\text{mA}, R_L = 50\Omega,$ $C_L = 15\text{pF}$	-	18	25	ns
	t_{PHL}		-	18	25	ns
Transition Time	t_{TLH}		-	5	8	ns
	t_{THL}		-	7	12	ns
High-Level Output Voltage after Switching	V_{OH}	$V_S = 20\text{V}, I_O = 300\text{mA}$	$V_S - 6.5$			mV

Function Table (Each Driver):

A	B	Y
L	L	L (On State)
L	H	H (Off State)
H	L	H (Off State)
H	H	H (Off State)

Positive Logic

$$Y = A + B \text{ or } \overline{A} \overline{B}$$

Pin Connection Diagram

