



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

## NTE2072 Integrated Circuit Transistor Array <sup>w</sup>/Clamp Diode and Strobe

**Description:**

The NTE2072 is a 6-Channel sink driver consisting of 12 NPN transistors to form high current gain driver pairs.

Each input has a diode and 1.6kΩ resistor in series to allow a negative voltage input. All inputs can be controlled simultaneously by a strobe input at Pin1.

The power supply of the predrivers is connected to Pin16. All emitters and the substrate are connected together to Pin8. Each output has an integral diode for inductive load transient suppression and the cathodes of the diodes are connected to Pin9.

The outputs are capable of sinking 320mA and will withstand 20V in the OFF state.

**Absolute Maximum Ratings:** ( $T_A = -20^\circ$  to  $+75^\circ\text{C}$  unless otherwise specified)

Supply Voltage, $V_{CC}$	10V
Output Sustaining Voltage (Transistor OFF), $V_{CEO}$	-0.5V to +20V
Collector Current (Transistor ON), $I_C$	320mA
Input Voltage, $V_I$	-25V to +20V
Strobe Input Voltage, $V_{I(STB)}$	20V
Clamp Diode Reverse Voltage, $V_{R(D)}$	20V
Clamp Diode Forward Current, $I_{F(D)}$	320mA
Power Dissipation ( $T_A = +25^\circ\text{C}$ ), $P_d$	1.47W
Operating Ambient Temperature Range, $T_{opr}$	$-20^\circ$ to $+75^\circ\text{C}$
Storage Temperature Range, $T_{stg}$	$-55^\circ$ to $+125^\circ\text{C}$

**Recommended Operational Conditions:** ( $T_A = -20^\circ$  to  $+75^\circ\text{C}$ , unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	$V_{CC}$		3	-	8	V
Output Voltage	$V_O$		0	-	20	V
Collector Current (Per Channel)	$I_C$	Percent Duty Cycle less than 25%, $V_{CC} = 8.5\text{V}$	0	-	300	mA
		Percent Duty Cycle less than 85%, $V_{CC} = 6.5\text{V}$	0	-	150	
"H" Input Voltage	$V_{IH}$	$I_C = 300\text{mA}$	3.2	-	18	V

**Recommended Operational Conditions (Cont'd):** ( $T_A = -20^\circ$  to  $+75^\circ\text{C}$ , unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
"L" Input Voltage	$V_{IL}$	$I_C = 50\mu\text{A}$	0	–	0.7	V
"H" Input Voltage (Strobe Input)	$V_{IH(STB)}$		2.4	–	18	V
"L" Input Voltage (Strobe Input)	$V_{IL(STB)}$		0	–	0.2	V

**Electrical Characteristics:** ( $T_A = -20^\circ$  to  $+75^\circ\text{C}$ , unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Output Sustaining Voltage	$V_{(BR)CEO}$	$V_{CC} = 8\text{V}$ , $V_I = 3.2\text{V}$ , $V_{I(STB)} = 0.2\text{V}$ , $I_{CEO} = 100\mu\text{A}$	20	–	–	V	
Output Saturation Voltage	$V_{CE(sat)}$	$V_I = 3\text{V}$ , $V_{I(STB)} = 2.4\text{V}$	$V_{CC} = 6.5\text{V}$ , $I_C = 250\text{mA}$	–	0.5	0.55	V
			$V_{CC} = 3.0\text{V}$ , $I_C = 120\text{mA}$	–	0.3	0.5	
Input Current	$I_I$	$V_{CC} = 8\text{V}$ , $V_I = 3.2\text{V}$ , $V_{I(STB)} = 2.4\text{V}$	–	–	1.4	mA	
Input Leakage Current	$I_R$	$V_{CC} = 8\text{V}$ , $V_I = -25\text{V}$	–	–	-20	$\mu\text{A}$	
Strobe Input Current	$I_{t(STB)}$	$V_{CC} = 8\text{V}$ , $V_I = 3.2\text{V}$ (all input), $V_{I(STB)} = 0.2\text{V}$	–	-7.9	–	mA	
Strobe Input Leakage Current	$I_{R(STS)}$	$V_{CC} = 8\text{V}$ , $V_I = 0\text{V}$ , $V_{I(STB)} = 20\text{V}$	–	–	20	$\mu\text{A}$	
Clamp Diode Forward Voltage	$V_{F(D)}$	$I_{F(D)} = 320\text{mA}$	–	1.4	2.4	V	
Clamp Diode Reverse Voltage	$V_{R(D)}$	$I_{R(D)} = 100\mu\text{A}$	20	40	–	V	
Supply Current	$I_{CC}$	$V_{CC} = 8\text{V}$ , $V_I = 3.2\text{V}$ (all input), $V_{I(STS)} = 2.4\text{V}$	–	120	200	mA	
DC Forward Current Gain	$h_{FE}$	$V_{CE} = 4\text{V}$ , $V_{CC} = 5.5\text{V}$ , $I_C = 300\text{mA}$ , $T_A = +25^\circ\text{C}$	1000	3000	–	–	

**Functional Table**

IN	STB	OUT
L	L	H
H	L	H
L	H	H
H	H	L

**Pin Connection Diagram**



