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## NTE6880 & NTE6889 Integrated Circuit Bidirectional Bus Transceiver

### **Description:**

The NTE6880 and NTE6889 consists of 4 pairs of TRI-STATE logic elements configured as quad bus drivers/receivers along with separate buffered receiver enable and driver enable lines.

### **Features:**

- TRI-STATE Outputs  
    Inverting (NTE6880)  
    Non-Inverting (NTE6889)
- Low Current PNP Inputs: 200 $\mu$ A Max
- Fast Switching Times: 20ns

### **Absolute Maximum Ratings:** (Note 1)

All Outputs and Supply Voltages .....	-0.5V to +7V
All Input Voltages .....	-1V to 5.5V
Output Currents .....	$\pm$ 150mA
Maximum Power Dissipation ( $T_A = +25^\circ\text{C}$ ), $P_D$ .....	1476mW
Derate Above $+25^\circ\text{C}$ .....	11.8mW/ $^\circ\text{C}$
Storage Temperature, $T_{stg}$ .....	$-65^\circ$ to $+150^\circ\text{C}$
Lead Temperature (Soldering, 4 seconds), $T_L$ .....	$+260^\circ\text{C}$

Note 1. "Absolute Maximum Ratings" are those values beyond which the safety of the device cannot be guaranteed. They are not meant to imply that the devices should be operated at these limits. The tables of "Electrical Characteristics" provide conditions for actual device operation.

### **Recommended Operating Conditions:**

Supply Voltage, $V_{CC}$ .....	4.75 to 5.25V
Operating Temperature Range, $T_A$ .....	$0^\circ$ to $+70^\circ\text{C}$

**Electrical Characteristics:** ( $T_A = 0^\circ$  to  $+70^\circ\text{C}$ , Note 2, Note 3 unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>DRIVER</b>						
Low Level Input Current	$I_{IL}$	$V_{IN} = 0.4V$	–	–	–200	$\mu\text{A}$
Low Level Input Current (Disabled)	$I_{IL}$	$V_{IN} = 0.4V$	–	–	–25	$\mu\text{A}$
High Level Input Current ( $D_{IN}$ , $D_E$ )	$I_{IH}$	$V_{IN} = V_{CC} \text{ Max}$	–	–	25	$\mu\text{A}$
Low Level Output Voltage (Pin3, Pin6, Pin10, Pin18)	$V_{OL}$	$I_{OUT} = 48\text{mA}$	–	–	0.5	V
High Level Output Voltage, (Pin3, Pin6, Pin10, Pin13)	$V_{OH}$	$I_{OUT} = -10\text{mA}$	2.4	–	–	V
Short-Circuit Output Current, (Pin3, Pin6, Pin10, Pin13)	$I_{OS}$	$V_{OUT} = 0V$ , $V_{CC} = V_{CC} \text{ Max}$	–50	–	–150	mA
<b>RECEIVER</b>						
Low Level Input Current	$I_{IL}$	$V_{in} = 0.4V$	–	–	–200	$\mu\text{A}$
High Level Input Current ( $R_E$ )	$I_{IH}$	$V_{IN} = V_{CC} \text{ Max}$	–	–	25	$\mu\text{A}$
Low Level Output Voltage	$V_{OL}$	$I_{OUT} = 20\text{mA}$	–	–	0.5	V
High Level Output Voltage, (Pin2, Pin5, Pin11, Pin14)	$V_{OH}$	$I_{OUT} = -100\mu\text{A}$	3.5	–	–	V
		$I_{OUT} = -2\text{mA}$	2.5	–	–	V
Short-Circuit Output Current, (Pin2, Pin5, Pin11, Pin14)	$I_{OB}$	$V_{OUT} = 0V$ , $V_{CC} = V_{CC} \text{ Max}$	–30	–	–75	mA
<b>BOTH DRIVER AND RECEIVER</b>						
Low Level Input Threshold Voltage	$V_{TL}$	$V_{CC} = \text{Min}$ , $V_{in} = 0.8V$ , $I_{OL} = \text{Max}$	0.85	–	–	V
High Level Input Threshold Voltage	$V_{TH}$	$V_{CC} = \text{Max}$ , $V_{in} = 0.8V$ , $I_{OH} = \text{Max}$	–	–	2	V
Low Level Output OFF Leakage Current	$I_{OZ}$	$V_{OUT} = 0.5V$	–	–	–100	$\mu\text{A}$
High Level Output OFF Leakage Current	$I_{OZ}$	$V_{OUT} = 2.4V$	–	–	100	$\mu\text{A}$
Input Clamp Voltage	$V_I$	$I_{IN} = -12\text{mA}$	–	–	–1.0	V
Power Supply Current	$I_{CC}$	$V_{CC} = V_{CC} \text{ Max}$	–	–	110	mA

Note 2. All currents into device pins are positive, all currents out of device pins are negative. All voltages are referenced to GND unless otherwise specified.

Note 3. Only one output at a time should be shorted.

### Pin Connection Diagram

