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NTE2632
Integrated Circuit
Quad Differential Line Receiver

Functional Description:

The NTE2632 is a quad line receiver constructed using Advanced Low–Power Schottky processing in a 16–Lead DIP type package designed to meet the requirements of RS–422 and RS–423, and federal standards 1020 and 1030 for balanced and unbalanced digital data transmission. This device features and input sensitivity of 200mV over the input voltage range of ±7V.

The NTE2632 provides an enable and disable function common to all four receivers and features 3–state outputs with 8mA sink capability. This device also incorporates a fail safe input–output relationship which keeps the outputs high when the inputs are open.

Features:

- Input Voltage Range of 7V (differential or common mode)
- ±0.2V Sensitivity over the Input Voltage Range
- Meets all the Requirements of RS–422 and RS–423
- 6k Minimum Input Impedance
- 30mV Input Hysteresis
- Operation from Single +5V Supply
- Fail Safe Input–Output Relationship. Output Always High when Inputs are Open
- 3–State Drive, with Choice of Complementary Output Enables, for Receiving Directly onto a Data Bus
- Propagation Delay 17ns Typical
- Advanced Low–Power Schottky Processing
- 100% Reliability Assurance Screening Requirements

Absolute Maximum Ratings: (above which the useful life may be impaired)

Supply Voltage 7.0V
Common Mode Range . . . . . ±25V
Differential Input Voltage . . . . . ±25V
Enable Voltage 7.0V
Output Sink Current 50mA
Storage Temperature Range . . . . . –65°C to +165°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Differential Input Voltage	V_{TH}	$V_{OUT} = V_{OL}$ or V_{OH}, $-7V \le V_{CM} \le +7V$	0.2	0.06	0.2	V
Input Resistance	R_{IN}	$-15V \le V_{CM} \le +15V$ (One input AC ground)	6.0	8.5	–	kΩ
Input Current (Under Test)	I_{IN}	V_{IN} = +15V, Other input $-15V \le V_{IN} \le +15V$	–	–	2.3	mA
		V_{IN} = –15V, Other input $-15V \le V_{IN} \le +15V$	–	–	–2.8	mA
Output HIGH Voltage	V_{OH}	V_{CC} = Min, ΔV_{IN} = +1V, $V_{\overline{ENABLE}}$ = 0.8V, I_{OH} = –440µA	2.7	3.4	–	V
Output LOW Voltage	V_{OL}	V_{CC} = Min, ΔV_{IN} = –1V, $V_{\overline{ENABLE}}$ = 0.8V, I_{OL} = 4mA	–	–	0.4	V
		V_{CC} = Min, ΔV_{IN} = –1V, $V_{\overline{ENABLE}}$ = 0.8V, I_{OL} = 8mA	–	–	0.45	V
Enable LOW Voltage	V_{IL}		–	–	0.8	V
Enable HIGH Voltage	V_{IH}		2.0	–	–	V
Enable Clamp Voltage	V_I	V_{CC} = Min, I_{IN} = –18mA	–	–	–1.5	V
Off–State (High Impedance) Output Current	I_O	V_{CC} = Max, V_O = 2.4V	–	–	+20	µA
		V_{CC} = Max, V_O = 0.4V	–	–	–20	µA
Enable LOW Current	I_{IL}	V_{IN} = 0.4V	–	–0.2	–0.36	mA
Enable HIGH Current	I_{IH}	V_{IN} = 2.7V	–	0.5	20	µA
Enable Input High Current	I_I	V_{IN} = 5.5V	–	1	100	µA
Output Short Circuit Current	I_{SC}	V_O = 0, V_{CC} = Max, ΔV_{IN} = +1V	–15	–50	–85	mA
Power Supply Current	I_{CC}	V_{CC} = Max, All V_{IN} = GND, Outputs Disabled	–	52	70	mA
Input Hysteresis	V_{HYST}	T_A = +25°C, V_{CC} = 5V, V_{CM} = 0	–	30	–	mV
Input to Output	t_{PLH}	T_A = +25°C, V_{CC} = 5V, C_L = 15pF	–	17	25	ns
	t_{PHL}		–	17	25	ns
Enable to Output	t_{LZ}	T_A = +25°C, V_{CC} = 5V, C_L = 5pF	–	20	30	ns
	t_{HZ}		–	15	22	ns
	t_{LZ}	T_A = +25°C, V_{CC} = 5V, C_L = 15pF	–	15	22	ns
	t_{HZ}		–	15	22	ns

Note 1. All typical values are V_{CC} = 5V, T_A = +25°C.

Pin Connection Diagram