

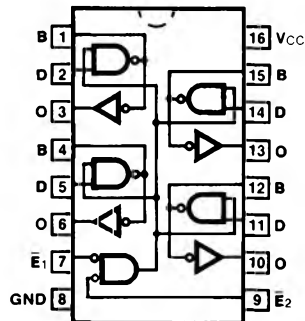
## 96103 QUAD BUS TRANSCEIVER (With Common Enable)

**DESCRIPTION** — Each transceiver contains an open-collector buffer whose output is common to an inverting gate input. When both Enable inputs ( $\bar{E}_1$  and  $\bar{E}_2$ ) are LOW, the buffer is enabled, with its output state determined by its Data (D) input. When either Enable input is HIGH, the buffer is disabled (output OFF) and the bus signal is determined by other circuits connected to the bus. The receiver gate has greater input noise immunity than standard TTL, while its output signal levels are standard TTL. In the power-down condition, the B terminal leakage is limited to 100  $\mu$ A.

**ORDERING CODE:** See Section 9

PKGS	PIN OUT	COMMERCIAL GRADE	MILITARY GRADE	PKG TYPE
		$V_{CC} = +5.0 \text{ V} \pm 5\%$ , $T_A = 0^\circ \text{C to } +75^\circ \text{C}$	$V_{CC} = +5.0 \text{ V} \pm 10\%$ , $T_A = -55^\circ \text{C to } +125^\circ \text{C}$	
Plastic DIP (P)	A	96103PC		9B
Ceramic DIP (D)	A	96103DC	96103DM	6B
Flatpak (F)	A	96103FC	96103FM	4L

### CONNECTION DIAGRAM PINOUT A



$V_{CC}$  = Pin 16  
GND = Pin 8

**INPUT LOADING/FAN-OUT:** See Section 3 for U.L. definitions

PIN NAMES	DESCRIPTION	96XX (U.L.) HIGH/LOW
D	Data Input	1.0/1.0
$\bar{E}_1, \bar{E}_2$	Enable Inputs (Active LOW)	1.0/1.0
B	Bus Terminal, as Input as Output	2.5/0.05
O	Receiver Output	OC* /70 mA 50/12.5

\*OC — Open Collector

**DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE** (unless otherwise specified)

SYMBOL	PARAMETER	96XX		UNITS	CONDITIONS
		Min	Max		
V <sub>OL</sub>	Output LOW Voltage at B		0.7	V	I <sub>OL</sub> = 70 mA, V <sub>IH</sub> = 2.0 V V <sub>CC</sub> = Min
V <sub>IL</sub>	Input LOW Voltage at D or $\bar{E}$	XC	0.8	V	
		XM	0.7		
V <sub>IHR</sub>	Receiver HIGH Threshold Voltage	XC	1.53	V	V <sub>CC</sub> = Min
		XM	1.49		
		XC	1.7	V	V <sub>CC</sub> = Max
		XM	1.84		
V <sub>ILR</sub>	Receiver LOW Threshold Voltage	XC	1.3	V	V <sub>CC</sub> = Min
		XM	1.21		
		XC	1.47	V	V <sub>CC</sub> = Max
		XM	1.56		
I <sub>OH</sub>	Bus Output HIGH Current		100	$\mu$ A	V <sub>CC</sub> = 0 V to Max V <sub>OH</sub> = 4.0 V, V <sub>D</sub> = V <sub>IL</sub>
I <sub>IL</sub>	Input LOW Current at B		-85	$\mu$ A	V <sub>OUT</sub> = 0 V, V <sub>CC</sub> = Max V <sub>D</sub> = V <sub>IL</sub>
I <sub>OS</sub>	Output Short Circuit Current at O	-18	-55	mA	V <sub>CC</sub> = Max, V <sub>OUT</sub> = 0 V
I <sub>CC</sub>	Power Supply Current		90	mA	D input = 4.5 V V <sub>CC</sub> = Max

**AC CHARACTERISTICS:** V<sub>CC</sub> = +5.0 V, T<sub>A</sub> = +25°C (See Section 3 for waveforms and load configurations)

SYMBOL	PARAMETER	96XX		UNITS	CONDITIONS
		C <sub>L</sub> = 15 pF			
		Min	Max		
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay $\bar{E}_1$ or $\bar{E}_2$ to B		30 23	ns	R <sub>L</sub> = 91 $\Omega$ to V <sub>CC</sub> , 200 $\Omega$ to Gnd Figs. 3-4, 3-5
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay D to B		25 15		
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay B to O	10 10	30 30	ns	R <sub>L</sub> = 390 $\Omega$ to V <sub>CC</sub> 1.6 k $\Omega$ to Gnd, Fig. 3-4
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay B to O	10 10	35 35		
					R <sub>L</sub> = 390 $\Omega$ to V <sub>CC</sub> 1.6 k $\Omega$ to Gnd C <sub>L</sub> = 50 pF, Fig. 3-4