

With 5 V Tolerant Inputs

74LCX157

The LCX157 is a high-speed quad 2-input multiplexer. Four bits of data from two sources can be selected using the common Select and Enable inputs. The four outputs present the selected data in the true (non-inverted) form.

The LCX157 can also be used as a function generator.

The 74LCX157 is fabricated with advanced CMOS technology to achieve high speed operation while maintaining CMOS low power dissipation.

Features

- 5 V Tolerant Inputs
- 1.65 V to 5.5 V, V_{CC}

$\overline{\mathrm{E}}$		_{0b} I ₁	_b I _{0c} I ₁	c I _{0d} 1	I _{1d}
S					
	Za	Z _b	Z _c	Zd	
	Ι	EEE/IE	C		
$\overline{\mathrm{E}}$	EN				
S	G1				
I _{0a} I _{1a}	$\overline{1}$ 1	MN			Za
I _{Ob} I _{1b}					Z _b
I _{Od} I _{1d}					Zd
I_{0c} I_{1c}					Zc

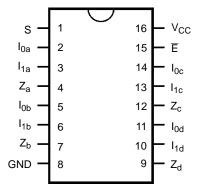


Figure 2. Connection Diagram

Functional Description

PIN DESCRIPTIONS

Pin Names	Description
I _{0a} -I _{0d}	Source 0 Data Inputs
I _{1a} -I _{1d}	Source 1 Data Inputs
Ē	Enable Input
S	Select Inputs
Z _a -Z _d	Outputs

ABSOLUTE MAXIMUM RATINGS

Symbol

DC ELECTRICAL CHARACTERISTICS

				T _A = -40°0	C to +85°C	T _A = -40°C	to +125°C	
Symbol	Parameter	Conditions	V _{CC} (V)	Min	Max	Min	Max	Unit
V _{IH}	HIGH Level Input Voltage		1.65 – 1.95	$0.65 \times V_{CC}$	-	$0.65 \times V_{CC}$	-	V
			2.3 – 2.7	1.7	-	1.7	-	
			3.0 - 3.6	2.0	-	2.0	-	
			4.5 – 5.5	0.70 x V _{CC}	-	0.70 x V _{CC}	-	
V _{IL}	LOW Level Input Voltage		1.65 – 1.95	-	$0.35 \times V_{CC}$	-	$0.35 \times V_{CC}$	V
			2.3 – 2.7	-	0.7	-	0.7	
			3.0 - 3.6	-	0.8	-	0.8	
			4.5 – 5.5	-	$0.30 \times V_{CC}$	-	$0.30 \times V_{CC}$	
V _{OH}	High-Level Output Voltage	$V_{I} = V_{IH} \text{ or } V_{IL}$		-	-	-	-	•

High-Level Output Voltage	$V_{I} = V_{IH} \text{ or } V_{IL}$
	I _{OH} = −100 μA
	I _{OH} = -4 mA
	I _{OH} = -8 mA
	I _{OH} = -12 mA
	I _{OH} = –16 mA

AC ELECTRICAL CHARACTERISTICS

				T _A = -40°C to +85°C		T _A = -40°C	C to +125°C	
Symbol	Parameter	Test Condition	V _{CC} (V)	Min	Max	Min	Max	Unit
t _{PLH} , t _{PHL}	Propagation Delay,	ation Delay, See Figures 4 and 5 1.65	1.65 to 1.95	-	11.6	-	11.6	ns
	S to Z _n		2.3 to 2.7	-	8.4	-	8.4	
			2.7	-	8.0	-	8.0	
			3.0 to 3.6	-	7.0	-	7.0	
			4.5 to 5.5	-	5.8	-	5.8	
t _{PLH} , t _{PHL}	Propagation Delay,	See Figures 4 and 5	1.65 to 1.95	-	11.6	-	11.6	ns
	E to Z _n		2.3 to 2.7	-	8.4	-	8.4	
			2.7	-	8.0	-	8.0	
			3.0 to 3.6	-	7.0	-	7.0	
			4.5 to 5.5	-	5.8	-	5.8	
t _{PLH} , t _{PHL}	Propagation Delay, I _n to Z _n		1.65 to 1.95	-	11.2	-	11.2	ns
			2.3 to 2.7	-	7.0	-	7.0	
			2.7	-	6.3	-	6.3	
			3.0 to 3.6	-	5.8	-	5.8	
			4.5 to 5.5	-	4.8	-	4.8	
t _{OSHL} ,	Output to Output Skew		1.65 to 1.95	-	-	-	-	ns
tOSLH	(Note 5)		2.3 to 2.7	-	-	-	-	
			2.7	-	-	-	-	
			3.0 to 3.6	-	1.0	-	1.0	
			4.5 to 5.5	-	-	-	-	

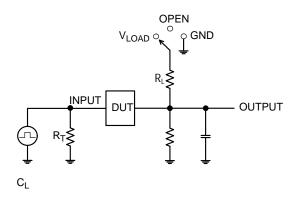
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
5. Skew is defined as the absolute value of the difference between the actual propagation delay for any two separate outputs of the same device. The specification applies to any outputs switching in the same direction, either HIGH-to-LOW (t_{OSHL}) or LOW-to-HIGH (t_{OSLH}).

DYNAMIC SWITCHING CHARACTERISTICS

				T _A = 25°C	
Symbol	Parameter	Conditions	V _{CC} (V)	Typical	Unit
V _{OLP}	Quiet Output Dynamic Peak V _{OL}	C_{L} = 50 pF, V_{IH} = 3.3 V, V_{IL} = 0 V	3.3	0.8	V
		C_L = 30 pF, V_{IH} = 2.5 V, V_{IL} = 0 V	2.5	0.6	
V _{OLV}	Quiet Output Dynamic Valley V_{OL}	C_{L} = 50 pF, V_{IH} = 3.3 V, V_{IL} = 0 V	3.3	-0.8	V
		C_L = 30 pF, V_{IH} = 2.5 V, V_{IL} = 0 V	2.5	-0.6	

CAPACITANCE

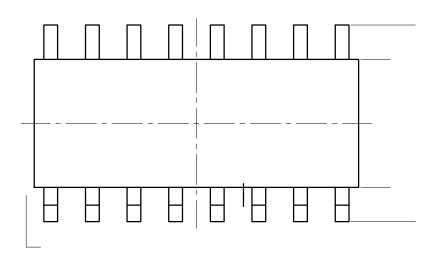
Symbol	Parameter	Condition	Typical	Units
C _{IN}	Input Capacitance	$V_{CC} = Open, V_I = 0 V or V_{CC}$	7	pF
C _{OUT}	Output Capacitance	V_{CC} = 3.3 V, V_{I} = 0 V or V_{CC}	8	pF
C _{PD}	Power Dissipation Capacitance	V_{CC} = 3.3 V, V_{I} = 0 V or V_{CC},f = 10 MHz	25	pF

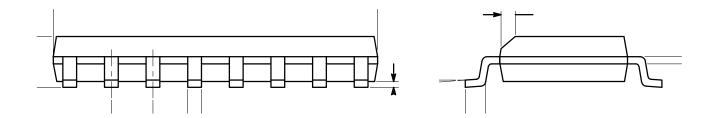




SOIC-16, 150 mils CASE 751BG ISSUE O

DATE 19 DEC 2008



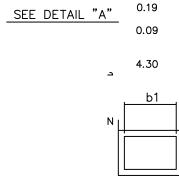


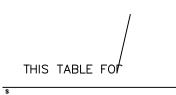
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т Мв. —			
Ľ	MIN.		
A			
A1	0.05	2	0.05
A₂ b		С	0.95 0.30
b b1		1	0.30
c			0.20
c1			0.16
D		I.	
E1			4.50
C		0.65 BSC	
Е		6.40 BSC	
L		0.60	0.70
	SEE		c
	SEE		ຂ•
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