

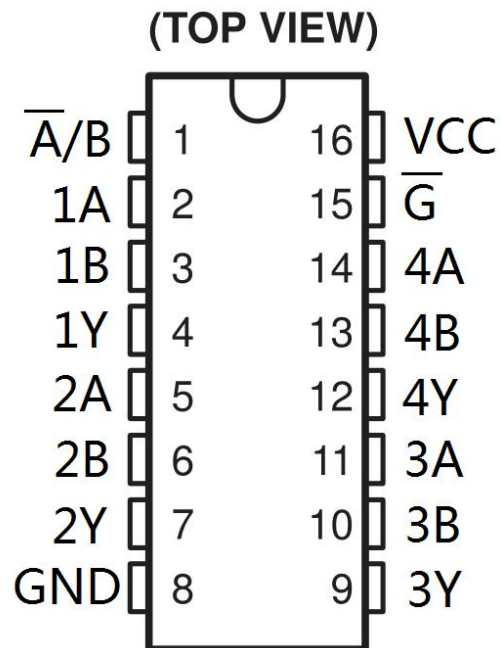
1. DESCRIPTION

These monolithic data selectors/multiplexers contain inverters and drivers to supply full on-chip data selection to the four output gates. A separate strobe input is provided. A 4-bit word is selected from one of two sources and is routed to the four outputs. The 'LS157 present true data to minimize propagation delay time.

2. FEATURES

- Buffered Input and Outputs
- Three Speed/Power Ranges Available

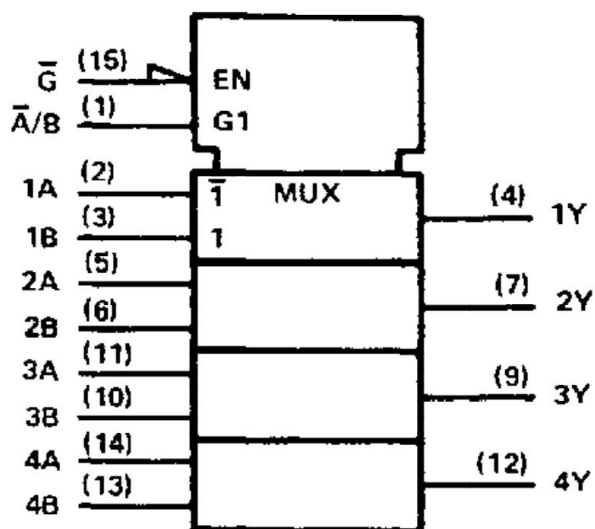
3. PIN CONFIGURATIONS



4. APPLICATIONS

- Expend Any Data Input Point
- Multiplex Dual Data Buses
- Generate Four Functions of Two Variables
(One Variable is Common)
- Source Programmable Counters

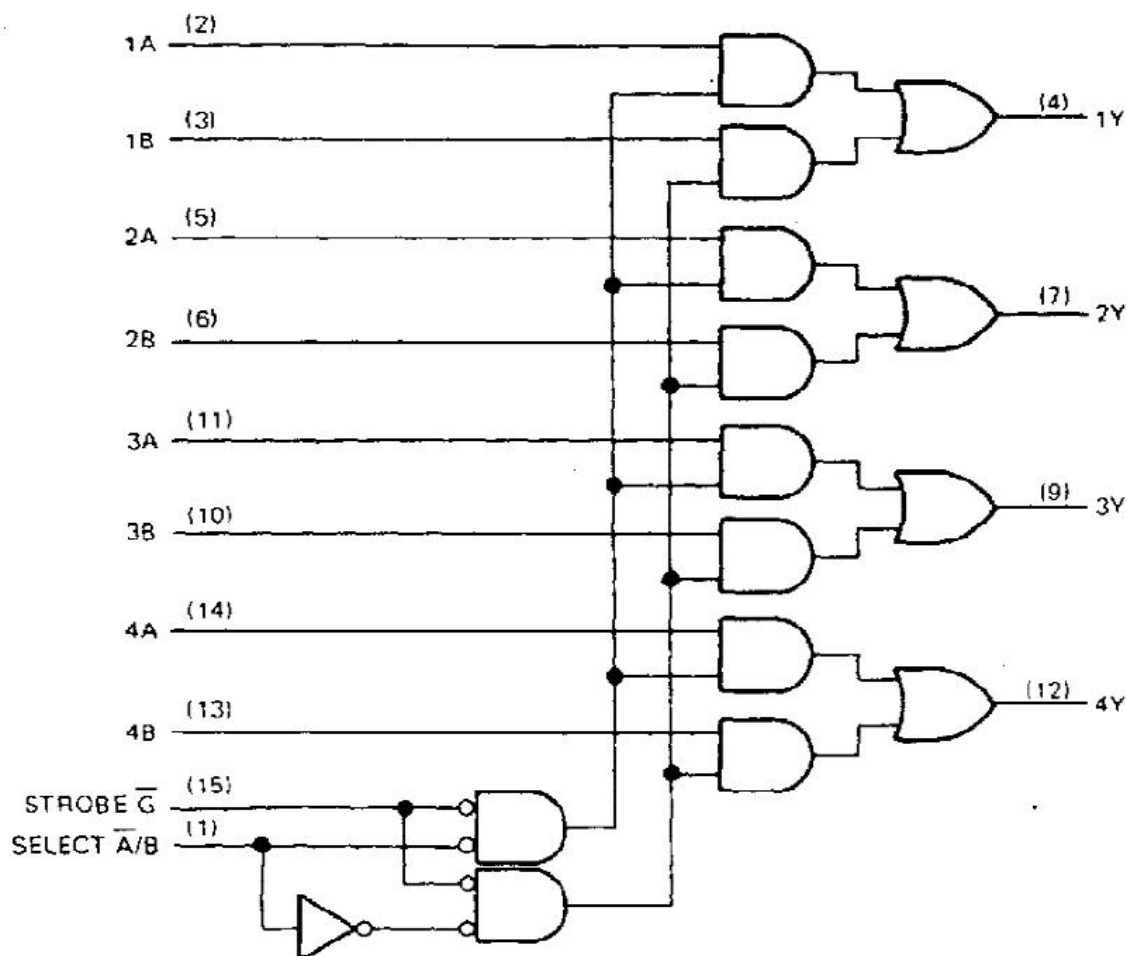
5. LOGIC SYMBOLS



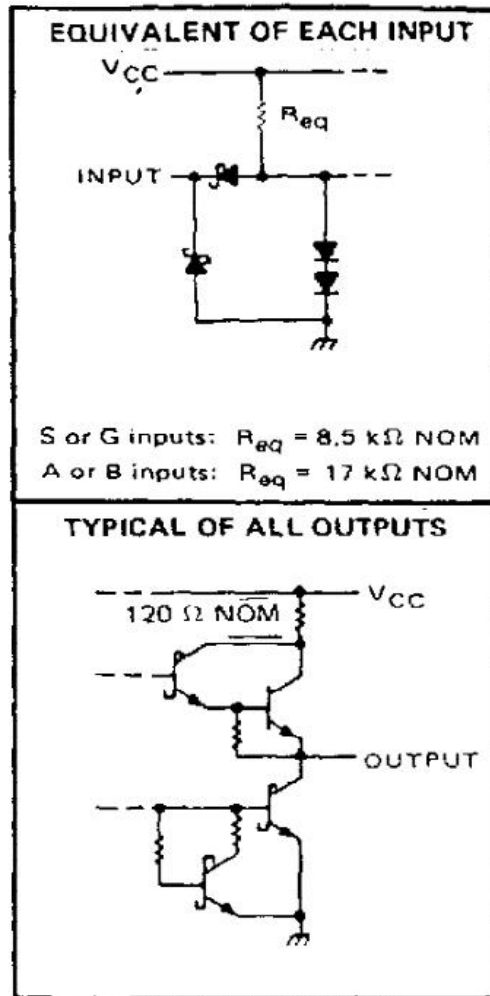
FUNCTION TABLE

INPUTS				OUTPUT
STROGE $\overline{G}$	SELECT $\overline{A/B}$	A	B	'LS157
H	X	X	X	L
L	L	L	X	L
L	L	H	X	H
L	H	X	L	L
L	H	X	H	H

6. LOGIC DIAGRAMS



7. SCHEMATICS OF INPUTS AND OUTPUTS



8. ABSOLUTE MAXIMUM RATINGS OVER OPERATING FREE-AIR TEMPERATURE RANGE (UNLESS OTHERWISE NOTES)

Supply voltage, V_{CC}	7V
Input voltage, V_I : 74LS157.....	7V
Operating free-air temperature range: SOP package.....	0°C to 70°C
DIP package.....	0°C to 70°C
Storage temperature range, T_{stg}	-65°C to 150°C

[†] Stresses beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

9. RECOMMENDED OPERATING CONDITIONS

		74LS157			UNIT
		MIN	NOM	MAX	
V _{CC}	Supply voltage	4.75	5	5.25	V
I _{OH}	High-level output current			-400	μA
I _{OL}	Low-level output current			8	mA
T _A	Operating free-air temperature	0		70	°C

10. ELECTRICAL CHARACTERISTICS OVER RECOMMENDED OPERATING FREE-AIR RANGE (UNLESS OTHERWISE NOTED)

PARAMETER			74LS157			UNIT
			MIN	TYP [‡]	MAX	
V _{IH}	High-level input voltage		2			V
V _{IL}	Low-level input voltage				0.8	V
V _{IK}	Input clamp voltage	V _{CC} = MIN, I _I = -18 mA			-1.5	V
V _{OH}	High-level output voltage	V _{CC} = MIN, V _{IL} = 0.8 V, V _{IH} = 2 V, I _{OH} = -400 μA	2.7	3.4		V
V _{OL}	Low-level output voltage	V _{CC} = MIN, V _{IH} = 2 V, V _{IL} = V _{IL} MAX	I _{OL} = 4 mA		0.25	V
			I _{OL} = 8 mA		0.35	
I _I	Input current at maximum input voltage	$\overline{A/B}$ or $\overline{G}$	V _{CC} = MAX, V _I = 7 V		0.2	mA
		$\overline{A}$ or B			0.1	
I _{IH}	High-level input current	$\overline{A/B}$ or $\overline{G}$	V _{CC} = MAX, V _I = 2.7 V		40	μA
		$\overline{A}$ or B			20	
I _{IL}	Low-level input current	$\overline{A/B}$ or $\overline{G}$	V _{CC} = MAX, V _I = 0.4 V		-0.8	mA
		$\overline{A}$ or B			-0.4	
I _{OS}	Short-circuit output current [§]	V _{CC} = MAX	-20		-100	mA
I _{CC}	Supply current	V _{CC} = MAX, Output open, All inputs at 4.5V	9.7		16	mA

[†] For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.

[‡] All typical values are at V_{CC} = 5 V, T_A = 25°C.

[§] Not more than one output should be shorted at a time.

11. SWITCHING CHARACTERISTICS, $V_{CC} = 5\text{ V}$, $T_A = 25^\circ\text{C}$

switching characteristics, $V_{CC} = 5\text{ V}$, $T_A = 25^\circ\text{C}$

PARAMETER [†]	FROM (INPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t _{PLH}	Data	C _L = 15 pF, R _L = 2 kΩ	9	14	ns	
t _{PHL}			9	14		
t _{PLH}	Strobe $\overline{G}$		13	20	ns	
t _{PHL}			14	21		
t _{PLH}	Select $\overline{A/B}$		16	23	ns	
t _{PHL}			18	27		

[†] t_{PLH} = propagation delay time, low-to-high-level output

t_{PHL} = propagation delay time, high-to-low-level output

12. ORDERING INFORMATION

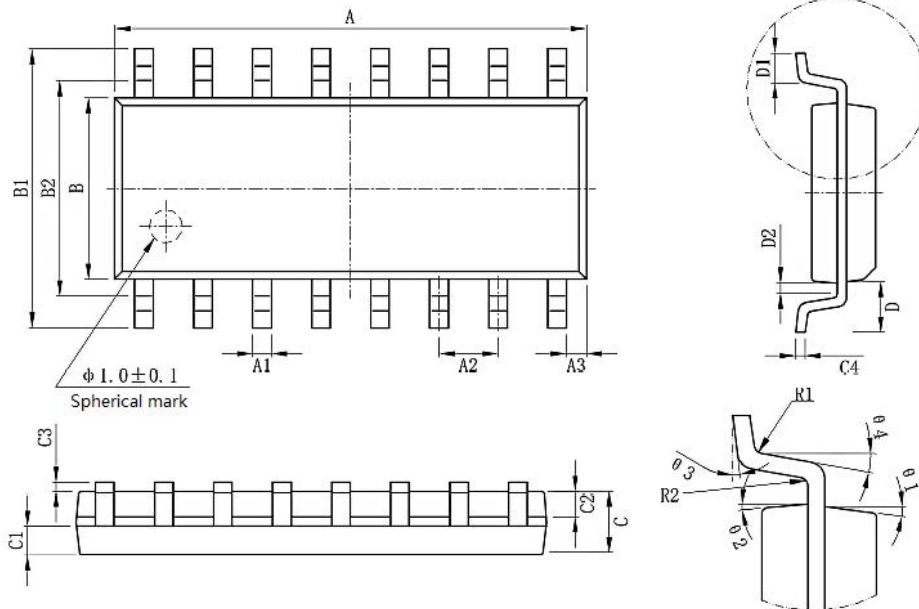
Ordering Information

Part Number	Device Marking	Package Type	Body size (mm)	Temperature (°C)	MSL	Transport Media	Package Quantity
XL74LS157	XL74LS157	SOP16	10.00 * 3.95	-0 to 70	MSL3	T&R	2500
XD74LS157	XD74LS157	DIP16	19.05 * 6.35	-0 to 70	MSL3	Tube 25	1000

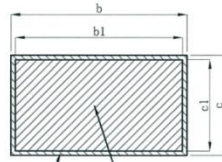
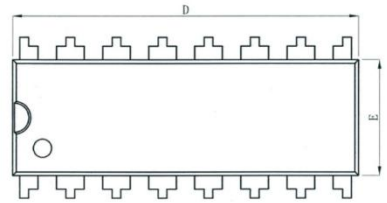
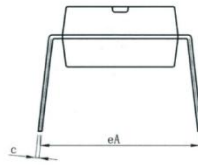
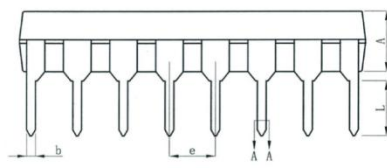
13. DIMENSIONAL DRAWINGS

SOP16

MARK	SYM	MIN (mm)	MAX (mm)	MARK	SYM	MIN (mm)	MAX (mm)
A		9.80	10.00	C4		0.203	0.233
A1		0.356	0.456	D		1.05TYP	
A2		1.27TYP		D1		0.40	0.70
A3		0.302TYP		D2		0.15	0.25
B		3.85	3.95	R1		0.20TYP	
B1		5.84	6.24	R2		0.20TYP	
B2		5.00TYP		θ 1		8° ~ 12° TYP4	
C		1.40	1.60	θ 2		8° ~ 12° TYP4	
C1		0.61	0.71	θ 3		0° ~ 8°	
C2		0.54	0.64	θ 4		4° ~ 12°	
C3		0.05	0.25				



DIP16



WITH PLATING ——— BASE METAL

symbol	millimeter		
	Min	Nom	Max
A	3.20	3.30	3.40
b	0.44	----	0.53
b1	0.43	0.46	0.49
c	0.25	----	0.30
c1	0.24	0.25	0.26
D	18.95	19.05	19.15
E	6.25	6.35	6.45
e	2.54BSC		
eA	8.30	8.80	9.30
L	3.00	----	----

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