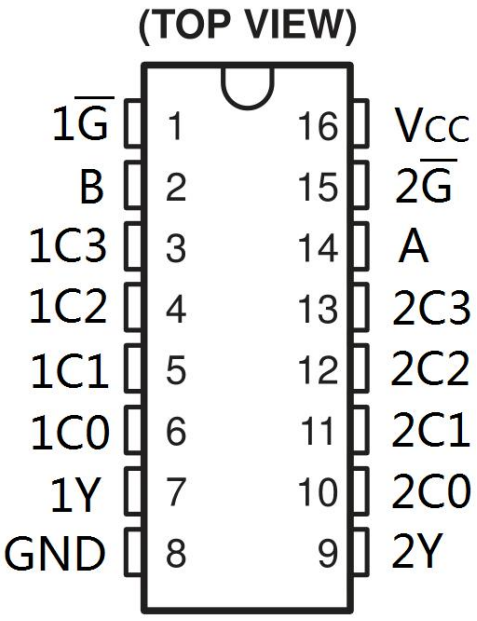
1. DESCRIPTION

Each of these monolithic, data selectors/multiplexers contains inverters and drivers to supply fully complementary, on-chip, binary decoding decoding data selection to the AND-OR gates .Separate strobe inputs are provided for each of the two four-line sections.

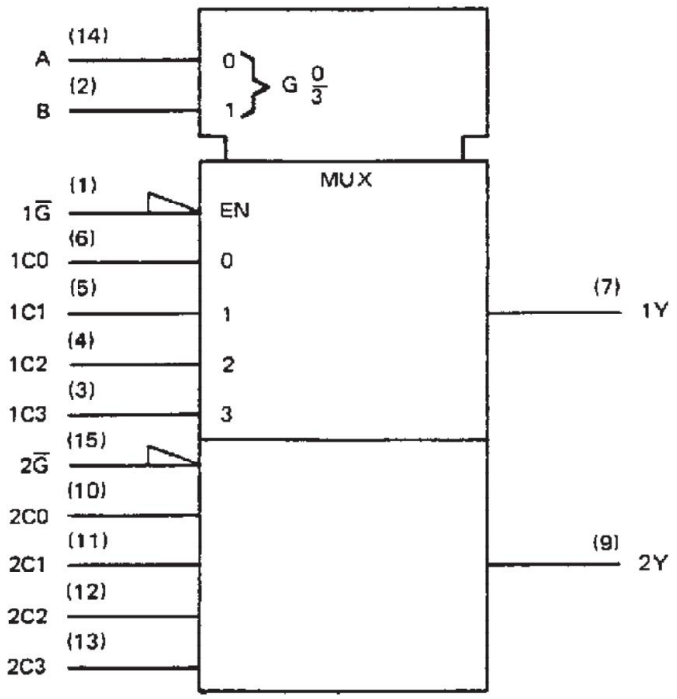
2. FEATURES

- Permits Multiplexing from N lines to 1line
- Performs Parallel-to-Serial Conversion
- Strobe(Enable) Line Provided for Cascading(N lines to n lines)
- High-Fan-Out, Low-Impedance,Totem-Pole Outputs
- Fully Compatible with most TTL Circuits

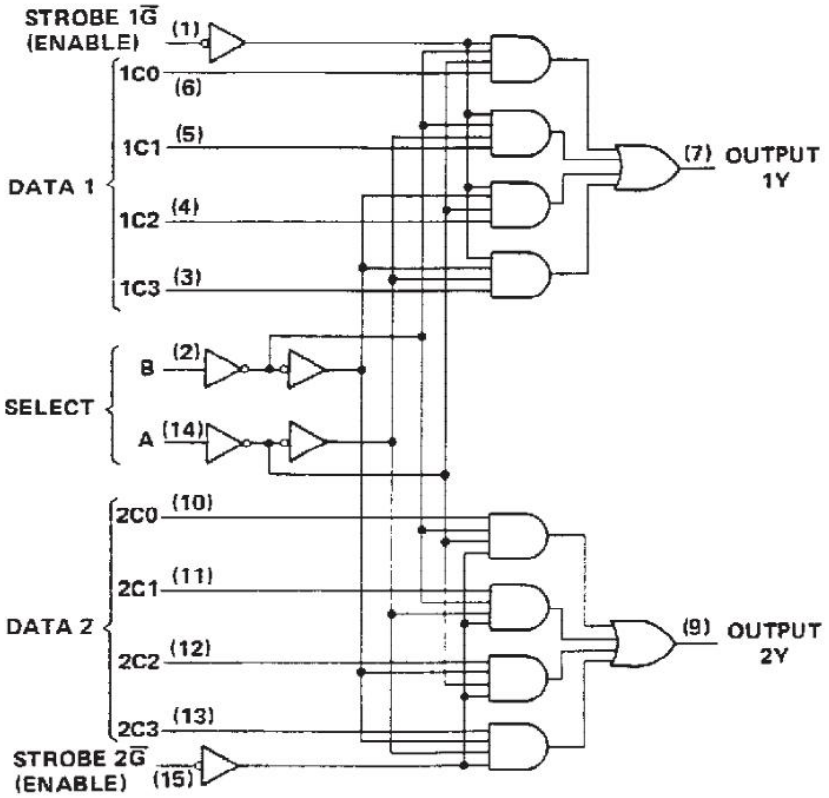
3. PIN CONFIGURATIONS



4. LOGIC SYMBOL

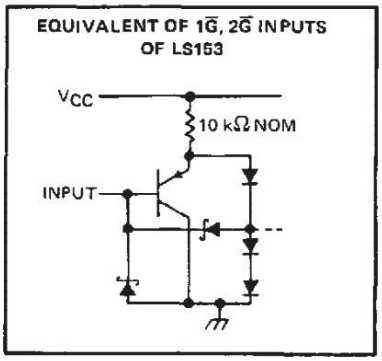


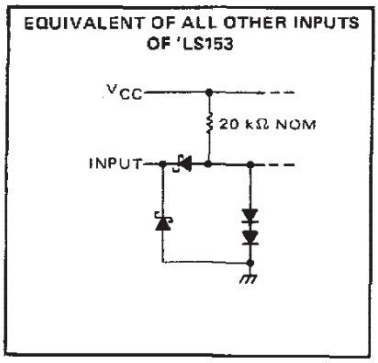
5. LOGIC DIAGRAMS

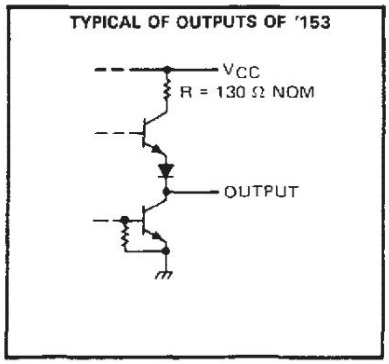


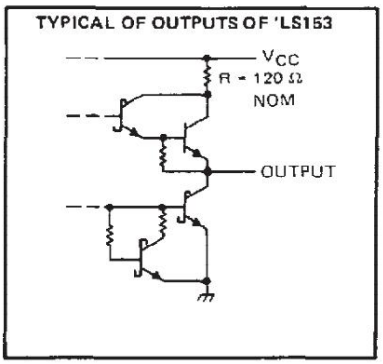
SELECT INPUTS		DATA INPUTS				STROBE	OUTPUT
B	A	C0	C1	C2	C3	$\overline{G}$	Y
X	X	X	X	X	X	H	L
L	L	L	X	X	X	L	L
L	L	H	X	X	X	L	H
L	H	X	L	X	X	L	L
L	H	X	H	X	X	L	H
H	L	X	X	L	X	L	L
H	L	X	X	H	X	L	H
H	H	X	X	X	L	L	L
H	H	X	X	X	H	L	H

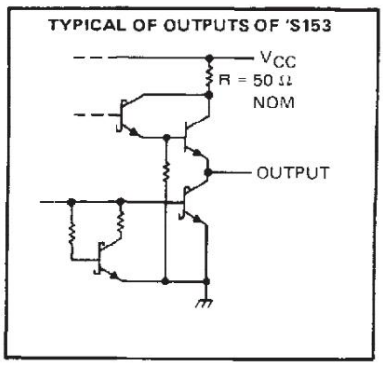
6. SCHEMATICS OF INPUTS AND OUTPUTS











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

Supply voltage, V_{CC} 7V

Input voltage, VI: 74LS153..... 7V

Operating free-air temperature range: DIP package..... 0°C to 70°C

Storage temperature range, Tstg..... −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.

8. RECOMMENDED OPERATING CONDITIONS

		74LS153			UNIT
		MIN	NOM	MAX	
V_{CC}	Supply voltage	4.75	5	5.25	V
V_{IH}	High-level input voltage	2			V
V_{IL}	Low-level input voltage			0.8	V
I_{OH}	High-level output current			−0.4	mA
I_{OL}	Low-level output current			8	mA
T_A	Operating free-air temperature	0		70	°C

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

PARAMETER			TEST CONDITIONS†		74LS153			UNIT
					MIN	TYP‡	MAX	
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	0.4	V
				I_{OL} = 8 mA		0.35	0.5	
I_I		Input current at maximum input voltage	V_{CC} = MAX,	V_I = 7 V			0.1	mA
I_{IH}		High-level input current	V_{CC} = MAX,	V_I = 2.7 V			20	μA
I_{IL}	$\overline{1G}$,$\overline{2G}$	Low-level input current	V_{CC} = MAX,	V_I = 0.4 V			−0.4	mA
	All other							
I_{OS}		Short-circuit output current§	V_{CC} = MAX		−20		−100	mA
I_{CC}		Supply current	V_{CC} = MAX			6.2	10	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.

10. SWITCHING CHARACTERISTICS,VCC = 5 V, TA = 25℃

switching characteristics, V_{CC} = 5 V, T_A = 25°C

PARAMETER†	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_{PLH}	Data	Y	C_L = 15 pF, R_L = 2 kΩ		10	15	ns
t_{PHL}	Data	Y			17	26	ns
t_{PLH}	Select	Y			19	29	ns
t_{PHL}	Select	Y			25	38	ns
t_{PLH}	Strobe $\overline{G}$	Y			16	24	ns
t_{PHL}	Strobe $\overline{G}$	Y			21	32	ns

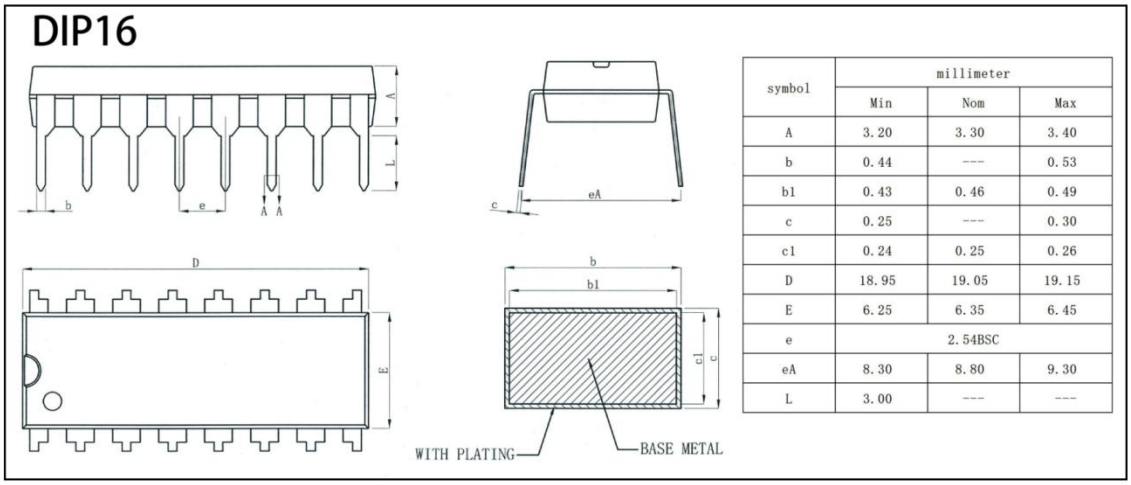
† t_{PLH} = propagation delay time, low-to-high-level output
t_{PHL} = propagation delay time, high-to-low-level output

11. ORDERING INFORMATION

Ordering Information

Part Number	Device Marking	Package Type	Body size (mm)	Temperature (°C)	MSL	Transport Media	Package Quantity
XD74LS153	XD74LS153	DIP16	19.05 * 6.35	-0 to 70	MSL3	Tube 25	1000

12. DIMENSIONAL DRAWINGS



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	---	---