

1. DESCRIPTION

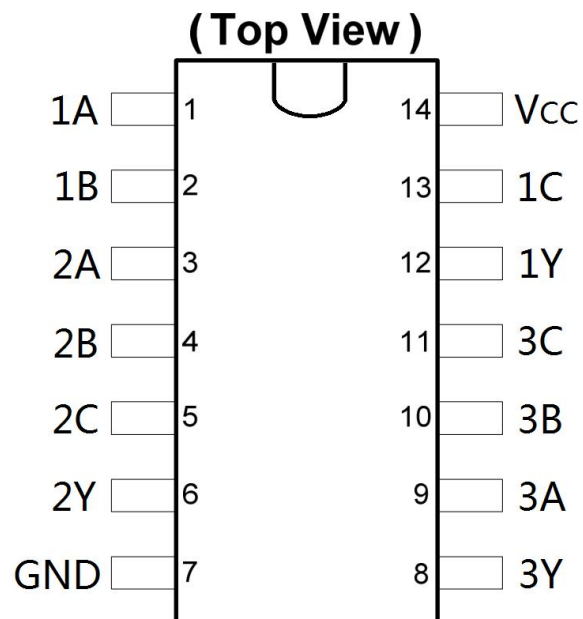
These devices contain three independent 3-input NOR gates.

The XL/XD74LS27 is characterized for operation from 0°C to 70°C.

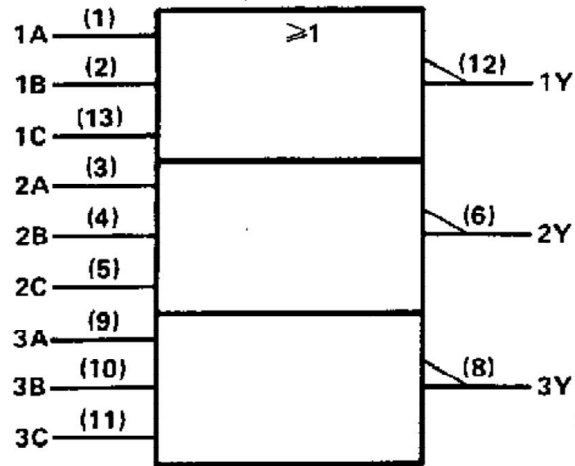
2. FEATURES

- Package Options Include Plastic "Small Outline" Packages, Ceramic Chip Carriers and Flat Packages, and Plastic and Ceramic DIPS

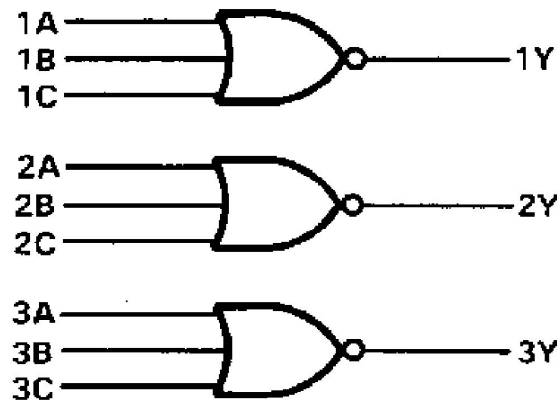
3. PIN CONFIGURATIONS



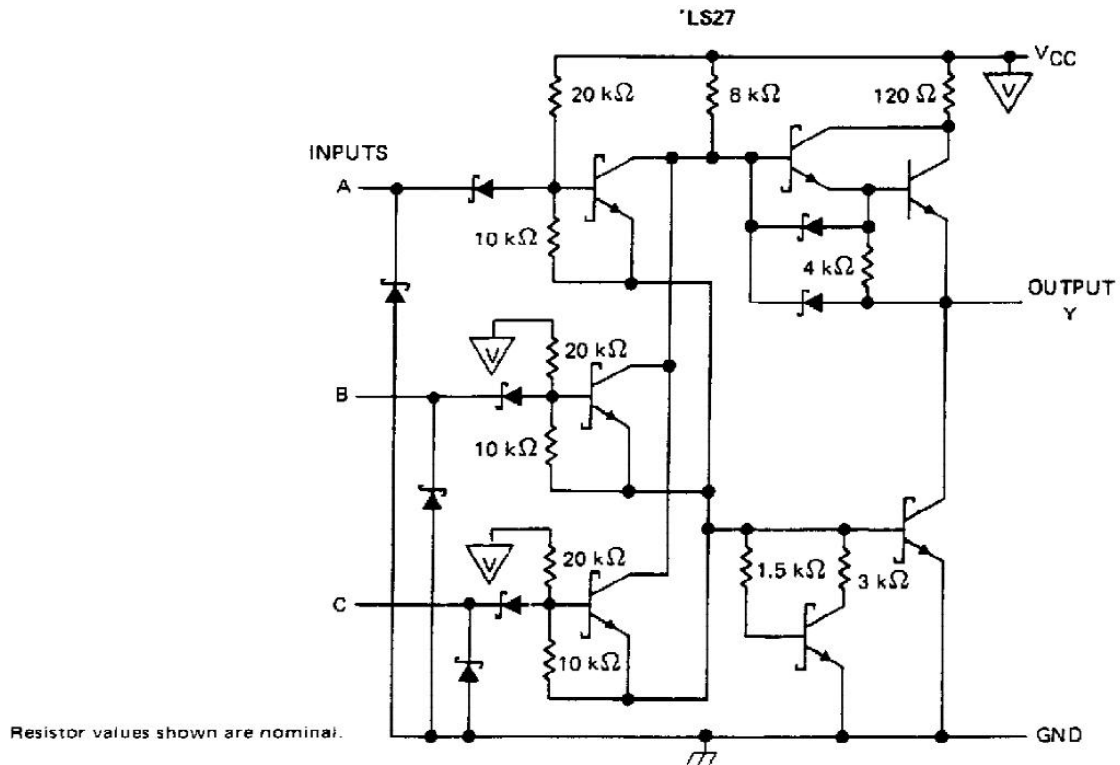
4. LOGIC SYMBOL



5. LOGIC DIAGRAM



6. SCHEMATICS (each gate)



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

Supply voltage, V_{CC} (see Note 1).....	7V
Input voltage, V_I : 74LS27.....	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

NOTE 1 : Voltage values are with respect to network ground terminals.

8. RECOMMENDED OPERATING CONDITIONS

		XL/XD74LS27			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 [†]	XL/XD74LS27			UNIT
		MIN	TYP [‡]	MAX	
V _{IK}	V _{CC} = MIN, I _I = -18 mA			-1.5	V
V _{OH}	V _{CC} = MIN, V _{IL} = MAX, I _{OH} = -0.4 mA	2.7	3.4		V
V _{OL}	V _{CC} = MIN, V _{IH} = 2 V		0.25	0.4	V
			0.35	0.5	
I _I	V _{CC} = MAX, V _I = 7 V			0.1	mA
I _{IH}	V _{CC} = MAX, V _I = 2.7 V			20	μA
I _{IL}	V _{CC} = MAX, V _I = 0.4 V			-0.4	mA
I _{OS} [§]	V _{CC} = MAX	-20		-100	mA
I _{CCH}	V _{CC} = MAX, V _I = 4.5 V		2	4	mA
I _{CCL}	V _{CC} = MAX, V _I = 0 V		3.4	6.8	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, and the duration of the short-circuit should not exceed one second.

10. SWITCHING CHARACTERISTICS,V_{CC} = 5 V, T_A = 25°C (see Figure 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	XL/XD74LS27			UNIT
				MIN	TYP	MAX	
t _{PLH}	Any	Y	R _L = 2 kΩ, CL = 15 pF		10	15	ns
t _{PHL}					10	15	ns

NOTE 2: Load circuits and voltage waveforms are shown in Section 1.

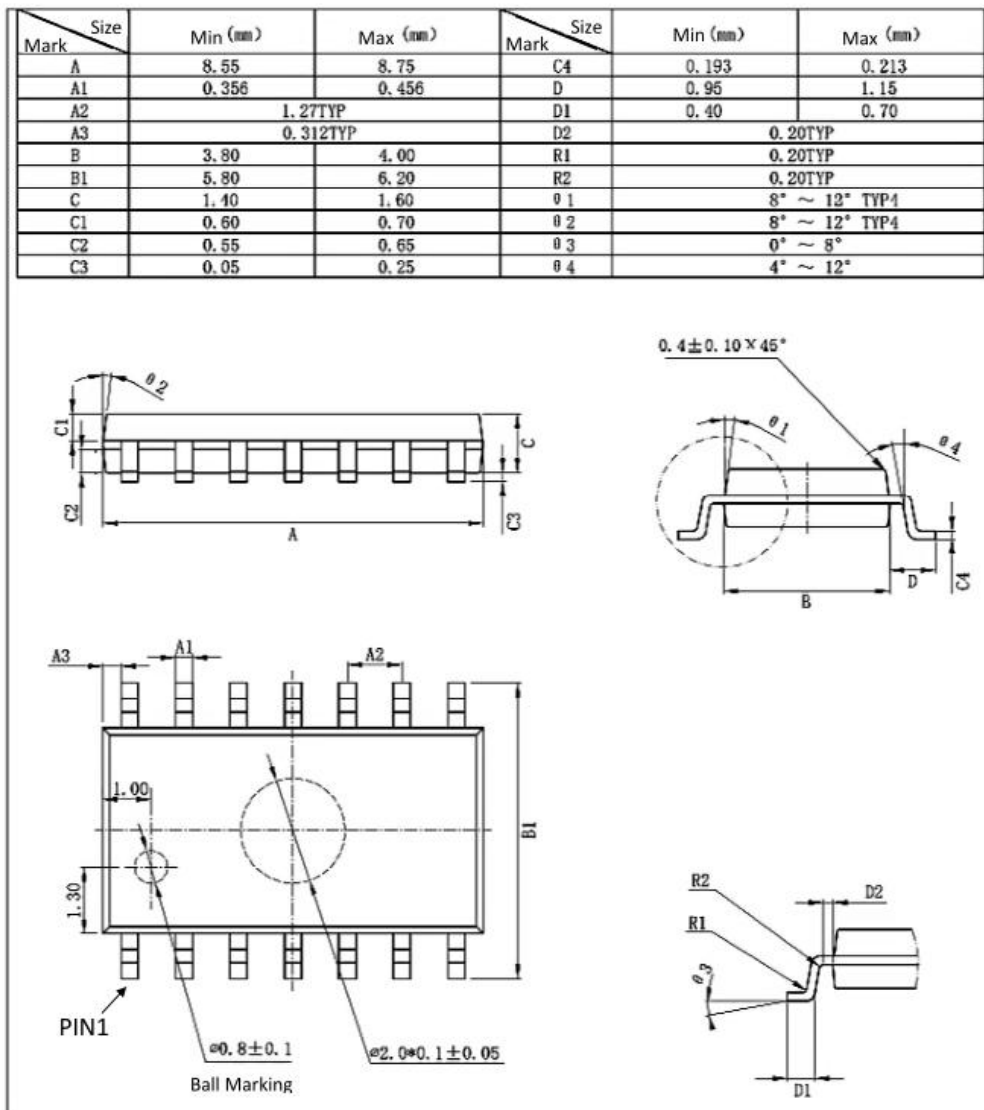
11. ORDERING INFORMATION

Ordering Information

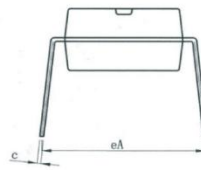
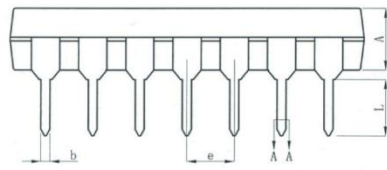
Part Number	Device Marking	Package Type	Body size (mm)	Temperature (°C)	MSL	Transport Media	Package Quantity
XL74LS27	XL74LS27	SOP14	8.75 * 4.00	-0 to 70	MSL3	T&R	2500
XD74LS27	XD74LS27	DIP14	19.05 * 6.35	-0 to 70	MSL3	Tube 25	1000

12. DIMENSIONAL DRAWINGS

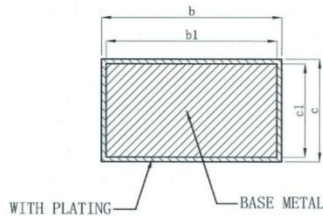
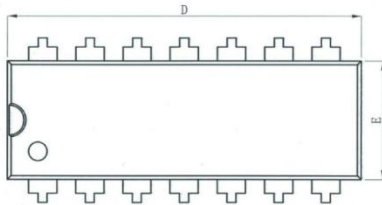
SOP14



DIP14



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	—	—



SECTION A-A