FUNCTION TABLE (each gate)

INPUTS			OUTPUT
A	B	C	Y
H	X	X	L
X	H	X	L
X	X	H	L
L	L	L	H

XD74LS27
(TOP VIEW)

1A	1	14	V$_{CC}$
1B	2	13	1C
2A	3	12	1Y
2B	4	11	3C
2C	5	10	3B
2Y	6	9	3A
GND	7	8	3Y

logic symbol†

1A (1)
1B (2)
1C (13)
≥1
1Y (12)

2A (3)
2B (4)
2C (5)
2Y (6)

3A (9)
3B (10)
3C (11)
3Y (8)

logic diagram

1A
1B
1C
1Y

2A
2B
2C
2Y

3A
3B
3C
3Y
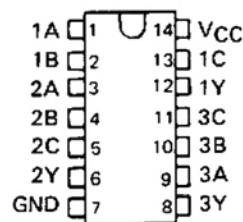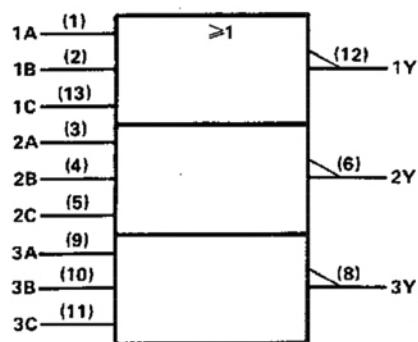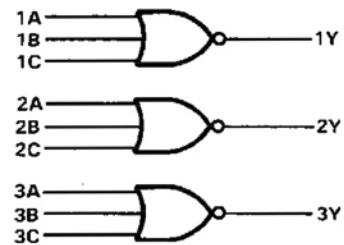
positive logic

$$Y = \overline{A + B + C} \text{ or } Y = \overline{A} \cdot \overline{B} \cdot \overline{C}$$

schematics (each gate)
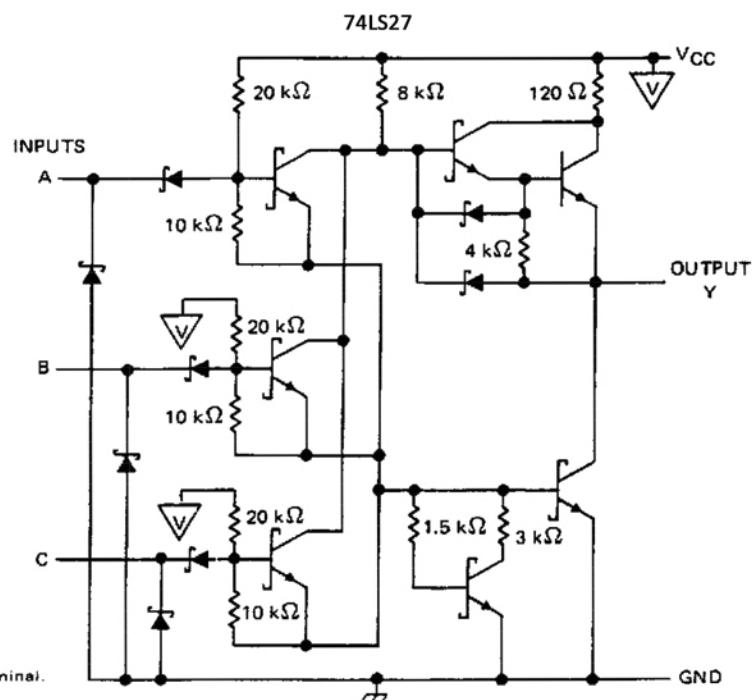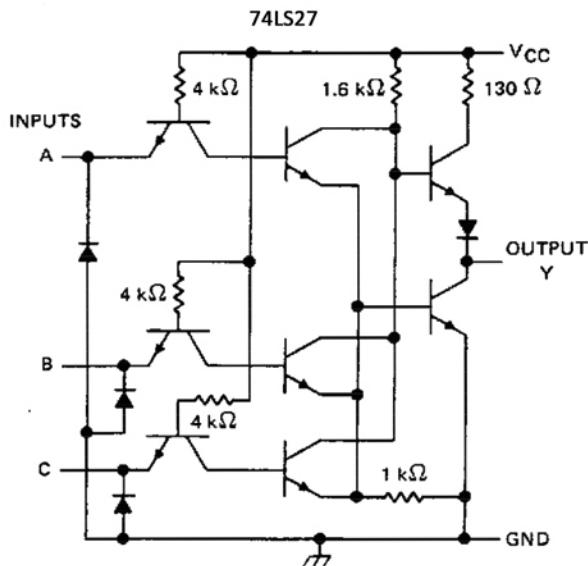
74LS27

74LS27

Resistor values shown are nominal.

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

Supply voltage, V_{CC} (see Note 1) .... 7 V
Input voltage: 74LS27 .... 5.5 V
74LS27 .... 7 V
Operating free-air temperature: 74LS27 .... 0°C to 70°C
Storage temperature range .... −65°C to 150°C

2

recommended operating conditions

	74LS27			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_{OH} Low-level output current			8	mA
T_A Operating free-air temperature	0		70	°C

**electrical characteristics over recommended operating free-air temperature range (unless otherwise noted)**

PARAMETER	TEST CONDITIONS†		74LS27			UNIT
			MIN	TYP‡	MAX	
V_{IK}	V_{CC} = MIN,	V_{OH} - 18 mA			-1.5	V
V_{OH}	V_{CC} = MIN,	V_{IL} =MAX, I_{OH} = -0.4mA	2.7	3.4		V
V_{OL}	V_{CC} = MIN,	V_{IH} =2V, I_{OL} = 4mA		0.25	0.4	V
	V_{CC} = MIN,	V_{IH} =2V, I_{OL} = 8mA		0.35	0.5	
I_I	V_{CC} = MIN,	V_I =7V			0.1	mA
I_{IH}	V_{CC} = MIN,	V_I =2.7V			20	μA
I_{IL}	V_{CC} = MIN,	V_I =0.4V			-0.4	mA
I_{OS}§	V_{CC} = MIN,		-20		-100	mA
$I_{CC}H$	V_{CC} = MIN,	V_I =0V		2	4	mA
$I_{CC}L$	V_{CC} = MIN,	See Note 2		3.4	6.8	mA

switching characteristics, V_{CC} =5V, T_A =25°C (see note 3)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_{PLH}	A,B or C	Y	R_L = 2 kΩ, C_L =15pF		10	15	ns
t_{PLH}					10	15	ns

NOTE 3: Load circuits and voltage waveforms are shown in Section 1.

DIP14

.750±.005
NOT INCLUDING MOLD FLASH
.01 MAX PER END

14

8

A

B

.250±.010
NOT INCLUDING
MOLD FLASH

PIN 1 ID
SUPPLIER'S
OPTION

1

7

.04 MIN TYP

14X .060±.005

.145-.210

(.13)

C

.125-.135

SEATING PLANE

.015 MIN
TYP

12X .100

14X .018 +.004 -.003

⊕ .01 Ⓜ C AⓈ BⓈ

.300-.325

.008-.012
TYP

95°±5° TYP

.325 +.040 -.015

DIMENSIONS ARE IN INCHES
DIMENSIONS IN ( ) FOR REFERENCE ONLY
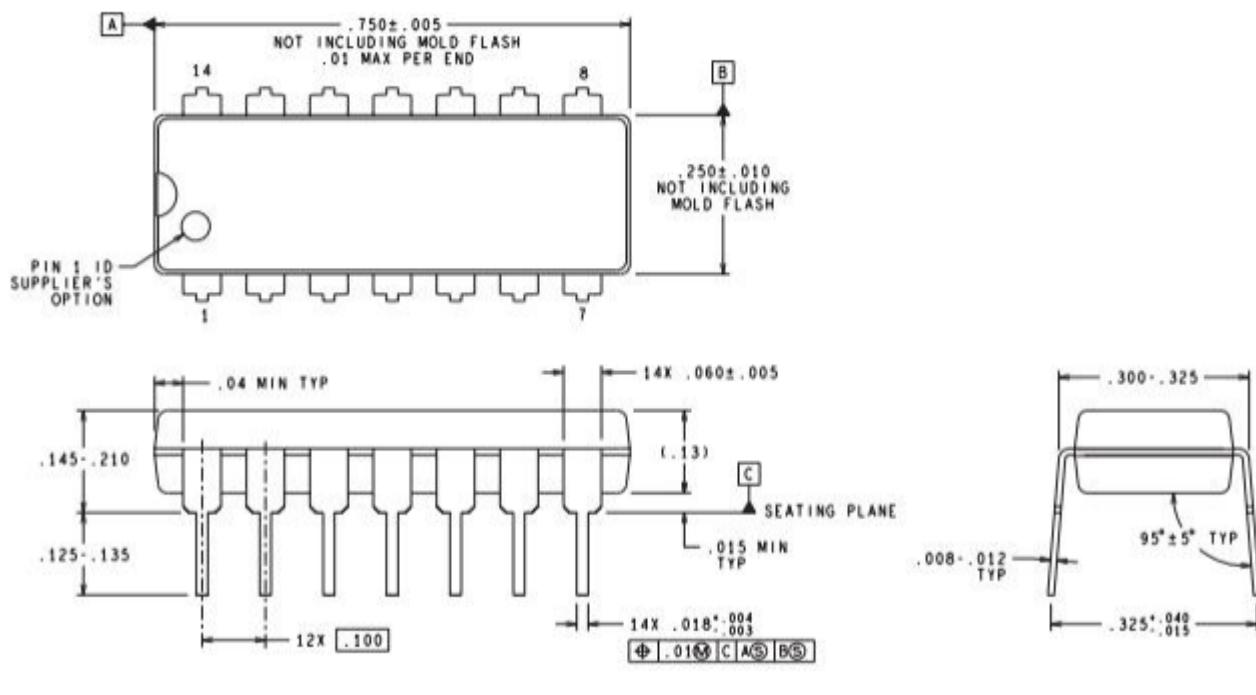
以上信息仅供参考. 如需帮助联系客服人员。谢谢 XINLUDA

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