54H/74H55
54LS/74LS55

EXPANDABLE 4-INPUT AOI GATE ('H55)
2-WIDE, 4-INPUT AOI GATE ('LS55)

ORDERING CODE: See Section 9

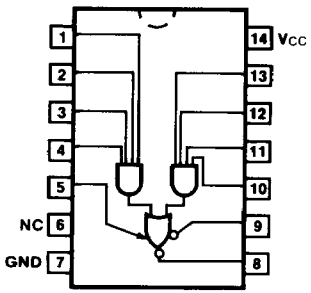
PKGS	PIN OUT	COMMERCIAL GRADE V_{CC} = +5.0 V ±5%, T_A = 0°C to +70°C	MILITARY GRADE V_{CC} = +5.0 V ±10%, T_A = -55°C to +125°C	PKG TYPE
Plastic DIP (P)	A	74H55PC		9A
	B	74LS55PC		
Ceramic DIP (D)	A	74H55DC	54H55DM	6A
	B	74LS55DC	54LS55DM	
Flatpak (F)	B	74LS55FC	54LS55FM	3I
	C	74H55FC	54H55FM	

INPUT LOADING/FAN-OUT: See Section 3 for U.L. definitions

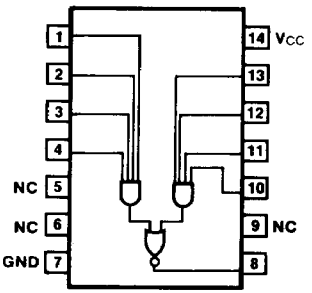
PINS	54/74H (U.L.) HIGH/LOW	54/74LS (U.L.) HIGH/LOW
Inputs	1.25/1.25	0.5/0.25
Outputs	12.5/12.5	10/5.0 (2.5)

CONNECTION DIAGRAMS

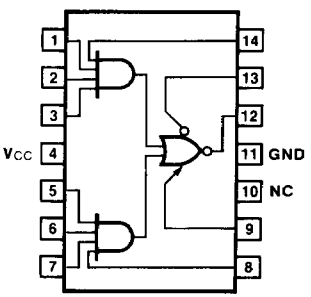
PINOUT A



PINOUT B



PINOUT C



DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE: Using Expander Pins

SYMBOL	PARAMETER		54/74H Min	54/74H Max	54/74LS Min	54/74LS Max	UNITS	CONDITIONS	
V_{OH}	Output HIGH Voltage	XM	2.4				V	I_1 = 320 μA I_2 = -320 μA	I_{OH} = -500 μA
		XC	2.4					I_1 = 570 μA I_2 = -570 μA	
V_{OL}	Output LOW Voltage	XM		0.4			V	I_1 = 470 μA R_1 = 68 Ω	I_{OL} = 20 mA
		XC		0.4				I_1 = 600 μA R_1 = 63 Ω	
$V_{BE(Q)}$	Base-Emitter Voltage of Input Transistor Q	XM		1.0			V	I_1 = 700 μA	I_{OL} = 20 mA R_1 = 0 Ω
		XC		1.0				I_1 = 1.1 mA	
$I_{IN\overline{X}}$	Expander-Node Input Current	XM		-5.85			mA	$V_{\overline{X}}$ = 1.4 V	
		XC		-6.3					
I_{CCH} I_{CCL}	Power Supply Current			6.4 12		0.8 1.3	mA	V_{IN} = Gnd V_{IN} = Open	V_{CC} = Max

AC CHARACTERISTICS: V_{CC} = +5.0 V, T_A = +25° C (See Section 3 for waveforms and load configurations)

SYMBOL	PARAMETER	54/74H Min	54/74H Max	54/74LS Min	54/74LS Max	UNITS	CONDITIONS
t_{PLH} t_{PHL}	Propagation Delay		11 11		15 15	ns	Expander Pins Open Figs. 3-1, 3-4
t_{PLH} t_{PHL}	Propagation Delay		11.4* 7.7*			ns	C_L = 25 pF (Gnd to $\overline{X}$) C_X = 15 pF

*Typical Value