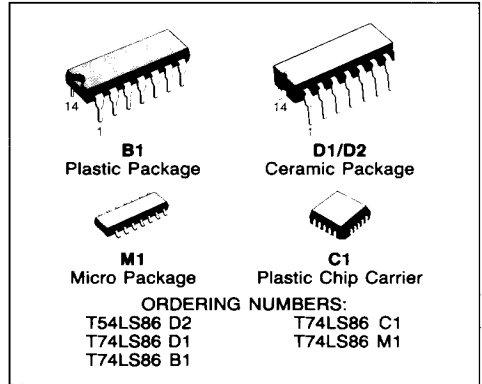




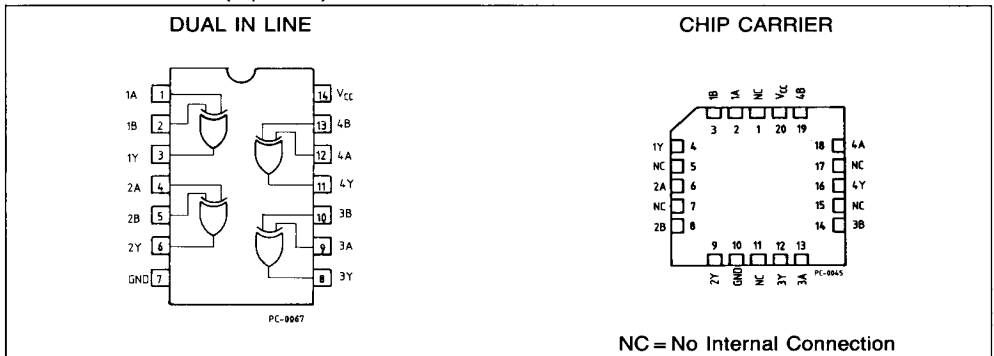
QUAD 2-INPUT EXCLUSIVE OR GATE

DESCRIPTION

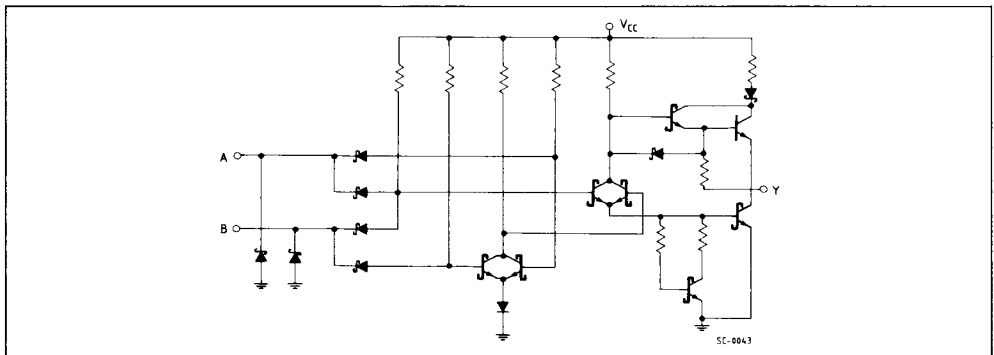
The T54LS86/T74LS86 is a high speed QUAD 2-INPUT EXCLUSIVE OR GATE fabricated in LOW POWER SCHOTTKY technology.

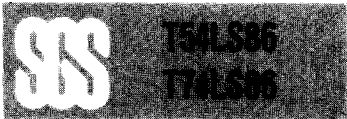


PIN CONNECTION (top view)



SCHEMATIC





LOGIC DIAGRAM AND TRUTH TABLE

S-7975

IN		OUT
A	B	Y
L	L	L
L	H	H
H	L	H
H	H	L

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage	-0.5 to 7	V
V_I	Input Voltage, Applied to Input	-1.5 to 15	V
V_O	Output Voltage, Applied to Output	-0 to 10	V
I_I	Input Current, Into Inputs	-30 to 5	mA
I_O	Output Current, Into Outputs	60	mA

Stresses in excess of those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions in excess of those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

GUARANTEED OPERATING RANGES

Part Numbers	Supply Voltage			Temperature
	Min	Typ	Max	
T54LS86D2	4.5 V	5.0 V	5.5 V	-55°C to +125°C
T74LS86XX	4.75 V	5.0 V	5.25 V	0°C to +70°C

XX = package type.



DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE

Symbol	Parameter	Limits			Test Conditions (Note 1)	Units	
		Min.	Typ.	Max.			
V _{IH}	Input HIGH Voltage	2.0			Guaranteed input HIGH Voltage for all Inputs	V	
V _{IL}	Input LOW Voltage	54		0.7	Guaranteed input LOW Voltage for all Inputs	V	
		74		0.8			
V _{CD}	Input Clamp Diode Voltage		-0.65	-1.5	V _{CC} = MIN, I _{IN} = -18mA	V	
V _{OH}	Output HIGH Voltage	54	2.5	3.4	V _{CC} = MIN, I _{OH} = -400μA, V _{IN} = V _{IH} or V _{IL} per Truth Table	V	
		74	2.7	3.4			
V _{OL}	Output LOW Voltage	54,74	0.25	0.4	I _{OL} = 4.0mA	V _{CC} = MIN V _{IN} = V _{IH} or V _{IL} per Truth Table	V
		74	0.35	0.5	I _{OL} = 8.0mA		
I _{IH}	Input HIGH Current			40 0.2	V _{CC} = MAX, V _{IN} = 2.7V V _{CC} = MAX, V _{IN} = 7.0V	μA mA	
I _{IL}	Input LOW Current			-0.6	V _{CC} = MAX, V _{IN} = 0.4V	mA	
I _{OS}	Output Short Circuit Current (Note 2)	-20		-100	V _{CC} = MAX, V _{OUT} = 0V	mA	
I _{CCH}	Supply Current HIGH		6.0	10	V _{CC} = MAX	mA	

AC CHARACTERISTICS: T_A = 25°C (See page 576 for AC test circuit and waveforms)

Symbol	Parameter	Limits			Test Conditions	Units
		Min.	Typ.	Max.		
t _{PLH} t _{PHL}	Propagation Delay Other Input LOW		12 10	23 17	V _{CC} = 5.0V C _L = 15pF	ns
t _{PLH} t _{PHL}	Propagation Delay Other Input HIGH		20 13	30 22		

Notes:

- 1) For conditions shown as MIN or MAX, use the appropriate value specified under guaranteed operating ranges.
- 2) Not more than one output should be shorted at a time.
- 3) Typical values are at V_{CC} = 5.0V, T_A = 25°C