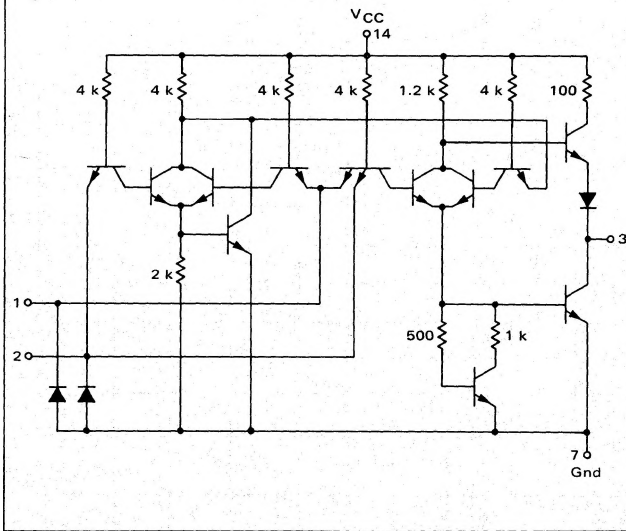


QUAD 2-INPUT
EXCLUSIVE "OR" GATE

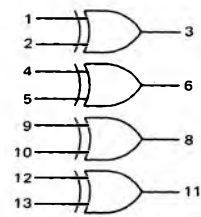
MC3100/MC3000 series

MC3121F • MC3021F
MC3121L • MC3021L,P

CIRCUIT SCHEMATIC
1/4 OF CIRCUIT SHOWN



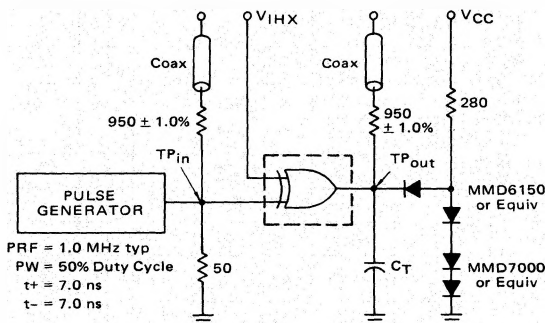
This device consists of four 2-input Exclusive OR gates. They can be used to build parity checking/generating functions. Up/down counters can be built using these gates and J-K flip-flops.



Positive Logic: $3 = 1 \oplus 2 + \bar{1} \cdot 2$

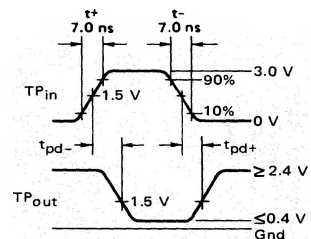
Input Loading Factor = 1.6
Output Loading Factor = 8
Total Power Dissipation = 100 mW typ/pkg
Propagation Delay Time = 14 ns typ

SWITCHING TIME TEST CIRCUIT AND WAVEFORMS



One input to gates not under test must be tied to V_{IHx} the other grounded.
 C_T = 25 pF = total parasitic capacitance, which includes probe, wiring, and load capacitances.

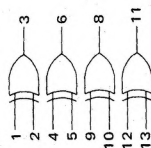
The coax delays from input to scope and output to scope must be matched. The scope must be terminated in 50-ohm impedance. The 950-ohm resistor and the scope termination impedance constitute a 20:1 attenuator probe. Coax shall be CT-070-50 or equivalent.



MC3121, MC3021 (continued)

ELECTRICAL CHARACTERISTICS

Test procedures are shown for only one gate. The other gate is tested in the same manner. Further, test procedures are shown for only one input of the gate under test. To complete testing, sequence through remaining inputs.



12	13	11																																
																																		
TEST CURRENT /VOLTAGE VALUES																																		
Characteristic		Symbol	Pin Under Test	MC3121 Test Limits						MC3021 Test Limits						TEST CURRENT /VOLTAGE APPLIED TO PINS LISTED BELOW:																		
				-55°C			+25°C			+125°C			0°C			+25°C			+75°C															
				Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min	Max	Unit	Min	Max	Unit																
Input	Forward Current	I _F	1	-3.0	-	-3.0	-	-3.0	mAdc	-	-3.0	-	-3.0	-	-3.0	mAdc	-	-3.0	-															
	Leakage Current	I _R	1	100	-	100	-	100	μAdc	-	100	-	100	-	100	μAdc	-	100	-															
	Breakdown Voltage	BV _{in}	1	-	-	5.5	-	-	-	-	-	-	5.5	-	-	Vdc	-	-	-															
	Clamp Voltage	V _D	1	-	-	-1.5	-	-	-	-	-	-	-	-1.5	-	-	Vdc	-	-															
Output	Output Voltage	V _{OL}	3	-	0.4	-	0.4	-	0.4	Vdc	-	0.4	-	0.4	-	0.4	Vdc	-	0.4	-														
	Output Voltage	V _{OH}	3	2.4	-	2.4	-	2.4	-	2.4	-	2.4	-	2.4	-	2.4	-	2.4	-															
	Output Voltage	V _{OH}	3	2.4	-	2.4	-	2.4	-	2.4	-	2.4	-	2.4	-	2.4	-	2.4	-															
	Short-Circuit Current	I _{SC}	3	-20	-65	-20	-65	-20	-65	mAdc	-20	-65	-20	-65	-20	-65	mAdc	-	-	-														
Power Requirements (Total Device)																																		
Maximum Power Supply Current																																		
Power Supply Drain																																		
Switching Parameters																																		
Turn-On Delay																																		
Turn-Off Delay																																		

Pins not listed are left open.