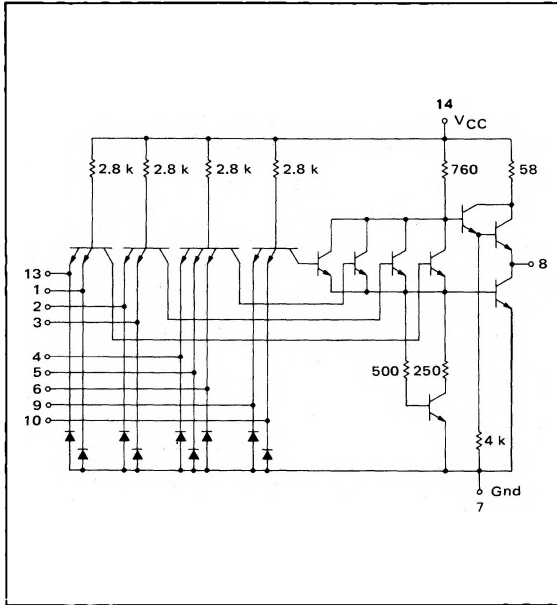
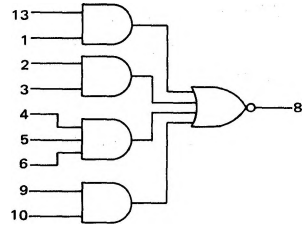


4-WIDE 2-2-2-3-INPUT
"AND-OR-INVERT" GATE

MC3133F • MC3033F
MC3133L • MC3033L,P
(54H54J) (74H54J,N)



This device consists of four 2-2-2-3-input AND gates ORed together and inverted.



Positive Logic:

$$8 = (13 \cdot 1) + (2 \cdot 3) + (4 \cdot 5 \cdot 6) + (9 \cdot 10)$$

Negative Logic:

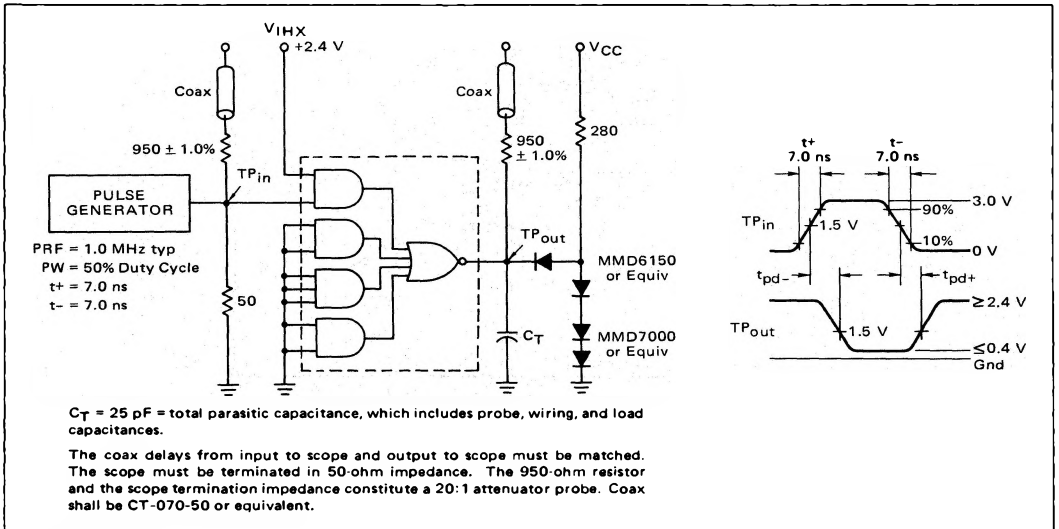
$$8 = 13 + 1 + (2 + 3) + (4 + 5 + 6) + (9 + 10)$$

Input Loading Factor = 1
Output Loading Factor = 10
Total Power Dissipation = 40 mW typ/pkg
Propagation Delay Time = 7 ns typ

Pin numbers for the 54H54F/74H54F device are shown in the chart. These devices are available on special request.

DEVICE	PIN NUMBERS													
MC3133F,L/3033F,L,P	1	2	3	4	5	6	7	8	9	10	11	12	13	14
54H54F/74H54F	5	6	7	8	9	10	11	12	13	14	1	2	3	4

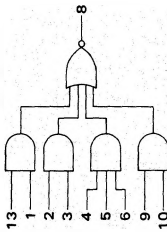
SWITCHING TIME TEST CIRCUIT AND WAVEFORMS



See General Information section for packaging.

ELECTRICAL CHARACTERISTICS

Test procedures are shown for only one input of this device. To complete testing, sequence through remaining inputs in the same manner.



Characteristic		Symbol	Pin Under Test	MC3133 Test Limits -55 to +125°C				MC3033 Test Limits 0 to +75°C				TEST CURRENT/VOLTAGE VALUES (All Temperatures)												
				Min		Max		Min		Max		mA				Volts								
				Min	Max	Min	Max	Min	Max	Min	Max	I _{OL}	I _{OH}	I _{in}	I _D	V _F	V _R	V _{RH}	V _{IH}	V _{IL}	V _{CC}	V _{CCL}	V _{CCH}	
Input																								
Forward Current	I _F	1	-	-2.0	mAdc	-	-2.0	mAdc	-	-	-	-	-	1	-	13	-	-	-	-	-	-	14	
Leakage Current	I _R	1	-	50	μAdc	-	50	μAdc	-	-	-	-	-	1	-	-	-	-	-	-	-	-	14	
Breakdown Voltage	BV _{In}	1	5.5**	-	mVdc	5.5**	-	mVdc	-	-	-	-	-	1	-	-	-	-	-	-	-	-	14	
Clamp Voltage	V _D	1	-	-1.5**	mVdc	-	-1.5**	mVdc	-	-	-	-	-	1	-	-	-	-	-	-	-	-	7	
Output																								
Output Voltage	V _{OL}	8	-	0.4	Vdc	-	0.4	Vdc	-	-	-	-	-	-	-	-	1.13	-	-	-	-	-	14	
	V _{OH}	8	2.4	-	Vdc	2.4	-	Vdc	-	-	-	-	-	-	-	3.5, 10.13	-	1.2,4.9	-	-	-	-	14	
Short-Circuit Current	I _{SC}	8	-40	-100	mAdc	-40	-100	mAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
Power Requirements																								
Power Supply Drain	I _{PHH}	14	-	14	mAdc	-	14	mAdc	-	-	-	-	-	-	-	-	1.2,3,4,6, 5.9,10.13	-	-	-	-	-	-	14
	I _{PDL}	14	-	11	mAdc	-	11	mAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
Switching Parameters																								
Turn-On Delay	t _{pd-}	1,8	-	11**	ns	-	11**	ns	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
Turn-Off Delay	t _{pd+}	1,8	-	11**	ns	-	11**	ns	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	

**Tested only at 25°C