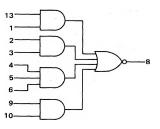
## MC3100/MC3000 series

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

## MC3133F · MC3033F MC3133L · MC3033L,P

13 ° VCC 13 ° VCC 13 ° VCC 10 ° S8 10 ° S00 \$250\$ 6 ° S00 \$250\$ 10 ° Gnd This device consists of four 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:

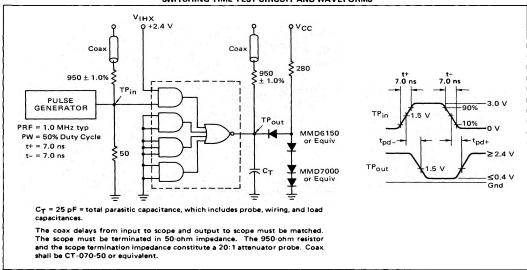
8 = 13 + 1) • (2 + 3) • (4 + 5 + 6) • (9 + 10)

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.

1	DEVICE				_		PIN	NU	MBE	RS	_				
1	MC3133F,L/3033F,L,P	1	2	3	4	5	6	7	8	9	10	11	12	13	14
١	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.

											TEST	CURRE	IT/VOL	TAGE V	TEST CURRENT/VOLTAGE VALUES (All Temperatures)	Temp	eratures	(1			
9 1	$\frac{1}{1}$									Am						Volts	S				
									lor	Іон	l.	ا	٧	\ 8	VRH	ν.	۸"	Vcc	VccL	VCCH	
								MC3133	20	-1.6	1.0	-10	0.4	2.4	4.0	2.0	8.0	5.0	4.5	5.5	
						ŀ	ì	MC3033	20	-1.6	1.0	-10	0.4	2.4	4.0	2.0	8.0	5.0	4.75	5.25	
		Pin Under	¥ i'	MC3133 Test Limits -55 to +125°C	Limits 5°C	MC	MC3033 Test Limits 0 to +75°C	t Limits		F	EST CUI	RENT/	VOLTA	SE APP	EST CURRENT/VOLTAGE APPLIED TO PINS LISTED BELOW:	NS LIS	TED BEL	ow.			
Characteristic	Symbol	Test	Min	Max	Unit	Min	Max	Unit	ō	-	_, <u>s</u>	٥	>"	××	ARH	>=	<b>"</b>	20	Vca	VCCH	Gnd
Input Forward Current	IF	-	(1)	-2.0	mAdc		-2.0	mAdc	4	-	- 0	'n	-	ī	13		,	i	i	14	7
Leakage Current	IR	-	į.	20	μAdc		20	μAdc	ÿ.	Y.	1	ı	1	-	,	1		4	,	14	2,3,4,5,6
Breakdown Voltage	BVin	1	5.5**		mVdc	5.5**	è	mVdc	Ŷ.	i	1			ii.		1-		1		14	2,3,4,5,6
Clamp Voltage	V <sub>D</sub>	1	1	-1.5**	mVdc	Ē.	-1.5**	mVdc	ġ.	9		1	4			,		è	14	•	7
Output Output Voltage	NOL.	æ	1.	0.4	Vdc	1	9.4	Vdc	œ		d ·	- 4		4		1,13	4.	1	14	- 1	2,3,4,5,6
	VOH	8	2.4	1	Vdc	2.4	a.	Vdc	ı	89		i	3		3,5,	ı	1,2,4,9	,	14	i	7
Short-Circuit Current	1sc	8	-40	-100	mAdc	-40	-100	mAde	1	1	2.	j.	4	į.	N	1	3.		j.	14	1,2,3,4,5,6,
Power Requirements Power Supply Drain	нна	14	1	14	mAde	- 3	14	mAdc	1	0	ò	3	1	1	1,2,3,4,6,	4	4	,6	1	14	2
	$\mathrm{TGd}_{\mathrm{I}}$	14	9	11	mAdc	i	11	mAdc		i j	i	4	4		t	i i	i e	*	, i	14	1,2,3,4,5,6
Switching Parameters									Pulse In	Pulse											
Turn-On Delay	t pd-	1,8	â.	11**	us	9-1	11**	us	1	9	· ·	9	3	13	į.	,		14	j		2,3,4,5,6
Turn-Off Delay	t pd+	1,8	i de la	11**	su	Ŷ.	11**	su	1	9	100			13	Wit.	i i	4.	14	i		2,3,4,5,

\*\*Tested only at 25°C