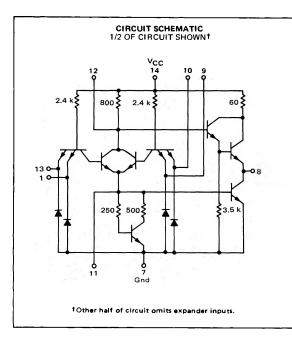
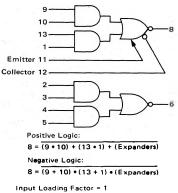


(74H50J,N)

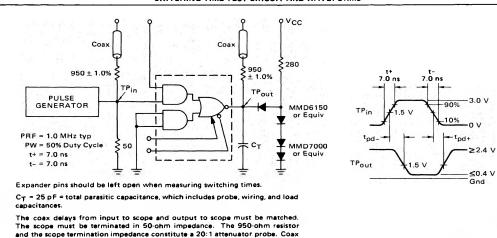


One side of this dual device consists of two 2-input AND gates ORed together and driving an output inverter. The other side consists of two 2-input gates ORed together, driving an output inverter, and the ORing nodes are available for expansion. Up to four AND gates can be ORed together using the MC3030/3130 expander. Care should be taken to minimize the amount of capacitance on the expander terminals in order to maintain switching speeds.

MC3100/MC3000 series



Output Loading Factor = 10 Total Power Dissipation = 62.5 mW typ/pkg Propagation Delay Time = 6.0 ns typ

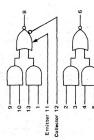


## SWITCHING TIME TEST CIRCUIT AND WAVEFORMS

shall be CT-070-50 or equivalent. See General Information section for packaging.

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.



VOLTAGE VAL		V <sub>R</sub>	2.4	2.4
11/10		V,	0.4	0.4
URREN		۷	2.0 0.4	1.8 0.4
TEST O		V <sub>it</sub>	1.1	1.1
		lexe	0.55	0.71
		I <sup>E</sup>	0.3	-2.0 1.0 -10 0.3 0.71
		a		-10
	шA	s	,	1.0
		Рон	-2.0	-2.0
		lor	20	20
	@ Test	emperature	-55°C	+25°C
	9	Ten		MC3120

UES Volts Ver Vers Vec Vect Veck Vrx

														-	-55°C	20	-2.0	,	-	0.3 0.	0.55 1	1.1 2.0	0 0.4	1 2.4	4.0		5.0	9 4.5	5.5		-
													MC3120	~	+25°C	20	-2.0	1.0	-10 0.	0.3 0.	0.71 1	1.1 1.8	8 0.4	4 2.4	4.0	7.0	0 5.0	4.5	5.5	2.5	
														÷	+125°C	20	-2.0	-	- 0	0.3 0.	0.92 0	0.8 1.8	8 0.4	1 2.4	4.0	'	5.0	0 4.5	5.5	•	
														-	0°C	20	-2.0		0 -	0.3 0.	0.65 1	1.1 2.0	0 0.4	1 2.5	4.0	-	5.0	0 4.75	5 5.25		
													MC3020	~~	+25°C	20	-2.0	1.0 -	-10 0.	0.3 0.	0.71 1	1.1 1.	1.8 0.4	1 2.5	4.0	7.0	0 5.0	0 4.75	5 5.25	2.5	
		1	4											+	+75°C	20	-2.0		- 0	0.3 0.	0.82 0	0.9 1.	1.8 0.4	1 2.5	4.0	'	5.0	0 4.75	5 5.25		_
	S. 1. 1.	Pin			MC3120	- 1	<b>Test Limits</b>				MC302	MC3020 Test Limits	imits		Π					EST CUE	RENT /	VOLTA	SE APP	LIED TO P	TEST CURRENT / VOLTAGE APPLIED TO PINS LISTED BELOW	ELOW :	{				r
		Inder	1	-55°C	+25°C	5°C	Ŧ	+125°C	•	0°C	+25°C	2°C	+75°C	ç	+	T	T	F	+	F	+	+	+			-	F	H	F	+	Т
Characteristic	Symbol	Test	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Unit	_o	F	5			lexe	V <sub>II</sub> V <sub>IH</sub>	н Н	× ×	V <sub>RH</sub>	Vmax	× Vcc	c V <sub>cc1</sub>	L VCCH	XHIN N	Gnd
Input Forward Current	IF	1		-2.0		-2.0	1	-2.0		-2.0		-2.0		-2.0	mAdc			-	-	-	-		-	Ŀ	13	Ľ	1-	<u> </u>	14	·	7, 9, 10*
Leakage Current	IR	-	1	20		20	2	50		50		50		20	μAdc	1		1.	-		1.	-  -	<u> </u> -	-	-	-	<u> '</u>	'	14	· 	7, 9, 10, 13*
Breakdown Voltage	BVin	1	1.	1	5.5			•	1		5.5				Vdc			-	1	1.			1	1		1	'		14		7, 9, 10, 13*
Clamp Voltage	VD	1	1	ň,		-1.5					1	-1.5			Vdc				-	-		<u> </u>	 	1		-	· 	14	•	·	7, 9, 10*
Output Output Voltage	VoL VoL	88	• •	0.4		0.4	• •	0.4		0.4		0.4		0.4	Vdc Vdc	8 8					11, 12			11	13			14 14	•••		7, 9, 10 * 1,7,9,10,13
	нол	8	2.4		2.4	1	2.4	•	2.5	•	2.5	•	2.5		Vdc		80								13		-	14	•	•	1, 7, 10 *
Short-Circuit Current	Isc	8	-40	-100	-40	-100	-40	-100	-40	-100	-40	-100	-40	-100	Vdc		1.	1	-					•	1	•	•		14	6	1, 7, 8, 9, 10, 13 *
Base- Emitter Voltage	VBE max	11	•	1.10						1.00			•		Vdc	8	1	-	-	- 11	11, 12			- 2	-	-	-	14	-	1	1, 9, 10, 13*
	VBE min	п	0.80	17	0.65	•	0.45		0.70	1	0.65		0.55	,	Vdc				1 -	11	-	-		•	-	1	-	14	'	,	1, 9, 10, 12,13*
Power Requirements (Total Device) Maximum Power Supply Current	Imax	14		. J		24	•	•			1	24			mAdc	,	1									14	+			,	1,2,3,4,5,7, 9,10, 13
Power Supply Drain	HDdI	14		24		24	•	24	•	24		24	-	24	mAdc	,	,	1				1			1, 2, 3, 4, 5, 9, 10, 13	'. 	'	•	14		-
	Ind	14	1.	12.8	•	12.8		12.8		12.8		12.8		12.8	mAdc					-		-	-	•	-	•	-	1	14	,	1,2,3,4,5,7, 9,10,13
Switching Parameters Turn-On Delay	t pd-	1, 8		1.		11		1				п	1		su	Pulse In	Pulse Out 8	1						,		'	14		•	13	7, 9, 10 *
Turn-Off Delay	tpd+	1,8	1			11					1	п	•		su	1	80		.  ,			'	-	•			14		•	13	7, 9, 10 *
														1																	

\*Since this is an inverting gate, power drain is minimized by grounding the inputs to gates not under test.

MC3120, MC3020 (continued)