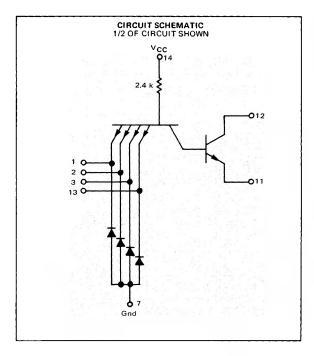
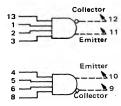
DUAL 4-INPUT EXPANDER FOR "AND-OR-INVERT" GATES

MC3100/MC3000 series

MC3130F · MC3030F MC3130L · MC3030L,P (54H60J,N)



This device consists of two independent 4-input AND gates. The outputs of each gate are available as ORing nodes. Using the MC3030/3130 expander, with the MC3020/3120 expandable gate, up to four AND gates can be ORed together.

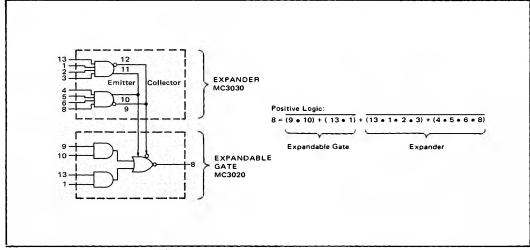


Input Loading Factor = 1

Full output loading factor of the expandable gate is maintained.

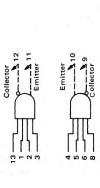
Total Power Dissipation = 15 mW typ/pkg Propagation Delay Time: $\Delta t_{pd} = +1.0 \text{ ns typ}$ When added to the expandable "AND-OR-INVERT" gate. $\Delta t_{pd}/pF = +1.0 \text{ ns pF typ}$ Caused by additional capacitance at expansion points.

APPLICATION: EXPANDABLE 2-WIDE 2-INPUT AND-OR-INVERT GATE WITH A DUAL 4-INPUT EXPANDER CONNECTED



ELECTRICAL CHARACTERISTICS

Test procedures are shown for only one expander. The other expander is tested in a similar manner. Further, test procedures are shown for only one input of the expander being tested. To complete testing, sequence through remaining inputs.



														-	,	0.0	2	-TP	6.0	4.0	0.4	0.90 0.00	0.00	F. 8	1:1	0.1	4.75	5.25	
														-	+75°C	6.0	,	1	2.5	4.0	0.4	0.85	0.55	1.8	6.0	1	4.75	5.25	
		o:o		MC	MC3130 T	Test Limits	its			¥	3030	MC3030 Test Limits	its					TEST	CURRE	V / IN	OLTAG	FAPPL	ED 70	PINS	TEST CURRENT / VOLTAGE APPLIED TO PINS LISTED BELOW	- MO			
		Inder	-5	−55°C	+25°	2°C	Ŧ	+125°C	0	0 د	+	+25°C	+75°C	ي					-				1	1	1				
Characteristic	Symbol	Test	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	- Tuit	_0	_=	٩	>"	V _R V _{RH}	>"	VE I	VEE2	,	۸ ا	Vmax	VccL	У ССН	Gnd
Input Forward Current	$^{ m I}_{ m F}$	1	,	-2.0		-2.0	-	-2.0		-2.0		-2.0		-2.0	mAdc		Ŀ	Ŀ	-	2,3,	-		,	-	1.		,	14	* 1
Leakage Current	IR	7	1	20		20	1	20	,	20	,	20		20	μAdc				-			,		,		,		14	2, 3, 7, 13*
Breakdown Voltage	BVin	1		1	5.5						5.5			,	Vdc		-	Ŀ	-	-	-	,		,				14	2, 3, 7, 13*
Clamp Voltage	V _D	1	10	•	1	-1.5		1	'			-1.5		,	Vdc			-			1	1			,	1	14		*4
Output Output Voltage	VOL	12		1,5		1.35	1	1.15	,	1.4	,	1,35		1.25	Vdc	12	1		1	1	1	==		-			14	1.5	*4
Emitter Current	^I EO	111	,	-300	•	-300	,	-300	1	-300		-300	,	-300	μAdc				'		1		=		1		12, 14		**L
Collector Current	CO	12	,	300	•	300		300		300		300		300	μAdc				, -	1	1		=	-			12, 14		* 4
Power Requirements (Total Device) Maximum Power Supply Current	Imax	14	1	1	1	7.0		,	,	,	1	7.0	1	,	mAdc	1	r	1	1	ı			1			14		,	1,2,3,4,5, 6,7,8,13
Power Supply Drain	PDL	14		4.5	1	4.5		4.5	1	4.5	-	4.5		4.5	mAdc			-	-	-			,	-	,	,		14	1,2,3,4,5,

Vcc1 4.5 4.5 4.75

2.5 4.0 0.4 1.00 0.70 2.0

1,10 0,80 2.0

2.4 4.0 0.4

VEET

μA

@ Test
Temperature

2.4 4.0 0.4 0.95 0.65 1.8

-10

6.0

+25°C +25°C +125°C

MC3130 <

TEST CURRENT/VOLTAGE VALUES

* Ground inputs to gates not under test unless otherwise noted.