

MC3115F • MC3015F MC3115L • MC3015L,P



This device is an 8-input NAND gate. It is useful when processing a large number of variables, such as in encoders and decoders.



Positive Logic: 8 = 1 • 2 • 3 • 4 • 10 • 11 • 12 • 13 Negative Logic:

8 = 1 + 2 + 3 + 4 + 10 + 11 + 12 + 13

Input Loading Factor = 1 Output Loading Factor = 10 Total Power Dissipation = 22 mW typ/pkg Propagation Delay Time = 8.0 ns typ

SWITCHING TIME TEST CIRCUIT AND WAVEFORMS



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.

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 mannet.



		-						TEST	CURRE	ENT/VOLT	TEST CURRENT/VOLTAGE VALUES						
	@ Tect	L		ШĄ							Vc	Volts					
	Temperature	ure	_ī	Ч	<u>s</u>	_0	ν"	۲ _{IH}	>"	× ×	V _{RH}	Vmax	Vcc	Vccl	V _{CCH}	V _{IHX}	
	-	-55°C	20	-2.0			1.1	2.0	0.4	2.4	4.0	•	5.0	4.5	5.5		
	MC3115 \ +2	+25°C	20	-2.0	I.0	-10	1.1	1.8	0.4	2.4	4.0	7.0	5.0	4.5	5.5	2.5	
	(+125°C	5°C	20	-2.0	'		0.8	1.8	0.4	2.4	4.0		5.0	4.5	5.5		
)	د د	20	-2.0			1.1	2.0	0.4	2.5	4.0		5.0	4.75	5.25		
	MC3015 { +2	+25°C	20	-2.0	1.0	-10	1.1	1.8	0.4	2.5	4.0	7.0	5.0	4.75	5.25	2.5	
	(+2	+75°C	20	-2.0		•	0.9	1.8	0.4	2.5	4.0		5.0	4.75	5.25		
imits						TEST	CURRE	NT / V	OLTAG	E APPLIED	FEST CURRENT / VOLTAGE APPLIED TO PINS LISTED BELOW	STED BEL	: MO				
	+75°C	1			T	T	T	-	T								_
×	Min Max Un	Unit	10	но	_ <u>_</u>	_0	<"	HI >	۲ ^в	< R R	V _{RH}	V max	Vcc	VccL	Vcch	V _{IHX}	Gnd
0	2.0 mA	mAdc				· i - i		'	-	•	2, 3, 4, 10, 11, 12, 13	1	•	1.1	14		2
	- 50 μA	μAdc	1	i.	ï	r.	1		,	1		1		•	14	1	2, 3, 4, 7, 10, 11, 12, 13
	- N	Vdc			-	1		,	•		•				14		2, 3, 4, 7, 10, 11, 12, 13
5	N	Vdc		•		-						•	,	14			7
-		-	-			Γ											

ic Symbol int IF at IK tage BV _{in} VD																-		0.0	0.1	E .0	0	0.E		-	1			
aracteristic Symbol and Current ¹ F age Current ¹ K Agewn Yoltage BV _{III} p Voltage V _D aff	.9		MC3115	5 Test Limits	imits			N	C3015	MC3015 Test Limits	nits						TEST	CURRE	VT / VO	LTAGE A	VPPLIED TO	TEST CURRENT / VOLTAGE APPLIED TO PINS LISTED BELOW:	ED BELO	. W.				
ic Symbol It IF It IK tage BV _{in} VD		-55°C	-	+25°C	+	+125°C	-	0°C	+	+25°C	+	+75°C								-								
at I _F at I _K tage BV _{In} V _D VoL	2	Min Max	Ain Min	in Max	<	Min Max	Ň	n Max	2	Max	2	Max	Unit	101	но		_0	۲ ^н	۲. HI	۷F	V _R	V _{RH}	V max	V _{cc}	VccL	V _{ccH}	V _{iHX}	Gnd
at I _K tage BV _{In} V _D VOL	- 1	2.	-2.0 -	-2.0	- 0	-2.0	- 0	-2.0	-	-2.0	-	-2.0	mAdc				1.1		1.		- 2	2, 3, 4, 10, 11, 12, 13		.		14	1	2
tage BV _{in} V _D	-	10	- 20	- 20	0	50		50	•	50		50	μAdc	1	1	1			,		-					14	1	2, 3, 4, 7, 10, 11, 12, 13
v _D			- 5.5	-	-	31. ₁₂	1	-	5.5	1	•	i.	Vdc		•	-		1.								14		2, 3, 4, 7, 10, 11, 12, 13
^V OL		1		-1.5	- 2	•	1	•	•	-1.5	1	•	Vdc			•	1					1		,	14			5
	80	- 0.4	4	0.4	4	0.4		0.4	1	0.4	•	0.4	Vdc	8	1		-		-	1	-	2, 3, 4, 10 11, 12, 13		1	14			2
V _{OH} 8	8 2.4	4	2.4	4 -	2.4	4 -	2.5	-	2.5	•	2.5	,	Vdc	•	80	•	•	-			- 2,	2, 3, 4, 10, 11, 12, 13			14	·		6
Short-Circuit I _{SC} 8 Current	8 -40	0 -100	00 -40	-100	00 -40	0 -100	0 -40	0 -100	-40	-100	-40	-100	mAdc	•	•	1	1			1			1	1		14		1, 2, 3, 4, 7, 8, 10, 11, 12, 13
Power Requirements (Total Device) Maximum Power Supply Current	14 -			6.	۲ در	· · ·	· .	1	,	6.5	1	,	mAdc			'	- 1		-				14					1, 2, 3, 4, 7, 10, 11, 12, 13
Power Supply Drain IpDH	- 14	10	1	10	-	10	•	10	•	10	•	10	mAdc		•	1	•				10,	1, 2, 3, 4, 10, 11, 12, 13			ć	14		-
I PDL 14	14 -	- 4.2	-	4.2	-	4.2	-	4.2	1	4.2		4.2	mAdc		•	1					-		1	, '	1	14		1, 2, 3, 4, 7, 10, 11, 12, 13
Switching Parameters Turn-On Delay t _{pd-} 1,	1, 8			13		1		-	.'	17	• .	'	us	Pulse In	® Out se	,		,						14			2, 3, 4, 10, 11, 12, 13,	
Turn-Off Delay t _{pd+} 1,	1,8 -		-	12		-		-		12			su	-	80					-	- .			14			2, 3, 4, 10, 11, 12, 13	2