



Quint 2-Input XOR/XNOR Gate

Product Preview

**ELECTRICALLY TESTED PER:
10E507**

The 10E507 is a quint 2-input **XOR/XNOR** gate. The function output **F** is the OR of all five XOR outputs, while **F̄** is the NOR. The **Q** outputs need not be terminated if only the **F** outputs are to be used.

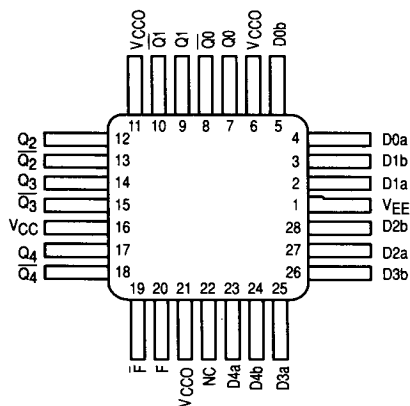
- 600 ps Max. Propagation Delay
- OR/NOR Function Outputs
- 75 kΩ Input Pulldown Resistors

PIN NAME

Pin	Function
D0a - D4b	Data Inputs
Q0 - Q4	XOR Outputs
$\overline{Q_0} - \overline{Q_4}$	XNOR Outputs
F	OR Output
$\overline{F}$	NOR Output

FUNCTION OUTPUTS

$$F = (D_{0a} \oplus D_{0b}) + (D_{1a} \oplus D_{1b}) + (D_{2a} \oplus D_{2b}) + (D_{3a} \oplus D_{3b}) + (D_{4a} \oplus D_{4b})$$



Military 10E507

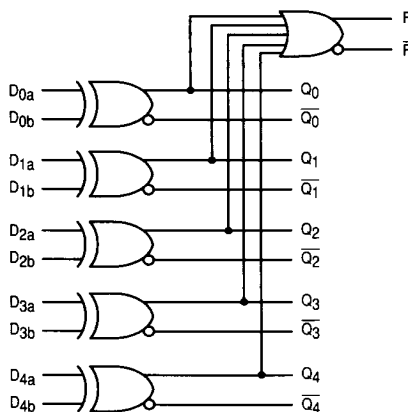


AVAILABLE AS

- 1) JAN: N/A
 - 2) SMD: N/A
 - 3) 883: Planned
- X = CASE OUTLINE AS FOLLOWS:**

**PACKAGE: NON-Compliant
QFP: X**

LOGIC DIAGRAM



5

This document contains information on a product under development. Motorola reserves the right to change or discontinue this product without notice.

10E507

10E Series DC CHARACTERISTICS: $V_{EE} = -5.2 \text{ V} \pm 5\%$; $V_{CC} = V_{CCO} = \text{GND}$ ¹

Symbol	Parameter	Limits						Units
		+ 25° C		+ 125° C		– 55° C		
		Min	Max	Min	Max	Min	Max	
V _{OH}	Output HIGH Voltage	-980	-810	TBA		TBA		mV
V _{OL}	Output LOW Voltage	-1950	-1630	TBA		TBA		mV
V _{IH}	Input HIGH Voltage	-1130	-810	TBA		TBA		mV
V _{IL}	Input LOW Voltage	-1950	-1480	TBA		TBA		mV
I _{IL}	Input LOW Current	0.5		TBA		TBA		μA

1. 10E series circuits are designed to meet the dc specifications shown in the table, after thermal equilibrium has been established. The circuit is in a test socket or mounted on a printed circuit board and transverse air flow greater than 500 lpm is maintained. Outputs are terminated through a 50 Ω resistor to -2.0 volts, except bus outputs where specified, are terminated into 25 Ω .

DC CHARACTERISTICS: $V_{EE} = V_{EE}(\text{min})$ to $V_{EE}(\text{max})$; $V_{CC} = V_{CCO} = \text{GND}$

Symbol	Parameter	Limits						Units	TEST CONDITION APPLIED:
	Functional Parameters:	+ 25° C		+ 125° C		– 55° C			
		Min	Max	Min	Max	Min	Max		
I _{IH}	Input High Current		200		200		200	μA	
I _{EE}	Power Supply Current		50		50		50	mA	

5

AC CHARACTERISTICS: $V_{EE} = V_{EE}(\text{min})$ to $V_{EE}(\text{max})$; $V_{CC} = V_{CCO} = \text{GND}$

Symbol	Parameter	Limits						Units	TEST CONDITION APPLIED:
	Functional Parameters:	+ 25° C		+ 125° C		– 55° C			
		Min	Max	Min	Max	Min	Max		
t_{PLH} t_{PHL}	Propagation Delay to Output								
	D to Q	250	600	250	600	250	600	ps	
	D to F	500	1000	500	1000	500	1000	ps	
t_{Skew}	Within-device Skew								
	D to Q	75		75		75		ps	(Note 1)
t_r t_f	Rise/Fall Times 20 - 80%								
	Q	275	700	275	700	275	700	ps	
	F	300	700	300	700	300	700	ps	

1. Within-device skew is defined as identical transitions on similar paths through a device.