MOTOROLA

Quint 2-Input AND/NAND Gate

Military 10E504

Product Preview

ELECTRICALLY TESTED PER:
10E504

The 10E504 is a quint 2-input **AND/NAND** gate. The function output F is the OR of all five AND gate outputs, while $\overline{F}$ 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

AVAILABLE AS

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

PACKAGE: NON-Compliant
QFP: X

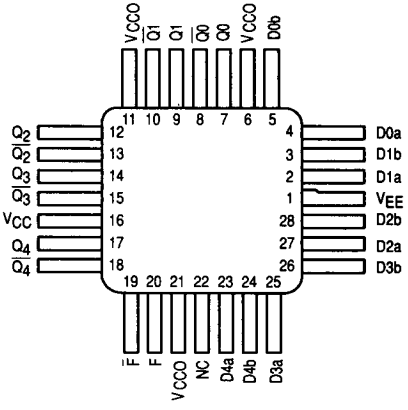
PIN NAME

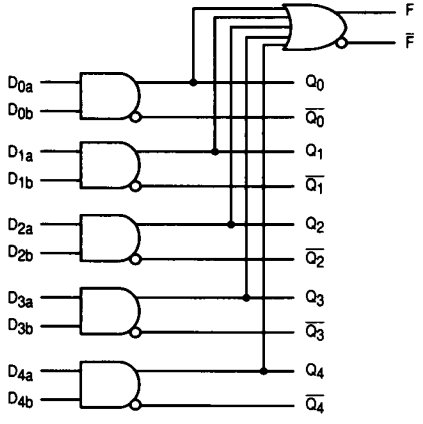
Pin	Function
D_{0a} - D_{4b}	Data Inputs
Q_0 - Q_4	AND Outputs
$\overline{Q_0}$ - $\overline{Q_4}$	NAND Outputs
F	OR Output
$\overline{F}$	NOR Output

FUNCTION OUTPUTS

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

LOGIC DIAGRAM





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

10E Series DC CHARACTERISTICS: V_{EE} = -5.2 V ± 5%; $V_{CC} = V_{CCO}$ = 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 lfpm is maintained. Outputs are terminated through a 50Ω resistor to -2.0 volts, except bus outputs where specified, are terminated into 25Ω.

DC CHARACTERISTICS: $V_{EE} = V_{EE}$(min) to V_{EE}(max), $V_{CC} = V_{CCO}$ = 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		46		46		46	mA	

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AC CHARACTERISTICS: $V_{EE} = V_{EE}$(min) to V_{EE}(max), $V_{CC} = V_{CCO}$ = 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	225	600	225	600	225	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.