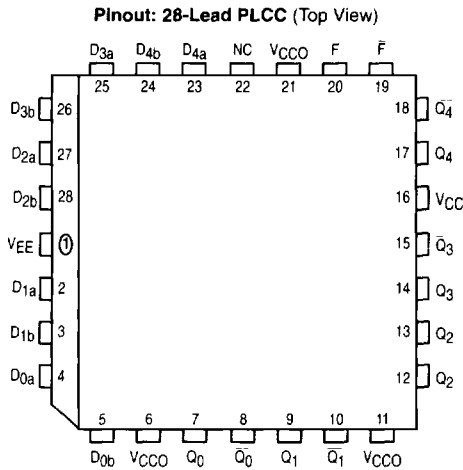


## Quint 2-Input AND/NAND Gate

The MC10E/100E104 is a quint 2-input AND/NAND gate. The function output F is the OR of all five AND gate outputs, while  $\bar{F}$  is the NOR. The Q outputs need not be terminated if only the F outputs are to be used.

- 600ps Max. Propagation Delay
- OR/NOR Function Outputs
- Extended 100E  $V_{EE}$  Range of - 4.2V to - 5.46V
- 75k $\Omega$  Input Pulldown Resistors



\* All VCC and VCC0 pins are tied together on the die.

### PIN NAMES

Pin	Function
D <sub>0a</sub> - D <sub>4b</sub>	Data Inputs
Q <sub>0</sub> - Q <sub>4</sub>	AND Outputs
$\bar{Q}_0$ - $\bar{Q}_4$	NAND Outputs
F	OR Output
$\bar{F}$	NOR Output

### FUNCTION OUTPUTS

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

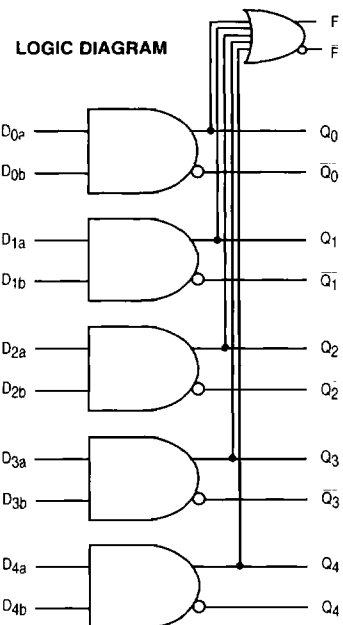
**MC10E104**  
**MC100E104**

**QUINT 2-INPUT**  
**AND/NAND GATE**



**FN SUFFIX**  
PLASTIC PACKAGE  
CASE 776-02

2



# MC10E104 MC100E104

## DC CHARACTERISTICS (V<sub>EE</sub> = V<sub>EE(min)</sub> to V<sub>EE(max)</sub>; V<sub>CC</sub> = V<sub>CCO</sub> = GND)

Symbol	Characteristic	0°C			25°C			85°C			Unit	Condition
		min	typ	max	min	typ	max	min	typ	max		
I <sub>IH</sub>	Input HIGH Current	200			200			200			μA	
I <sub>EE</sub>	Power Supply Current										mA	
	10E	38	46		38	46		38	46			
	100E	38	46		38	46		44	53			

## AC CHARACTERISTICS (V<sub>EE</sub> = V<sub>EE(min)</sub> to V<sub>EE(max)</sub>; V<sub>CC</sub> = V<sub>CCO</sub> = GND)

Symbol	Characteristic	0°C			25°C			85°C			Unit	Condition
		min	typ	max	min	typ	max	min	typ	max		
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay to Output D to Q D to F	225 500	385 725	600 1000	225 500	385 725	600 1000	225 500	385 725	600 1000	ps	
t <sub>SKEW</sub>	Within-Device Skew D to Q	75			75			75			ps	1
t <sub>r</sub> t <sub>f</sub>	Rise/Fall Times 20 - 80% Q F	275 300	425 475	700 700	275 300	425 475	700 700	275 300	425 475	700 700	ps	

**2**

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