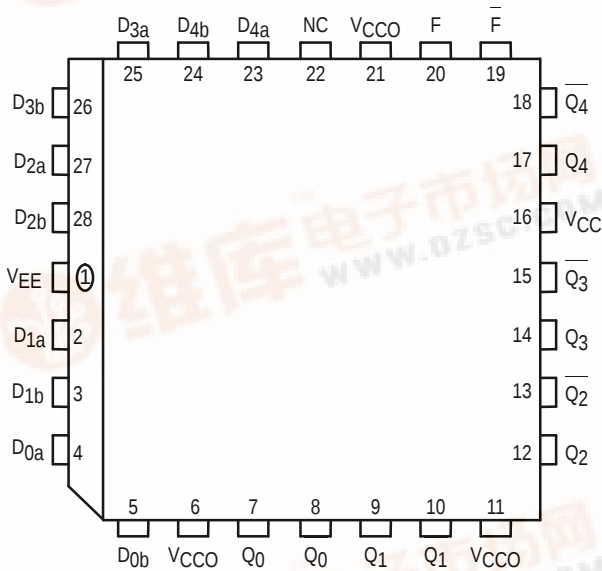


Quint 2-Input XOR/XNOR Gate

The MC10E/100E107 is a quint 2-input XOR/XNOR gate. The function output F is the OR of all five XOR 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 Ω Input Pulldown Resistors

Pinout: 28-Lead PLCC (Top View)



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

PIN NAMES

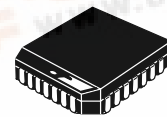
Pin	Function
D0a – D4b	Data Inputs
Q0 – Q4	XOR Outputs
$\bar{Q}0 - \bar{Q}4$	XNOR Outputs
F	OR Output
$\bar{F}$	NOR Output

FUNCTION OUTPUTS

$$F = (D0a \oplus D0b) + (D1a \oplus D1b) (D2a \oplus D2b) + (D3a \oplus D3b) + (D4a \oplus D4b)$$

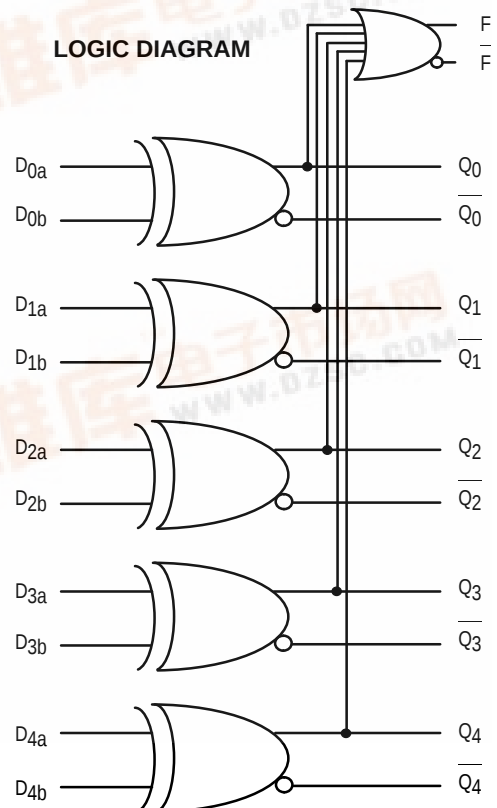
MC10E107
MC100E107

QUINT 2-INPUT
XOR/XNOR GATE



FN SUFFIX
PLASTIC PACKAGE
CASE 776-02

LOGIC DIAGRAM



MC10E107 MC100E107

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

Symbol	Characteristic	0°C			25°C			85°C			Unit	Condition
		min	typ	max	min	typ	max	min	typ	max		
I _{IH}	Input HIGH Current			200			200			200	μA	
I _{EE}	Power Supply Current										mA	
	10E		42	50		42	50		42	50		
	100E		42	50		42	50		48	58		

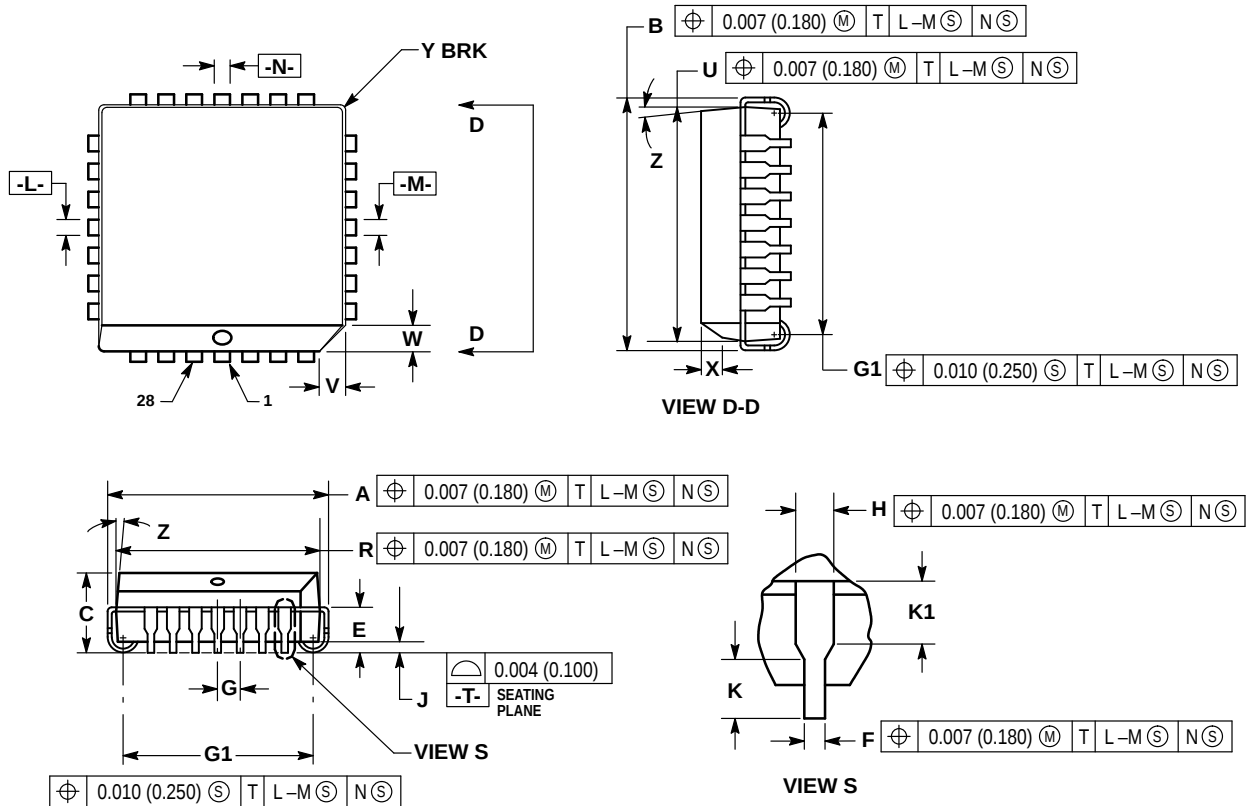
AC CHARACTERISTICS (V_{EE} = V_{EE}(min) to V_{EE}(max); V_{CC} = V_{CCO} = GND)

Symbol	Characteristic	0°C			25°C			85°C			Unit	Condition
		min	typ	max	min	typ	max	min	typ	max		
t _{PLH}	Propagation Delay to Output										ps	
t _{PHL}	D to Q	250	410	600	250	410	600	250	410	600		
	D to F	500	725	1000	500	725	100	500	725	1000		
t _{SKEW}	Within-Device Skew										ps	
	D to Q		75			75			75			1
t _r	Rise/Fall Times										ps	
t _f	20 - 80%											
	Q	275	450	700	275	450	700	275	450	700		
	F	300	475	700	300	475	700	300	475	700		

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

OUTLINE DIMENSIONS

FN SUFFIX
PLASTIC PLCC PACKAGE
CASE 776-02
ISSUE D



NOTES:

- DATUMS -L-, -M-, AND -N- DETERMINED WHERE TOP OF LEAD SHOULDER EXITS PLASTIC BODY AT MOLD PARTING LINE.
- DIM G1, TRUE POSITION TO BE MEASURED AT DATUM -T-, SEATING PLANE.
- DIM R AND U DO NOT INCLUDE MOLD FLASH. ALLOWABLE MOLD FLASH IS 0.010 (0.250) PER SIDE.
- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- CONTROLLING DIMENSION: INCH.
- THE PACKAGE TOP MAY BE SMALLER THAN THE PACKAGE BOTTOM BY UP TO 0.012 (0.300). DIMENSIONS R AND U ARE DETERMINED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY EXCLUSIVE OF MOLD FLASH, TIE BAR BURRS, GATE BURRS AND INTERLEAD FLASH, BUT INCLUDING ANY MISMATCH BETWEEN THE TOP AND BOTTOM OF THE PLASTIC BODY.
- DIMENSION H DOES NOT INCLUDE DAMBAR PROTRUSION OR INTRUSION. THE DAMBAR PROTRUSION(S) SHALL NOT CAUSE THE H DIMENSION TO BE GREATER THAN 0.037 (0.940). THE DAMBAR INTRUSION(S) SHALL NOT CAUSE THE H DIMENSION TO BE SMALLER THAN 0.025 (0.635).

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.485	0.495	12.32	12.57
B	0.485	0.495	12.32	12.57
C	0.165	0.180	4.20	4.57
E	0.090	0.110	2.29	2.79
F	0.013	0.019	0.33	0.48
G	0.050 BSC		1.27 BSC	
H	0.026	0.032	0.66	0.81
J	0.020	—	0.51	—
K	0.025	—	0.64	—
R	0.450	0.456	11.43	11.58
U	0.450	0.456	11.43	11.58
V	0.042	0.048	1.07	1.21
W	0.042	0.048	1.07	1.21
X	0.042	0.056	1.07	1.42
Y	—	0.020	—	0.50
Z	2°	10°	2°	10°
G1	0.410	0.430	10.42	10.92
K1	0.040	—	1.02	—

MC10E107 MC100E107

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