MICREL
The Infinite Bandwidth Company™

QUAD DRIVER

SY10E112
SY100E112

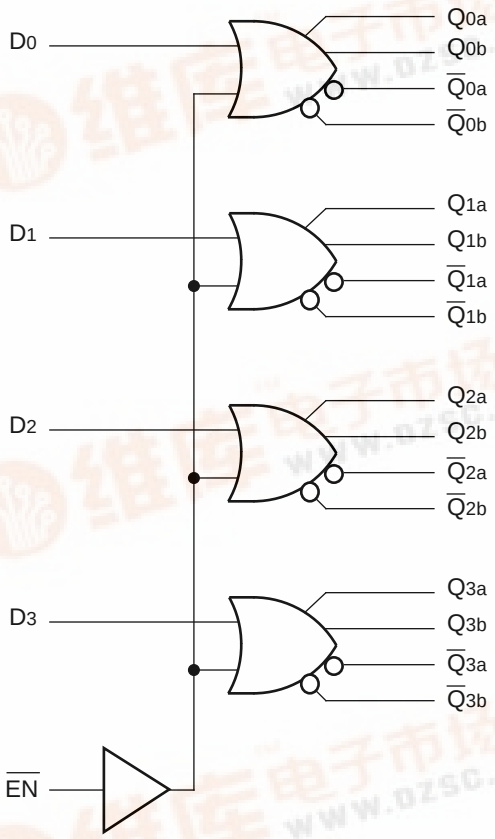
FEATURES

- **600ps max. propagation delay**
- **Extended 100E V_{EE} range of –4.2V to –5.5V**
- **Common enable input**
- **Fully compatible with industry standard 10KH, 100K I/O levels**
- **Internal 75KΩ input pulldown resistors**
- **Fully compatible with Motorola MC10E/100E112**
- **Available in 28-pin PLCC package**

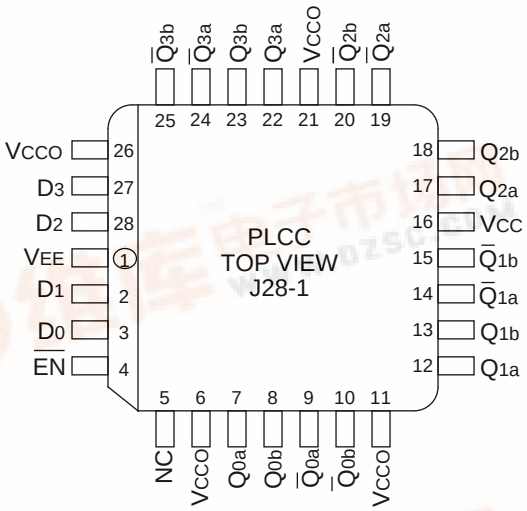
DESCRIPTION

The SY10/100E112 are quad drivers designed for use in new, high-performance ECL systems. The E112 has two pairs of OR/NOR outputs from each gate and a common, buffered enable input. The data input can also be used as an ECL memory address fan-out driver, although the E111 is designed specifically for this purpose, and offers lower skew than the E112. For memory address driver applications where scan capabilities are required, please refer to the SY10/100E212 device.

BLOCK DIAGRAM



PIN CONFIGURATION



PIN NAMES

Pin	Function
D_0-D_3	Data Inputs
$\overline{EN}$	Enable Input
Q_{na}, Q_{nb}	True Outputs
$\overline{Q}_{na}$, $\overline{Q}_{nb}$	Inverting Outputs
V_{CCO}	V_{CC} to Output

TRUTH TABLE

$\overline{EN}$	Q_n	$\overline{Q_n}$
L	D_n	$\overline{D_n}$
H	H	L

DC ELECTRICAL CHARACTERISTICS

V_{EE} = V_{EE} (Min.) to V_{EE} (Max.); V_{CC} = V_{CCO} = GND

Symbol	Parameter	T_A = –40°C			T_A = 0°C			T_A = +25°C			T_A = +85°C			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
I_{IH}	Input HIGH Current													µA
	$\overline{EN}$	—	—	150	—	—	150	—	—	150	—	—	150	
	D	—	—	200	—	—	200	—	—	200	—	—	200	
I_{EE}	Power Supply Current													mA
	10E	—	47	56	—	47	56	—	47	56	—	47	56	
	100E	—	47	56	—	47	56	—	47	56	—	54	65	

AC ELECTRICAL CHARACTERISTICS

V_{EE} = V_{EE} (Min.) to V_{EE} (Max.); V_{CC} = V_{CCO} = GND

Symbol	Parameter	T_A = –40°C			T_A = 0°C			T_A = +25°C			T_A = +85°C			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
t_{PLH}	Propagation Delay to Output													ps
t_{PHL}	D	200	400	600	200	400	600	200	400	600	200	400	600	
	$\overline{EN}$	275	450	675	275	450	675	275	450	675	275	450	675	
t_{skew}	Within-Device Skew													ps
	D_n to Q_n, $\overline{Q_n}$[1]	—	80	—	—	80	—	—	80	—	—	80	—	
	Q_{na} to Q_{nb}[2]	—	40	—	—	40	—	—	40	—	—	40	—	
t_r	Rise/Fall Time	275	425	700	275	425	700	275	425	700	275	425	700	ps
t_f	20% to 80%													

NOTES:

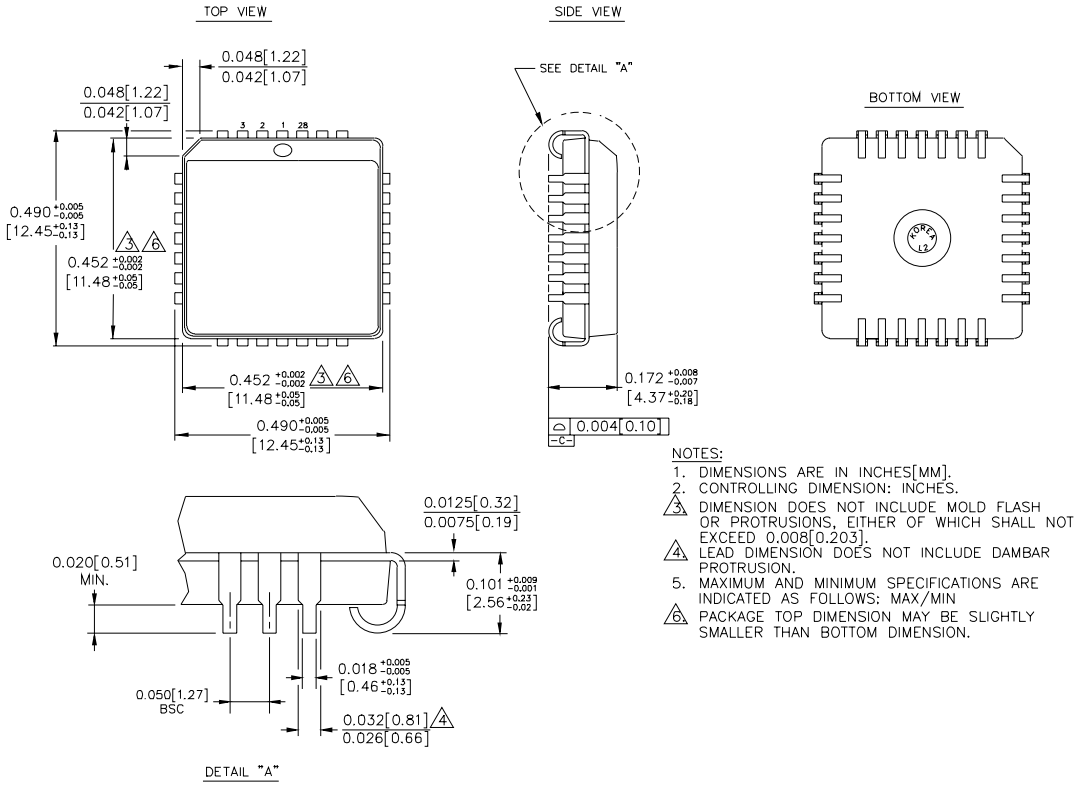
1. Within-device skew is defined as identical transitions on similar paths through a device.
2. Skew defined between common OR or common NOR outputs of a single gate.

PRODUCT ORDERING CODE

Ordering Code	Package Type	Operating Range
SY10E112JC	J28-1	Commercial
SY10E112JCTR	J28-1	Commercial
SY100E112JC	J28-1	Commercial
SY100E112JCTR	J28-1	Commercial

Ordering Code	Package Type	Operating Range
SY10E112JI	J28-1	Industrial
SY10E112JITR	J28-1	Industrial
SY100E112JI	J28-1	Industrial
SY100E112JITR	J28-1	Industrial

28 LEAD PLCC (J28-1)



NOTES:
1. DIMENSIONS ARE IN INCHES[MM].
2. CONTROLLING DIMENSION: INCHES.
3. DIMENSION DOES NOT INCLUDE MOLD FLASH OR PROTRUSIONS, EITHER OF WHICH SHALL NOT EXCEED 0.008[0.203].
4. LEAD DIMENSION DOES NOT INCLUDE DAMBAR PROTRUSION.
5. MAXIMUM AND MINIMUM SPECIFICATIONS ARE INDICATED AS FOLLOWS: MAX/MIN
6. PACKAGE TOP DIMENSION MAY BE SLIGHTLY SMALLER THAN BOTTOM DIMENSION.

Rev. 03

MICREL-SYNERGY 3250 SCOTT BOULEVARD SANTA CLARA CA 95054 USA
TEL + 1 (408) 980-9191 FAX + 1 (408) 914-7878 WEB http://www.micrel.com