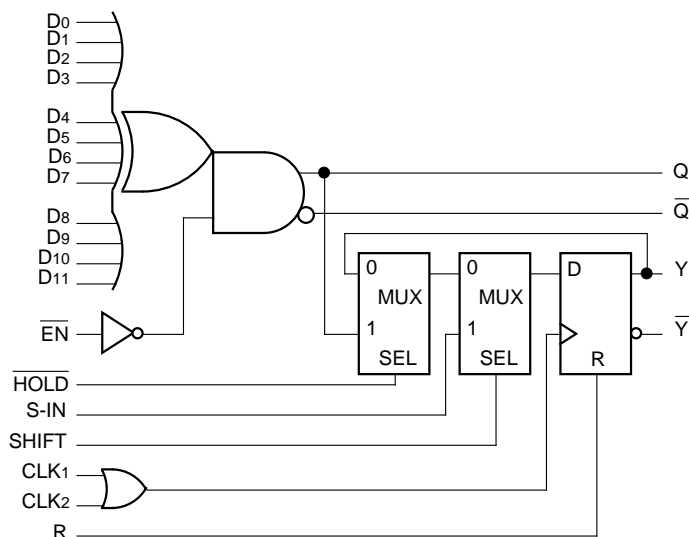


## FEATURES

- Provides odd-HIGH parity of 12 inputs
- Extended 100E VEE range of -4.2V to -5.5V
- Output register with Shift/Hold capability
- 900ps max. D to Q, /Q output
- Enable control
- Asynchronous Register Reset
- Differential outputs
- Fully compatible with industry standard 10KH, 100K ECL levels
- Internal 75KΩ input pulldown resistors
- Fully compatible with Motorola MC10E/100E160
- Available in 28-pin PLCC package

## BLOCK DIAGRAM



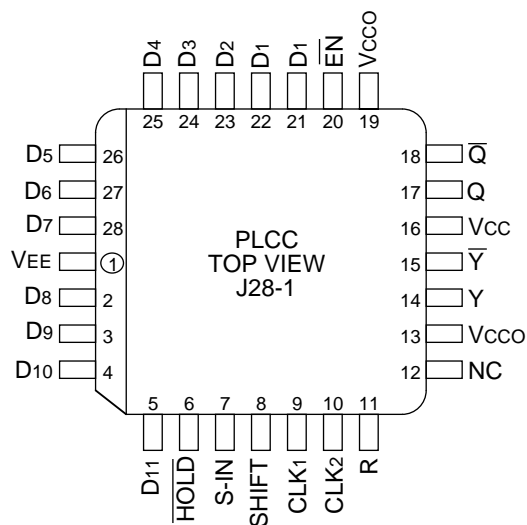
## DESCRIPTION

The SY10/100E160 are high-speed, 12-bit parity generator/checkers with differential outputs, for use in new, high-performance ECL systems. The output Q takes on a logic HIGH value only when an odd number of inputs are at a logic HIGH. A logic HIGH on the enable input (EN) forces the output Q to a logic LOW.

An additional feature of the E160 is the output register. Two multiplexers and their associated signals control the register input by providing the option of holding present data, loading the new parity data or shifting external data in. To hold the present data, the Hold signal (HOLD) must be at a logic LOW level. If the HOLD signal is at a logic HIGH, the data present at the Q output is passed through the first multiplexer. Taking the Shift signal (SHIFT) to a logic HIGH will shift the data at the S-IN pin into the output register. If the SHIFT signal is at a logic LOW, the output of the first multiplexer is then passed through to the register.

The register itself is clocked on the rising edge of CLK1 or CLK2 (or both). The presence of a logic HIGH on the reset pin (R) forces the register output Y to a logic LOW.

## PIN CONFIGURATION



**PIN NAMES**

Pin	Function
D0–D11	Data Inputs
S-IN	Serial Data Input
EN	Enable, active LOW
HOLD	Hold, active LOW
SHIFT	Shift, active HIGH
CLK1, CLK2	Clock Inputs
R	Reset Input
Q, $\bar{Q}$	Direct Output
Y, $\bar{Y}$	Register Output
Vcco	Vcc to Output

**TRUTH TABLE**

Number of HIGH Inputs	Output Q
Even	LOW
Odd	HIGH

**DC ELECTRICAL CHARACTERISTICS**

V<sub>EE</sub> = V<sub>EE</sub> (Min.) to V<sub>EE</sub> (Max.); V<sub>CC</sub> = V<sub>CCO</sub> = GND

Symbol	Parameter	T <sub>A</sub> = 0°C			T <sub>A</sub> = +25°C			T <sub>A</sub> = +85°C			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
I <sub>IH</sub>	Input HIGH Current	—	—	200	—	—	200	—	—	200	μA	—
	CLK1, CLK2	—	—	300	—	—	300	—	—	300		
	R	—	—	150	—	—	150	—	—	150		
I <sub>EE</sub>	All Other Inputs	—	—	150	—	—	150	—	—	150	mA	—
	Power Supply Current	—	82	98	—	82	98	—	82	98		
	10E	—	82	98	—	82	98	—	82	98		
	100E	—	82	98	—	82	98	—	94	113		

**AC ELECTRICAL CHARACTERISTICS**

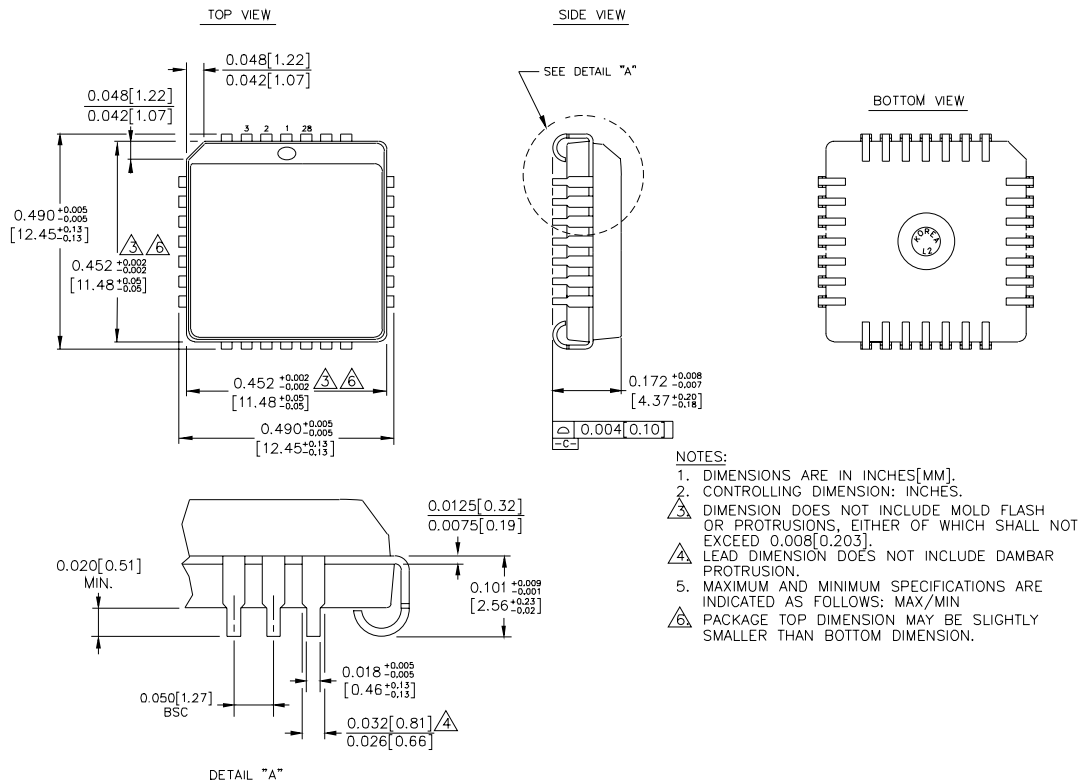
VEE = VEE (Min.) to VEE (Max.); VCC = VCCO = GND

Symbol	Parameter	TA = 0°C			TA = +25°C			TA = +85°C			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
tPLH tPHL	Propagation Delay to Output D to Q EN to Q CLK to Y R to Y	400 300 275 275	650 550 500 500	950 750 700 725	400 300 275 275	650 550 500 500	950 750 700 725	400 300 275 275	650 550 500 500	950 750 700 725	ps	—
ts	Set-up Time D HOLD S-IN SHIFT	1200 600 350 500	900 300 150 250	— — — —	1200 600 350 500	900 300 150 250	— — — —	1200 600 350 500	900 300 150 250	— — — —	ps	—
tH	Hold Time D HOLD S-IN SHIFT	−400 100 300 200	−900 −300 −150 −250	— — — —	−400 100 300 200	−900 −300 −150 −250	— — — —	−400 100 300 200	−900 −300 −150 −250	— — — —	ps	—
tr tf	Rise/Fall Time 20% to 80%	300	450	650	300	450	650	300	450	650	ps	—

**PRODUCT ORDERING CODE**

Ordering Code	Package Type	Operating Range
SY10E160JC	J28-1	Commercial
SY10E160JCTR	J28-1	Commercial
SY100E160JC	J28-1	Commercial
SY100E160JCTR	J28-1	Commercial

## 28 LEAD PLCC (J28-1)



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>

This information is believed to be accurate and reliable, however no responsibility is assumed by Micrel for its use nor for any infringement of patents or other rights of third parties resulting from its use. No license is granted by implication or otherwise under any patent or patent right of Micrel Inc.

© 2000 Micrel Incorporated