

FEATURES

- Hamming code generation
- Extended 100E VEE range of -4.2V to -5.5V
- 8-bit wide
- Expandable for more width
- Provides parity register
- Fully compatible with industry standard 10KH, 100K ECL levels
- Internal 75KΩ input pulldown resistors
- Fully compatible with Motorola MC10E/100E193
- Available in 28-pin PLCC package

DESCRIPTION

The SY10/100E193 are error detection and correction (EDAC) circuits designed for use in new, high-performance ECL systems. The E193 generates hamming parity codes on an 8-bit word as shown in the block diagram. The P5 output gives the parity of the whole word. PGEN provides word parity after Odd/Even parity control and gating with the BPAR input. PGEN also feeds into a 1-bit shiftable register for use as part of a scan ring.

The combinatorial part of the device generates the same code pattern as the Motorola MC10193.

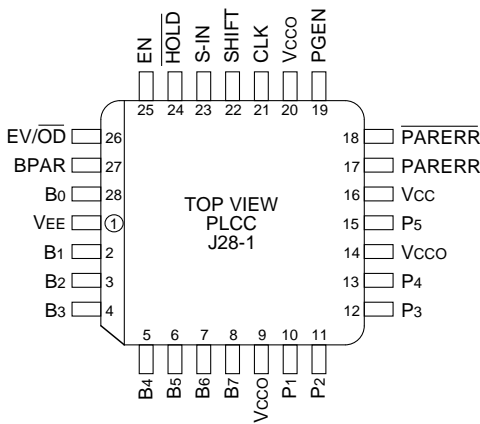
Used in conjunction with 12-bit parity generators, such as the E160, a SECDED (single error correction, double error detection) error system can be designed for a multiple of an 8-bit word.

PIN NAMES

Pin	Function
B0-B7	Check Bit Inputs
BPAR	Check Bit Parity Input
EV/OD	Even/Odd Parity Select
EN	Parity Enable
HOLD	Syndrome Hold Input
S-IN	Syndrome Bit Input
SHIFT	Syndrome Bit Shift
CLK	Clock Input
P1-P5	Parity Output
PGEN	Parity Generate Output
PARERR/PARERR	Parity Error Output
Vcco	Vcc to Output

PACKAGE/ORDERING INFORMATION

Ordering Information⁽¹⁾



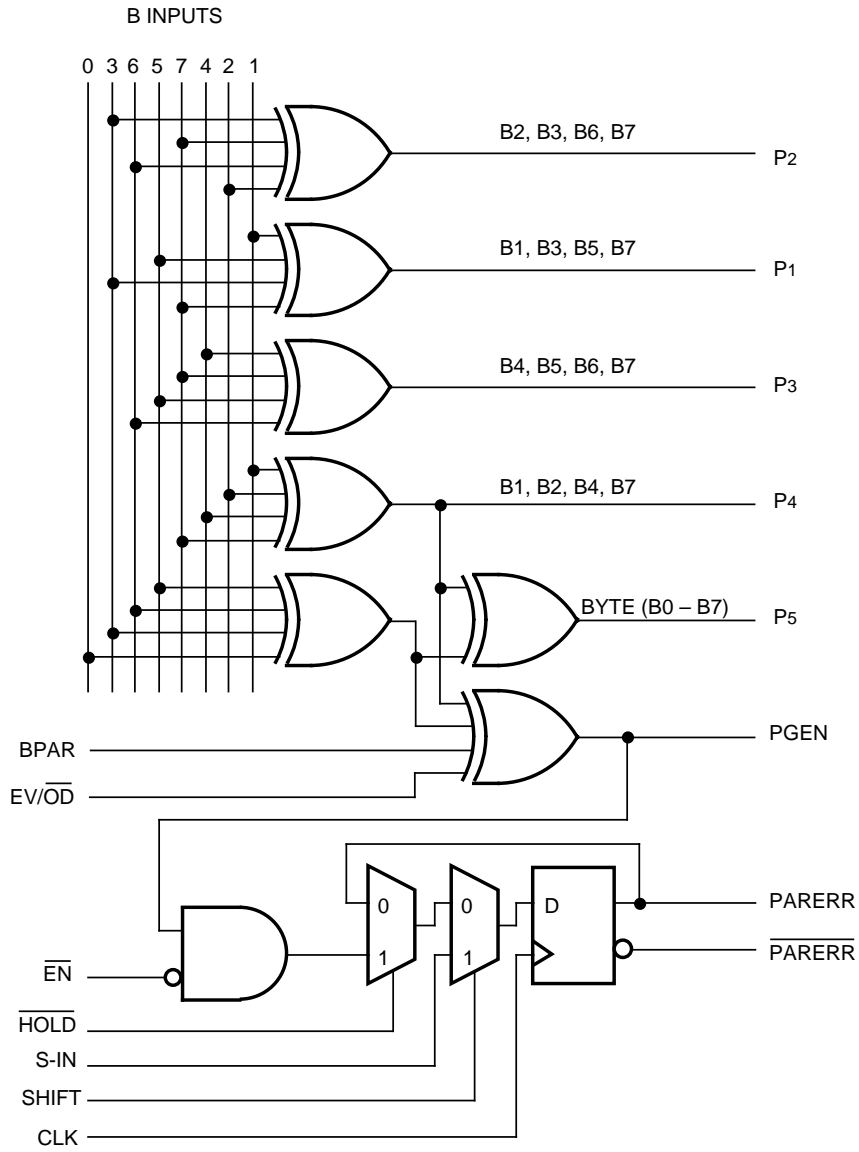
28-Pin PLCC (J28-1)

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10E193JC	J28-1	Commercial	SY10E193JC	Sn-Pb
SY10E193JCTR ⁽²⁾	J28-1	Commercial	SY10E193JC	Sn-Pb
SY100E193JC	J28-1	Commercial	SY100E193JC	Sn-Pb
SY100E193JCTR ⁽²⁾	J28-1	Commercial	SY100E193JC	Sn-Pb
SY10E193JZ ⁽³⁾	J28-1	Commercial	SY10E193JZ with Pb-Free bar-line indicator	Matte-Sn
SY10E193JZTR ^(2, 3)	J28-1	Commercial	SY10E193JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E193JZ ⁽³⁾	J28-1	Commercial	SY100E193JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E193JZTR ^(2, 3)	J28-1	Commercial	SY100E193JZ with Pb-Free bar-line indicator	Matte-Sn

Notes:

1. Contact factory for die availability. Dice are guaranteed at T_A = 25°C, DC Electricals only.
2. Tape and Reel.
3. Pb-Free package is recommended for new designs.

BLOCK DIAGRAM



DC ELECTRICAL CHARACTERISTICS

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

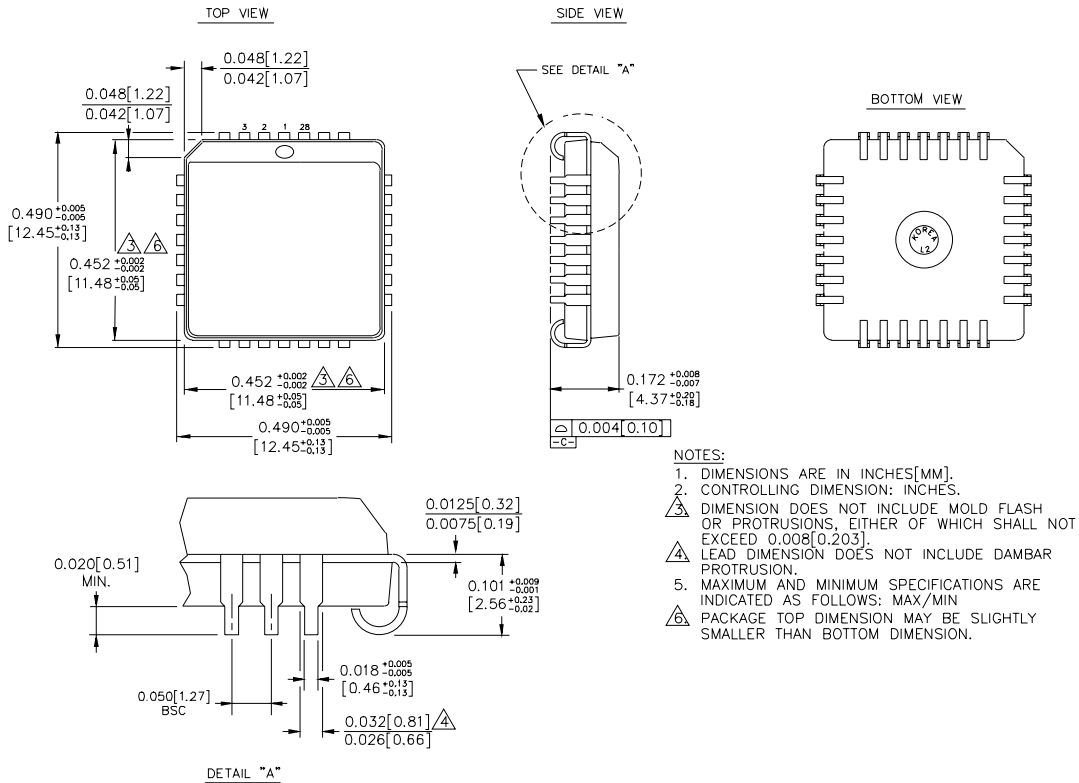
Symbol	Parameter	TA = 0°C			TA = +25°C			TA = +85°C			Unit	Condition	
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.			
I _{IH}	Input HIGH Current	—	—	150	—	—	150	—	—	150	μA	—	
I _{EE}	Power Supply Current	—	112	134	—	112	134	—	112	134	mA	—	
		10E	—	112	134	—	112	134	—	112			134
		100E	—	112	134	—	112	134	—	129			155

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.		
t _{PD}	Propagation Delay to Output	350	700	1000	350	700	1000	350	700	1000	ps	—
	B to P1, P2, P3, P4	400	775	1150	400	775	1150	400	775	1150		
	B to P5	350	650	850	350	650	850	350	650	850		
	EV/ \overline{OD} , BPAR to PGEN	600	1000	1450	600	1000	1450	600	1000	1450		
	B to PGEN	300	550	850	300	550	850	300	550	850		
t _s	Set-up Time	400	150	—	400	150	—	400	150	—	ps	—
	SHIFT	300	50	—	300	50	—	300	50	—		
	S-IN	750	350	—	750	350	—	750	350	—		
	\overline{HOLD}	500	250	—	500	250	—	500	250	—		
	\overline{EN}	1300	850	—	1300	850	—	1300	850	—		
	EV/ \overline{OD}	1300	850	—	1300	850	—	1300	850	—		
	BPAR	1700	1100	—	1700	1100	—	1700	1100	—		
t _H	Hold Time	200	-150	—	200	-150	—	200	-150	—	ps	—
	SHIFT	300	-50	—	300	-50	—	300	-50	—		
	S-IN	100	-350	—	100	-350	—	100	-350	—		
	\overline{HOLD}	100	-250	—	100	-250	—	100	-250	—		
	\overline{EN}	-200	-850	—	-200	-850	—	-200	-850	—		
	EV/ \overline{OD}	-200	-850	—	-200	-850	—	-200	-850	—		
	BPAR	-300	-1100	—	-300	-1100	—	-300	-1100	—		
t _r t _f	Rise/Fall Time	300	700	1100	300	700	1100	300	700	1100	ps	—
	20% to 80%											

28-PIN PLCC (J28-1)



Rev. 03

MICREL, INC. 2180 FORTUNE DRIVE SAN JOSE, CA 95131 USA

TEL + 1 (408) 944-0800 FAX + 1 (408) 474-1000 WEB <http://www.micrel.com>

The information furnished by Micrel in this data sheet is believed to be accurate and reliable. However, no responsibility is assumed by Micrel for its use. Micrel reserves the right to change circuitry and specifications at any time without notification to the customer.

Micrel Products are not designed or authorized for use as components in life support appliances, devices or systems where malfunction of a product can reasonably be expected to result in personal injury. Life support devices or systems are devices or systems that (a) are intended for surgical implant into the body or (b) support or sustain life, and whose failure to perform can be reasonably expected to result in a significant injury to the user. A Purchaser's use or sale of Micrel Products for use in life support appliances, devices or systems is at Purchaser's own risk and Purchaser agrees to fully indemnify Micrel for any damages resulting from such use or sale.

© 2006 Micrel, Incorporated.