

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 75K Ω 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.

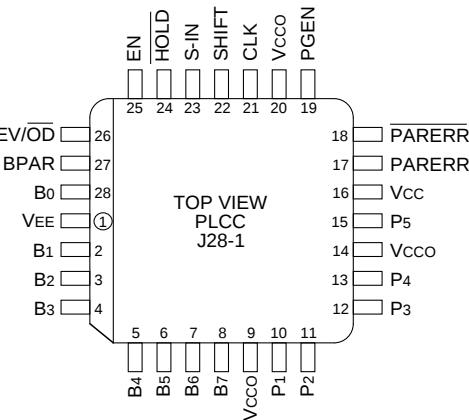
Used in conjunction with 12-bit parity generators, such as the E160, a SECDED (single error correction, double error detection) error system can be designed for a multiple of an 8-bit word.

PIN NAMES

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

PACKAGE/ORDERING INFORMATION

Ordering Information⁽¹⁾

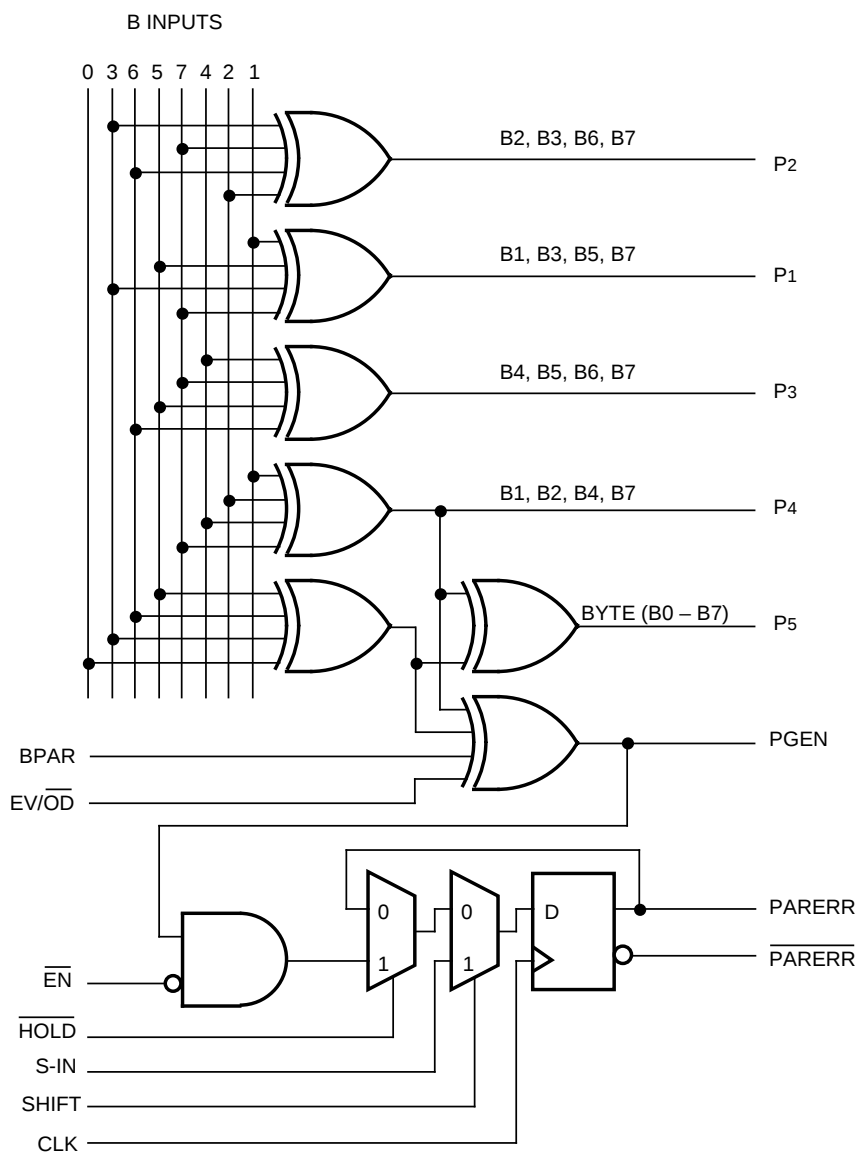


28-Pin PLCC (J28-1)

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.

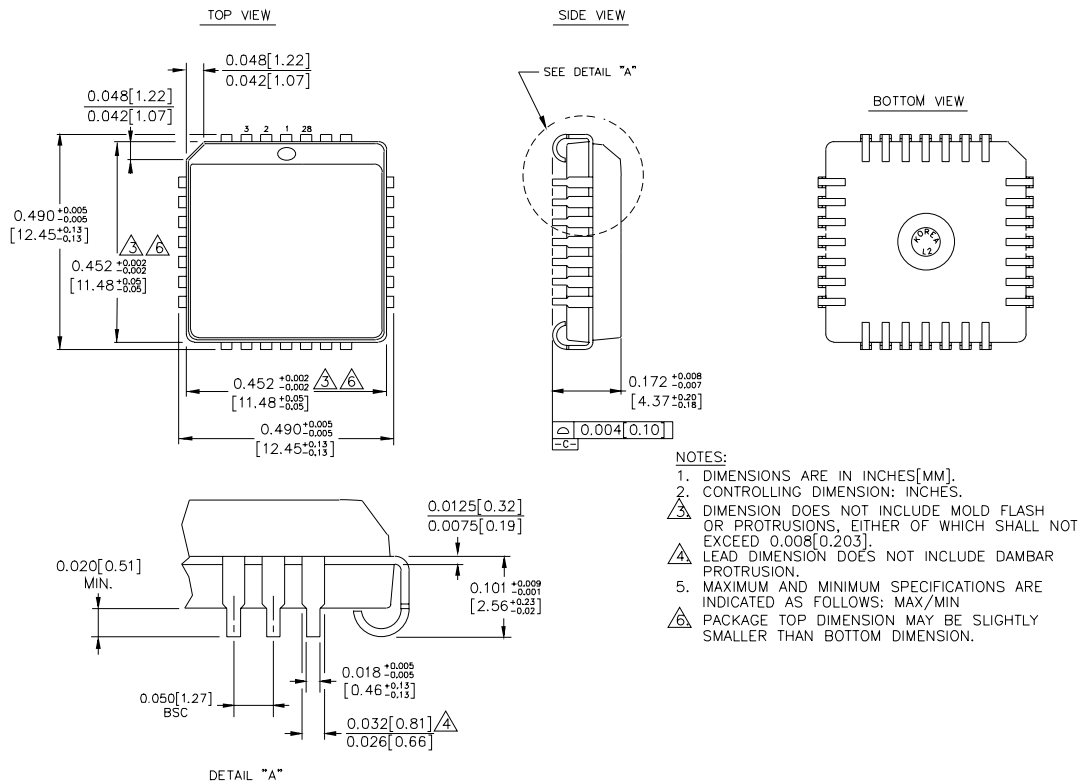
BLOCK DIAGRAM

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

Symbol	Parameter	T _A = 0°C			T _A = +25°C			T _A = +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 CHARACTERISTICSV_{EE} = V_{EE} (Min.) to V_{EE} (Max.); V_{CC} = V_{CCO} = GND

Symbol	Parameter	T _A = 0°C			T _A = +25°C			T _A = +85°C			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
t _{PD}	Propagation Delay to Output B to P1, P2, P3, P4	350	700	1000	350	700	1000	350	700	1000	ps	—
	B to P5	400	775	1150	400	775	1150	400	775	1150		
	EV/ $\overline{\text{OD}}$, BPAR to PGEN	350	650	850	350	650	850	350	650	850		
	B to PGEN	600	1000	1450	600	1000	1450	600	1000	1450		
	CLK to PARERR	300	550	850	300	550	850	300	550	850		
t _s	Set-up Time	400	150	—	400	150	—	400	150	—	ps	—
	SHIFT	400	150	—	400	150	—	400	150	—		
	S-IN	300	50	—	300	50	—	300	50	—		
	HOLD	750	350	—	750	350	—	750	350	—		
	EN	500	250	—	500	250	—	500	250	—		
	EV/ $\overline{\text{OD}}$	1300	850	—	1300	850	—	1300	850	—		
	BPAR	1300	850	—	1300	850	—	1300	850	—		
t _H	B	1700	1100	—	1700	1100	—	1700	1100	—	ps	—
	Hold Time	200	—150	—	200	—150	—	200	—150	—		
	SHIFT	300	—50	—	300	—50	—	300	—50	—		
	S-IN	100	—350	—	100	—350	—	100	—350	—		
	HOLD	100	—250	—	100	—250	—	100	—250	—		
	EN	—200	—850	—	—200	—850	—	—200	—850	—		
	EV/ $\overline{\text{OD}}$	—200	—850	—	—200	—850	—	—200	—850	—		
t _r t _f	BPAR	—300	—1100	—	—300	—1100	—	—300	—1100	—	ps	—
	B	300	700	1100	300	700	1100	300	700	1100		
	Rise/Fall Time 20% to 80%	300	700	1100	300	700	1100	300	700	1100	ps	—

28-PIN PLCC (J28-1)

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