

FEATURES

- 9-bit latch
- Extended 100E V_{EE} range of -4.2V to -5.5V
- Parity detection/generation
- 800ps max. D to Output
- Reset
- Internal 75K Ω input pull-down resistors
- Fully compatible with Motorola MC10E/100E175
- Available in 28-pin PLCC package

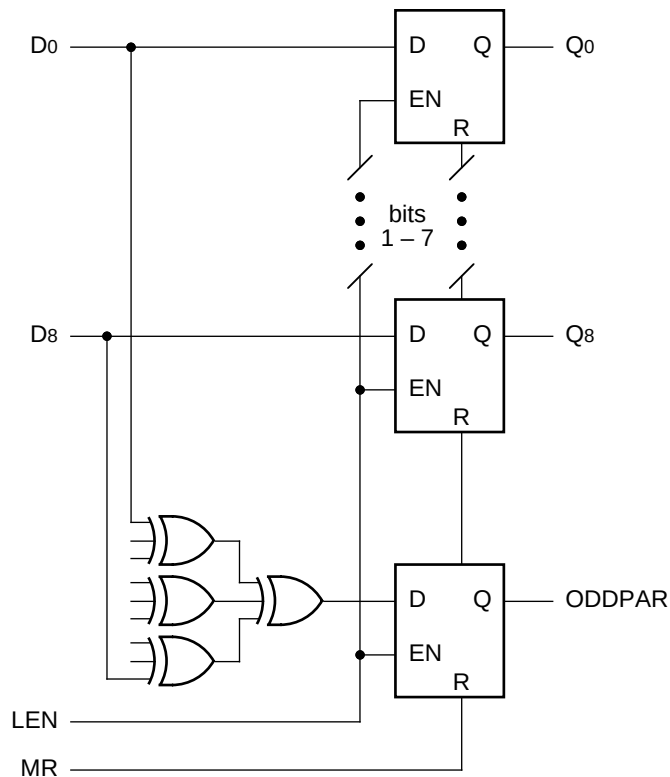
DESCRIPTION

The SY10/100E175 are 9-bit latches. They also feature a tenth latched output (ODDPAR) which is formed as the odd parity of the nine data inputs (ODDPAR is HIGH if an odd number of the inputs are HIGH).

The E175 can also be used to generate byte parity by using D₈ as the parity-type select (L = even parity, H = odd parity) and using ODDPAR as the byte parity output.

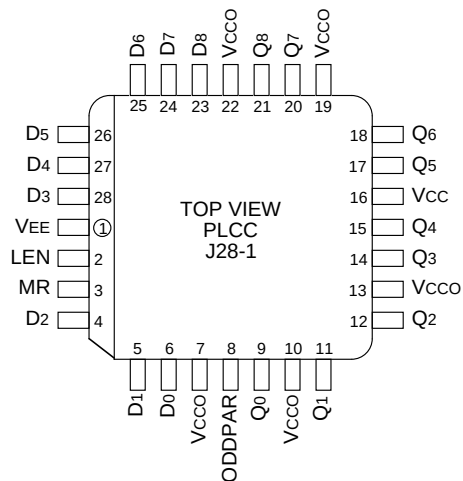
The LEN pin latches the data when asserted with a logical high and makes the latch transparent when placed at a logic low level.

BLOCK DIAGRAM



PIN NAMES

Pin	Function
D ₀ – D ₈	Data Inputs
LEN	Latch Enable
MR	Master Reset
Q ₀ – Q ₈	Data Outputs
ODDPAR	Parity Output
V _{CC0}	V _{CC} to Output

PACKAGE/ORDERING INFORMATION**28-Pin PLCC (J28-1)****Ordering Information⁽¹⁾**

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10E175JC	J28-1	Commercial	SY10E175JC	Sn-Pb
SY10E175JCTR ⁽²⁾	J28-1	Commercial	SY10E175JC	Sn-Pb
SY100E175JC	J28-1	Commercial	SY100E175JC	Sn-Pb
SY100E175JCTR ⁽²⁾	J28-1	Commercial	SY100E175JC	Sn-Pb
SY10E175JZ ⁽³⁾	J28-1	Commercial	SY10E175JZ with Pb-Free bar-line indicator	Matte-Sn
SY10E175JZTR ^(2, 3)	J28-1	Commercial	SY10E175JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E175JZ ⁽³⁾	J28-1	Commercial	SY100E175JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E175JZTR ^(2, 3)	J28-1	Commercial	SY100E175JZ with Pb-Free bar-line indicator	Matte-Sn

Notes:

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

TRUTH TABLE

D	LEN	MR	Q	ODDPAR
H	L	L	H	H if odd no. of D _n HIGH
L	L	L	L	H if odd no. of D _n HIGH
X	H	L	Q ₀	Q ₀
X	X	H	L	L

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

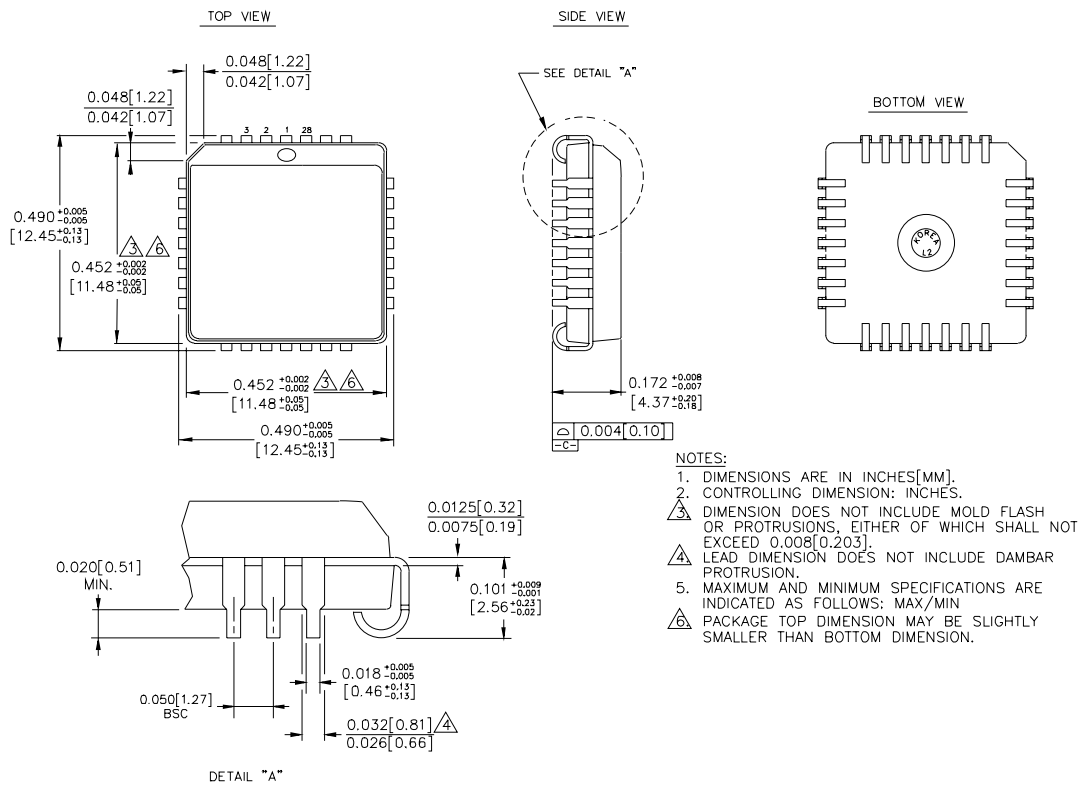
Symbol	Parameter	T _A = 0°C			T _A = +25°C			T _A = +85°C			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
I _{IH}	Input HIGH Current	—	—	150	—	—	150	—	—	150	μA	—
I _{EE}	Power Supply Current	—	—	—	—	—	—	—	—	—	mA	—
	10E	—	110	132	—	110	132	—	110	132		
	100E	—	110	132	—	110	132	—	127	152		

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 D to Q	450	600	800	450	600	800	450	600	800	ps	—
	D to ODDPAR	850	1150	1450	850	1150	1450	850	1150	1450		
	LEN to Q	525	700	900	525	700	900	525	700	900		
	LEN to ODDPAR	525	700	900	525	700	900	525	700	900		
	MR to Q (t _{PHL})	525	700	900	525	700	900	525	700	900		
	MR to ODDPAR (t _{PHL})	525	700	900	525	700	900	525	700	900		
t _S	Set-up Time D (Q)	275	100	—	275	—	—	275	—	—	ps	—
	D (ODDPAR)	900	700	—	900	—	—	900	—	—		
t _H	Hold Time D (Q)	175	–100	—	175	—	—	175	—	—	ps	—
	D (ODDPAR)	–300	–700	—	–300	—	—	–300	—	—		
t _{RR}	Reset Recovery Time	850	600	—	850	600	—	850	600	—	ps	—
t _{skew}	Within-Device Skew LEN, MR	—	75	—	—	75	—	—	75	—	ps	1
	D to Q	—	75	—	—	75	—	—	75	—		
	D to ODDPAR	—	200	—	—	200	—	—	200	—		
t _r t _f	Rise/Fall Times 20–80%	300	500	800	300	500	800	300	500	800	ps	—

Note:

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

28-PIN PLCC (J28-1)

Rev. 03

MICREL, INC. 2180 FORTUNE DRIVE SAN JOSE, CA 95131 USATEL + 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.