

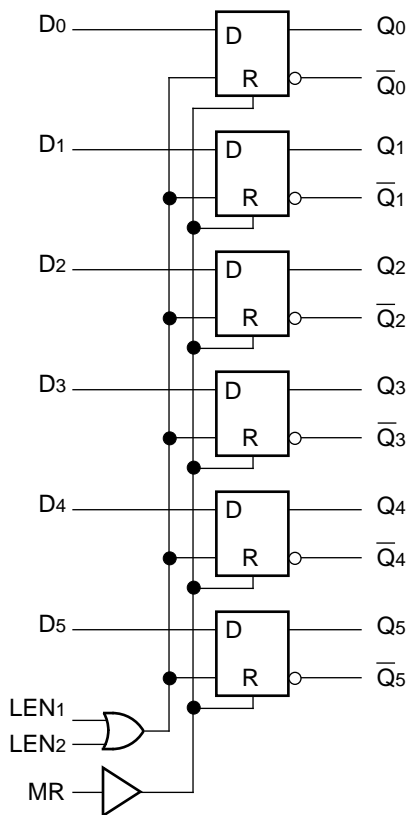
FEATURES

- 700ps max. propagation delay
- Extended 100E VEE range of -4.2V to -5.5V
- Differential outputs
- Fully compatible with industry standard 10KH, 100K ECL levels
- Internal 75KΩ input pulldown resistors
- Fully compatible with Motorola MC10E/100E150
- Available in 28-pin PLCC package

DESCRIPTION

The SY10/100E150 are 6-bit D latches with differential outputs designed for use in new, high-performance ECL systems. When both Latch Enables (LEN₁, LEN₂) are at a logic LOW, the latch is in the transparent mode and input data propagates through to the output. A logic HIGH on either LEN₁ or LEN₂ (or both) latches the input data. The Master Reset (MR) overrides all other signals to set the Q outputs to a logic LOW.

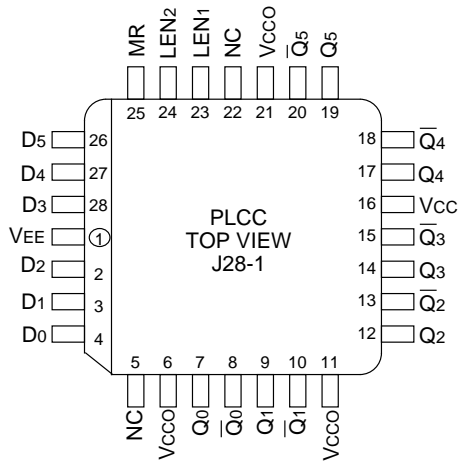
BLOCK DIAGRAM



PIN NAMES

Pin	Function
D ₀ -D ₅	Data Inputs
LEN ₁ , LEN ₂	Latch Enables
MR	Master Reset
Q ₀ -Q ₅	True Outputs
$\overline{Q_0}$ - $\overline{Q_5}$	Inverting Outputs
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
SY10E150JC	J28-1	Commercial	SY10E150JC	Sn-Pb
SY10E150JCTR ⁽²⁾	J28-1	Commercial	SY10E150JC	Sn-Pb
SY100E150JC	J28-1	Commercial	SY100E150JC	Sn-Pb
SY100E150JCTR ⁽²⁾	J28-1	Commercial	SY100E150JC	Sn-Pb
SY10E150JZ ⁽³⁾	J28-1	Commercial	SY10E150JZ with Pb-Free bar-line indicator	Matte-Sn
SY10E150JZTR ^(2, 3)	J28-1	Commercial	SY10E150JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E150JZ ⁽³⁾	J28-1	Commercial	SY100E150JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E150JZTR ^(2, 3)	J28-1	Commercial	SY100E150JZ 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.

TRUTH TABLE⁽¹⁾

(Each Latch)

INPUTS			MR	OUTPUTS		Operating Mode
D _n	LEN ₁	LEN ₂		Q _n	\bar{Q}_n	
H	L	L	L	H	L	Latch
L	L	L	L	L	H	
X	X	H	L	Latched ⁽²⁾	Latched ⁽²⁾	
X	H	X	L	Latched ⁽²⁾	Latched ⁽²⁾	
X	X	X	H	L	H	Asynchronous

Notes:

- H = HIGH state
L = LOW state
X = Don't care
- Retains Data that is present before the LEN positive transition.

DC ELECTRICAL CHARACTERISTICSV_{EE} = V_{EE} (Min.) to V_{EE} (Max.); V_{CC} = V_{CC0} = 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 D LEN MR	—	—	200	—	—	200	—	—	200	μA	—
I _{EE}	Power Supply Current 10E 100E	—	52	62	—	52	62	—	52	62	mA	—
		—	52	62	—	52	62	—	60	72		

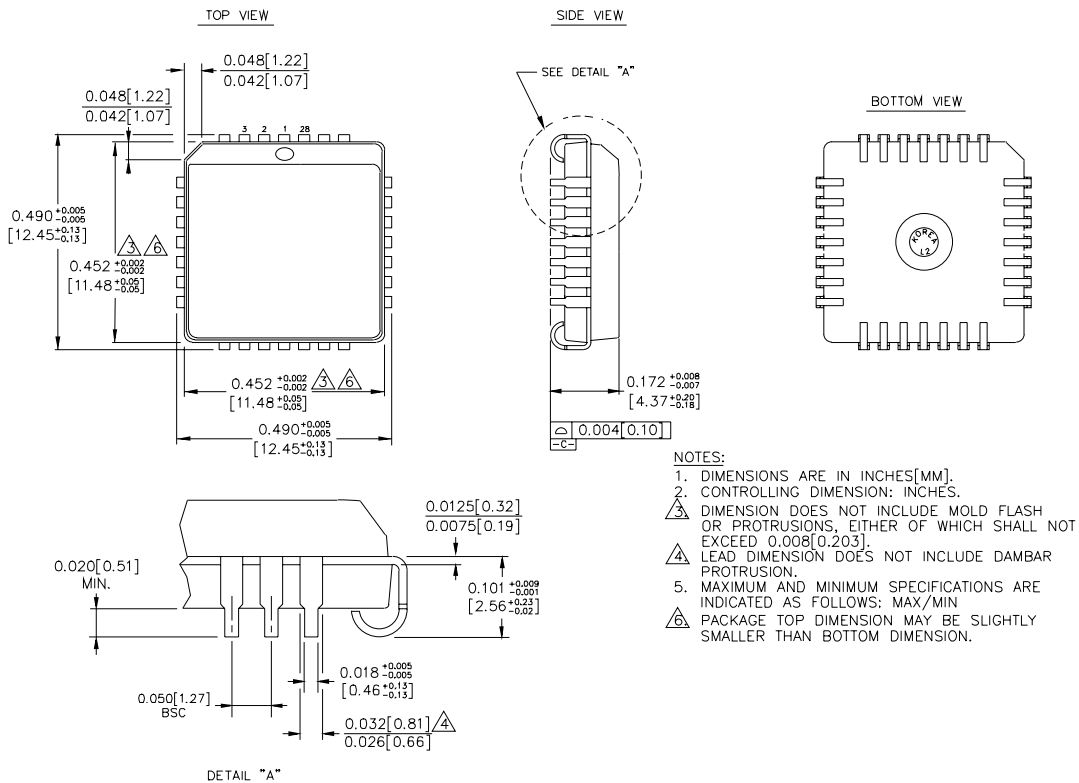
AC ELECTRICAL CHARACTERISTICSV_{EE} = V_{EE} (Min.) to V_{EE} (Max.); V_{CC} = V_{CC0} = GND

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 LEN MR	250	375	550	250	375	550	250	375	550	ps	—
t _S	Set-up Time, D	200	50	—	200	50	—	200	50	—	ps	—
t _H	Hold Time, D	200	-50	—	200	-50	—	200	-50	—	ps	—
t _{RR}	Reset Recovery Time	750	650	—	750	650	—	750	650	—	ps	—
t _{PW}	Minimum Pulse Width, MR	400	—	—	400	—	—	400	—	—	ps	—
t _{skew}	Within-Device Skew	—	50	—	—	50	—	—	50	—	ps	1
t _r t _f	Rise/Fall Time 20% to 80%	300	450	650	300	450	650	300	450	650	ps	—

Note:

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

28-PIN 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.

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