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MICREL
The Infinite Bandwidth Company™

6-BIT 2:1 MUX-LATCH

SY10E155
SY100E155
FINAL

FEATURES

- **750ps max. LEN to output**
- **Extended 100E V_{EE} range of –4.2V to –5.5V**
- **700ps max. D to output**
- **Single-ended outputs**
- **Asynchronous Master Reset**
- **Dual latch-enables**
- **Fully compatible with industry standard 10KH, 100K ECL levels**
- **Internal 75KΩ input pulldown resistors**
- **Fully compatible with Motorola MC10E/100E155**
- **Available in 28-pin PLCC package**

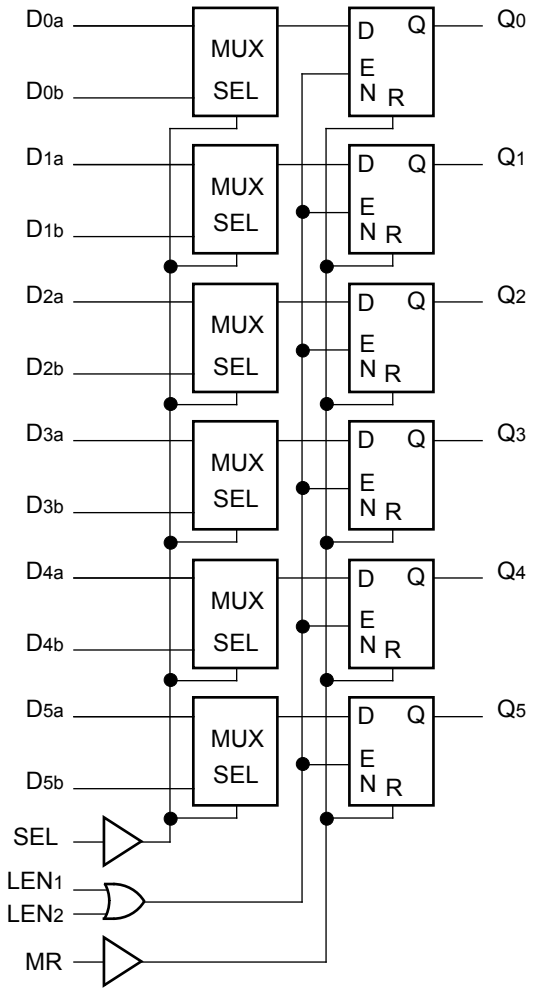
DESCRIPTION

The SY10/100E155 offer six 2:1 multiplexers followed by latches with single-ended outputs, designed for use in new, high-performance ECL systems. The two external latch-enable signals (LEN_1 and LEN_2) are gated through a logical OR operation before use as control for the six latches. When both LEN_1 and LEN_2 are at a logic LOW, the latches are transparent, thus presenting the data from the multiplexers at the output pins. If either LEN_1 or LEN_2 (or both) are at a logic HIGH, the outputs are latched.

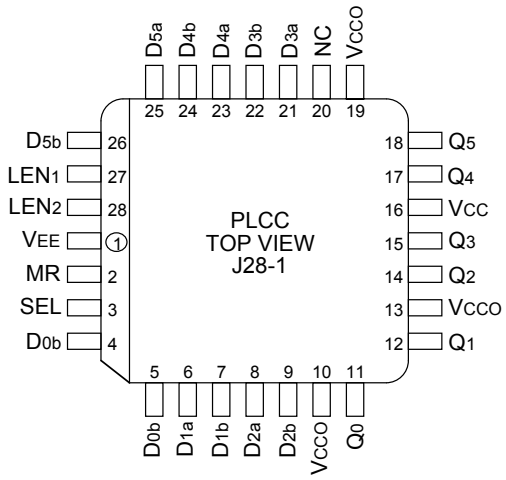
The multiplexer operation is controlled by the SEL (Select) signal which selects one of the two bits of input data at each mux to be passed through.

The MR (Master Reset) signal operates asynchronously to take all outputs to a logic LOW.

BLOCK DIAGRAM



PIN CONFIGURATION



PIN NAMES

Pin	Function
D_{0a}–D_{5a}	Input Data a
D_{0b}–D_{5b}	Input Data b
SEL	Data Select Input
LEN_1, LEN_2	Latch Enables
MR	Master Reset
Q_0–Q_5	Outputs
V_{CCO}	V_{CC} to Output

REV: D
Issue Date: September 2011

TRUTH TABLES

SEL	Data
H	a
L	b

LEN_1	LEN_2	Latch
L	L	Transparent
H	X	Latched
X	H	Latched

DC ELECTRICAL CHARACTERISTICS

V_{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	—	85	102	—	85	102	—	85	102		
	100E	—	85	102	—	85	102	—	98	117		

AC ELECTRICAL CHARACTERISTICS

V_{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_{PLH} t_{PHL}	Propagation Delay to Output										ps	—
	D	325	500	700	325	500	700	325	500	700		
	SEL	475	675	925	475	675	925	475	675	925		
	LEN	350	500	750	350	500	750	350	500	750		
	MR	450	600	850	450	600	850	450	600	850		
t_S	Set-up Time										ps	—
	D	300	100	—	300	100	—	300	100	—		
	SEL	500	250	—	500	250	—	500	250	—		
t_H	Hold Time										ps	—
	D	300	–100	—	300	–100	—	300	–100	—		
	SEL	0	–250	—	0	–250	—	0	–250	—		
t_{RR}	Reset Recovery Time	800	650	—	800	650	—	800	650	—	ps	—
t_{PW}	Minimum Pulse Width, MR	400	—	—	400	—	—	400	—	—	ps	—
t_{skew}	Within-Device Skew	—	75	—	—	75	—	—	75	—	ps	1
t_r t_f	Rise/Fall Time 20% to 80%	300	450	800	300	450	800	300	450	800	ps	—

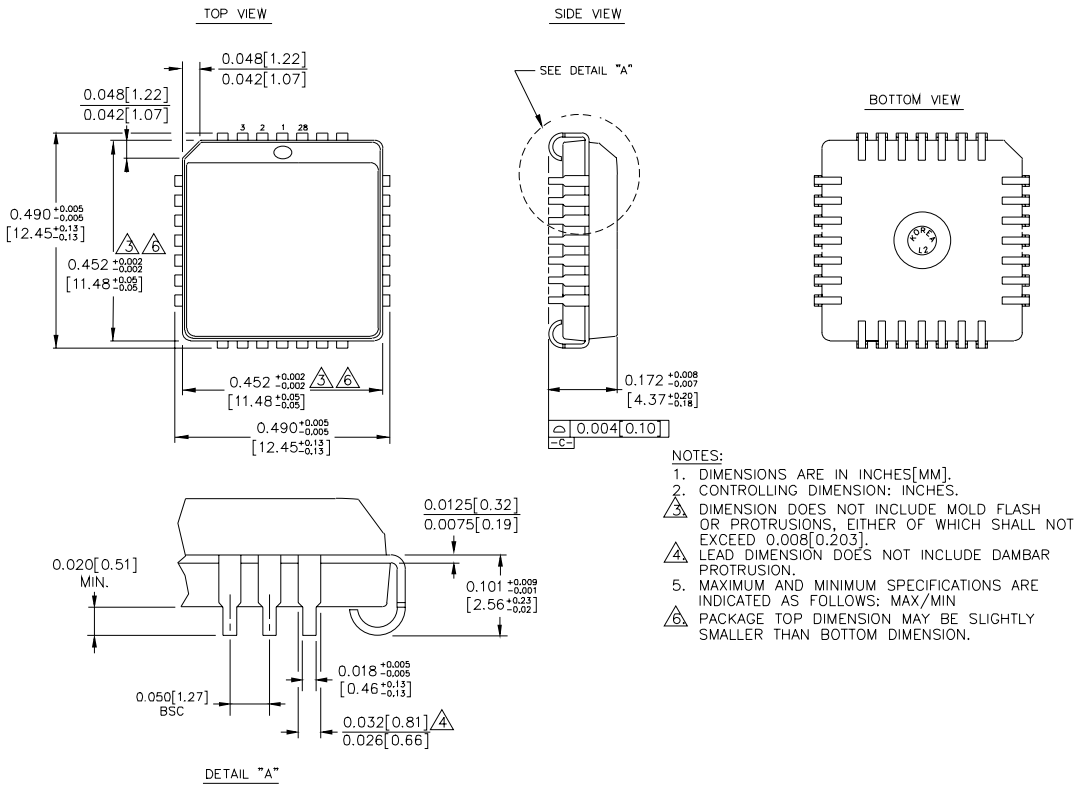
NOTE:

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

PRODUCT ORDERING CODE

Ordering Code	Package Type	Operating Range
SY10E155JZ	J28-1	Commercial
SY10E155JZTR	J28-1	Commercial
SY100E155JZ	J28-1	Commercial
SY100E155JZTR	J28-1	Commercial

28 LEAD 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.

Rev. 03

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