FEATURES

- **750ps max. LEN to output**
- **Extended 100E VEE range of –4.2V to –5.5V**
- **700ps max. D to output**
- **Differential 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/100E154**
- **Available in 28-pin PLCC package**

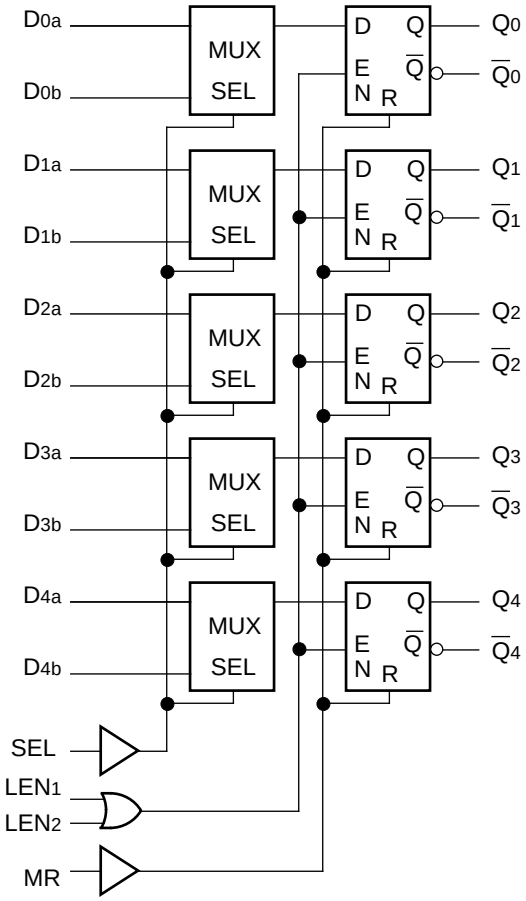
DESCRIPTION

The SY10/100E154 offer five 2:1 multiplexers followed by latches with differential outputs, designed for use in new, high-performance ECL systems. The two external Latch-Enable signals (LEN_1, LEN_2) are gated through a logical OR operation before use as control for the five 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 make all Q outputs go to a logic LOW.

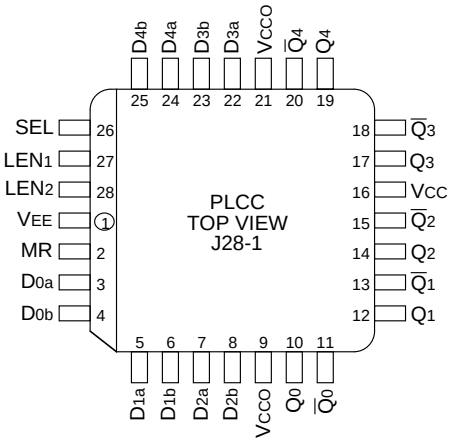
BLOCK DIAGRAM



PIN NAMES

Pin	Function
D_{0a}–D_{4a}	Input Data a
D_{0b}–D_{4b}	Input Data b
SEL	Data Select Input
LEN_1, LEN_2	Latch Enables
MR	Master Reset
Q_0–Q_4	True Outputs
$\overline{Q_0}$–$\overline{Q_4}$	Inverted Outputs
V_{CCO}	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
SY10E154JC	J28-1	Commercial	SY10E154JC	Sn-Pb
SY10E154JCTR[2]	J28-1	Commercial	SY10E154JC	Sn-Pb
SY100E154JC	J28-1	Commercial	SY100E154JC	Sn-Pb
SY100E154JCTR[2]	J28-1	Commercial	SY100E154JC	Sn-Pb
SY10E154JZ[3]	J28-1	Commercial	SY10E154JZ with Pb-Free bar-line indicator	Matte-Sn
SY10E154JZTR[2, 3]	J28-1	Commercial	SY10E154JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E154JZ[3]	J28-1	Commercial	SY100E154JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E154JZTR[2, 3]	J28-1	Commercial	SY100E154JZ 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 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	—	76	91	—	76	91	—	76	91		
	100E	—	76	91	—	76	91	—	87	105		

AC ELECTRICAL CHARACTERISTICS

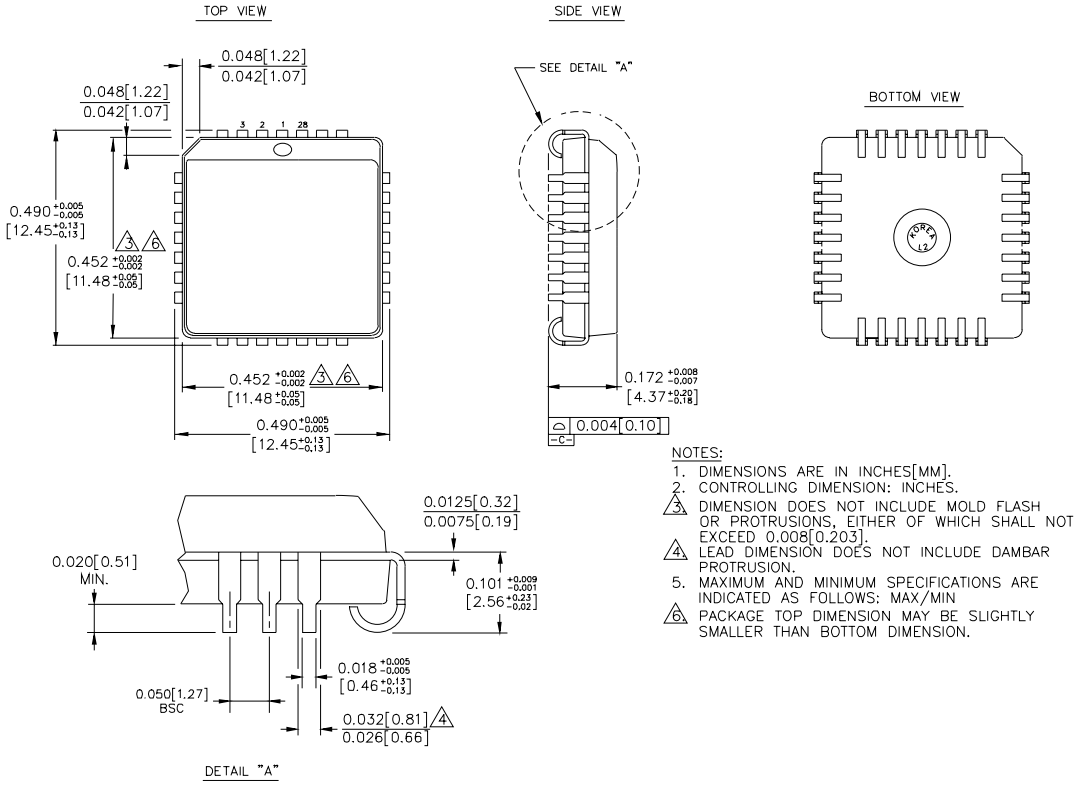
V_{EE} = V_{EE} (Min.) to V_{EE} (Max.); V_{CC} = V_{CCO} = GND

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_{PD}	Propagation Delay to Output										ps	—
	D	325	500	700	325	500	700	325	500	700		
	SEL	475	650	925	475	650	925	475	650	925		
	LEN	350	500	750	350	500	750	350	500	750		
	MR	450	600	800	450	600	800	450	600	800		
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	200	–250	—	200	–250	—	200	–250	—		
t_{RR}	Reset Recovery Time	800	600	—	800	600	—	800	600	—	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	475	800	300	475	800	300	475	800	ps	—

Note:

1. 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.

Rev. 03

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