

## FEATURES

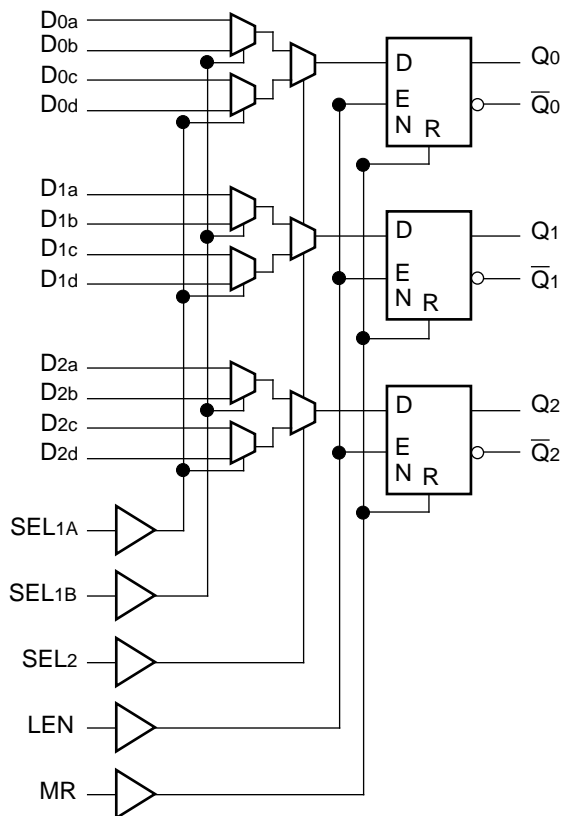
- 950ps max. data to output
- Extended 100E VEE range of -4.2V to -5.5V
- 850ps max. latch enable to output
- Separate select controls
- Differential outputs
- Fully compatible with industry standard 10KH, 100K ECL levels
- Internal 75KΩ input pulldown resistors
- Fully compatible with Motorola MC10E/100E256
- Available in 28-pin PLCC package

## DESCRIPTION

The SY10/100E256 offer three 4:1 multiplexers followed by latches with differential outputs designed for use in new, high-performance ECL systems. Separate Select controls are provided for the leading 2:1 mux pairs (see block diagram).

When the Latch Enable (LEN) is at a logic LOW, the latch is transparent and output data is controlled by the multiplexer select controls. A logic HIGH on LEN latches the outputs. The Master Reset (MR) overrides all other controls to set the Q outputs LOW.

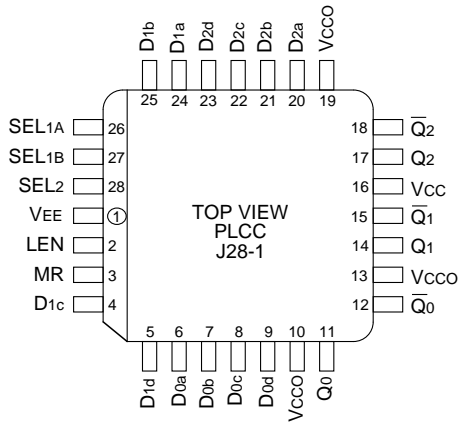
## BLOCK DIAGRAM



## PIN NAMES

Pin	Function
D0x-D2x	Parallel Data Inputs
SEL1A, SEL1B	First-stage Select Inputs
SEL2	Second-stage Select Input
LEN	Latch Enable
MR	Master Reset
Q0, $\bar{Q}_0$ -Q2, $\bar{Q}_2$	Data Outputs
Vcco	Vcc to Output

**PACKAGE/ORDERING INFORMATION**



**28-Pin PLCC (J28-1)**

**Ordering Information<sup>(1)</sup>**

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10E256JC	J28-1	Commercial	SY10E256JC	Sn-Pb
SY10E256JCTR <sup>(2)</sup>	J28-1	Commercial	SY10E256JC	Sn-Pb
SY100E256JC	J28-1	Commercial	SY100E256JC	Sn-Pb
SY100E256JCTR <sup>(2)</sup>	J28-1	Commercial	SY100E256JC	Sn-Pb
SY10E256JZ <sup>(3)</sup>	J28-1	Commercial	SY10E256JZ with Pb-Free bar-line indicator	Matte-Sn
SY10E256JZTR <sup>(2, 3)</sup>	J28-1	Commercial	SY10E256JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E256JZ <sup>(3)</sup>	J28-1	Commercial	SY100E256JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E256JZTR <sup>(2, 3)</sup>	J28-1	Commercial	SY100E256JZ with Pb-Free bar-line indicator	Matte-Sn

**Notes:**

1. Contact factory for die availability. Dice are guaranteed at T<sub>A</sub> = 25°C, DC Electricals only.
2. Tape and Reel.
3. Pb-Free package is recommended for new designs.

**TRUTH TABLE**

Pin	State	Operation
SEL2	H	Output c/d Data
SEL1A	H	Input d Data
SEL1B	H	Input b Data

**DC ELECTRICAL CHARACTERISTICS**V<sub>EE</sub> = V<sub>EE</sub> (Min.) to V<sub>EE</sub> (Max.); V<sub>CC</sub> = V<sub>CCO</sub> = GND

Symbol	Parameter	T <sub>A</sub> = 0°C			T <sub>A</sub> = +25°C			T <sub>A</sub> = +85°C			Unit	Condition	
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.			
I <sub>IH</sub>	Input HIGH Current	—	—	150	—	—	150	—	—	150	μA	—	
I <sub>EE</sub>	Power Supply Current	10E	—	69	83	—	69	83	—	69	83	mA	—
		100E	—	69	83	—	69	83	—	79	96		

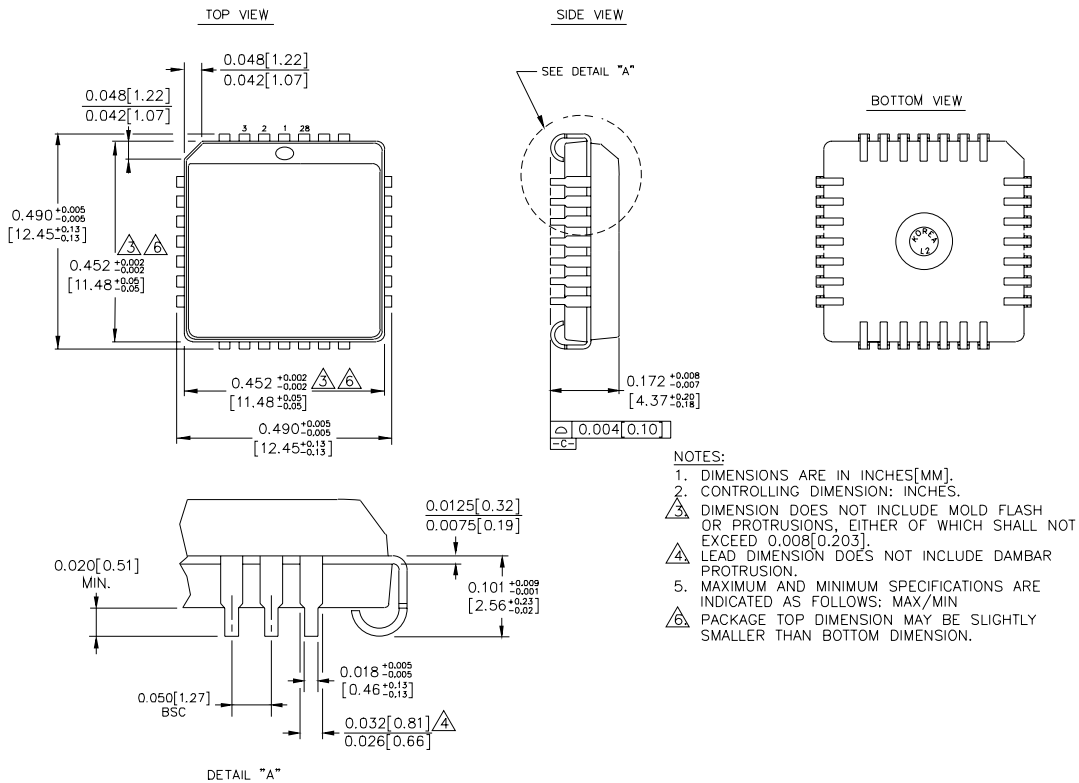
**AC ELECTRICAL CHARACTERISTICS**V<sub>EE</sub> = V<sub>EE</sub> (Min.) to V<sub>EE</sub> (Max.); V<sub>CC</sub> = V<sub>CCO</sub> = GND

Symbol	Parameter	T <sub>A</sub> = 0°C			T <sub>A</sub> = +25°C			T <sub>A</sub> = +85°C			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
t <sub>PD</sub>	Propagation Delay to Output D	400	600	900	400	600	900	400	600	900	ps	—
	SEL1	550	775	1050	550	775	1050	550	775	1050		
	SEL2	450	650	900	450	650	900	450	650	900		
	LEN	350	500	800	350	500	800	350	500	800		
	MR	350	600	825	350	600	825	350	600	825		
t <sub>S</sub>	Set-up Time D	400	275	—	400	275	—	400	275	—	ps	—
	SEL1	600	300	—	600	300	—	600	300	—		
	SEL2	500	250	—	500	250	—	500	250	—		
t <sub>H</sub>	Hold Time D	300	-275	—	300	-275	—	300	-275	—	ps	—
	SEL1	100	-300	—	100	-300	—	100	-300	—		
	SEL2	200	-250	—	200	-250	—	100	-250	—		
t <sub>RR</sub>	Reset Recovery Time	700	600	—	700	600	—	700	600	—	ps	—
t <sub>PW</sub>	Minimum Pulse Width, MR	400	—	—	400	—	—	400	—	—	ps	—
t <sub>skew</sub>	Within-Device Skew	—	50	—	—	50	—	—	50	—	ps	1
t <sub>r</sub> t <sub>f</sub>	Rise/Fall Time 20% to 80%	275	475	700	275	475	700	275	475	700	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.

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