



**QUAD 2:1  
MULTIPLEXER**

**SY10E157  
SY100E157**

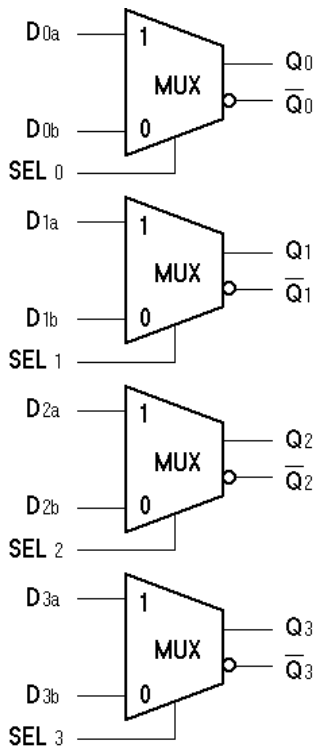
**FEATURES**

- Individual select controls
- Extended 100E VEE range of -4.2V to -5.5V
- 550ps max. D to Output
- 800ps max. SEL to Output
- Internal 75KΩ input pull-down resistors
- Fully compatible with industry standard 10KH, 100K ECL levels
- Available in 28-pin PLCC package

**DESCRIPTION**

The SY10/100E157 contain four 2:1 multiplexers with differential outputs. The output data are controlled by the individual Select (SEL) inputs. The individual select control makes the devices well suited for random logic designs.

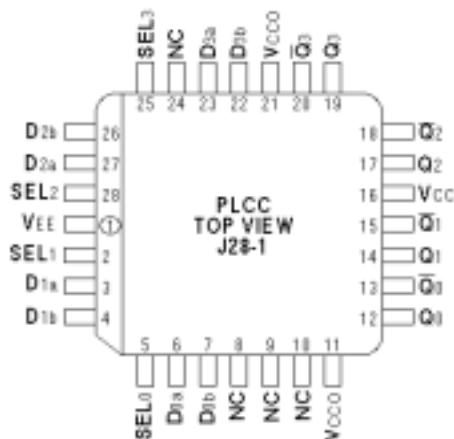
**BLOCK DIAGRAM**



**PIN NAMES**

Pin	Function
D0a – D3a	Input Data a
D0b – D3b	Input Data b
SEL0 – SEL3	Select Inputs
Q0 – Q3	True Outputs
Q0-bar – Q3-bar	Inverted Outputs
VCC0	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
SY10E157JI	J28-1	Industrial	SY10E157JI	Sn-Pb
SY10E157JITR <sup>(2)</sup>	J28-1	Industrial	SY10E157JI	Sn-Pb
SY100E157JI	J28-1	Industrial	SY100E157JI	Sn-Pb
SY100E157JITR <sup>(2)</sup>	J28-1	Industrial	SY100E157JI	Sn-Pb
SY10E157JC	J28-1	Commercial	SY10E157JC	Sn-Pb
SY10E157JCTR <sup>(2)</sup>	J28-1	Commercial	SY10E157JC	Sn-Pb
SY100E157JC	J28-1	Commercial	SY100E157JC	Sn-Pb
SY100E157JCTR <sup>(2)</sup>	J28-1	Commercial	SY100E157JC	Sn-Pb
SY10E157JY <sup>(3)</sup>	J28-1	Industrial	SY10E157JY with Pb-Free bar-line indicator	Matte-Sn
SY10E157JYTR <sup>(2, 3)</sup>	J28-1	Industrial	SY10E157JY with Pb-Free bar-line indicator	Matte-Sn
SY100E157JY <sup>(3)</sup>	J28-1	Industrial	SY100E157JY with Pb-Free bar-line indicator	Matte-Sn
SY100E157JYTR <sup>(2, 3)</sup>	J28-1	Industrial	SY100E157JY 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**

SEL	Data
H	a
L	b

**DC ELECTRICAL CHARACTERISTICS<sup>(1)</sup>**

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

Symbol	Parameter	$T_A = -40^\circ\text{C}$			$T_A = 0^\circ\text{C}$			$T_A = +25^\circ\text{C}$			$T_A = +85^\circ\text{C}$			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
I <sub>IH</sub>	Input HIGH Current	—	—	200	—	—	200	—	—	200	—	—	200	$\mu\text{A}$
	D SEL	—	—	150	—	—	150	—	—	150	—	—	150	
I <sub>EE</sub>	Power Supply Current	—	32	38	—	32	38	—	32	38	—	32	38	mA
	10E	—	32	38	—	32	38	—	32	38	—	32	38	
	100E	—	32	38	—	32	38	—	32	38	—	37	44	

**Note:**

1. Specification for packaged product only.

**AC ELECTRICAL CHARACTERISTICS<sup>(2)</sup>**

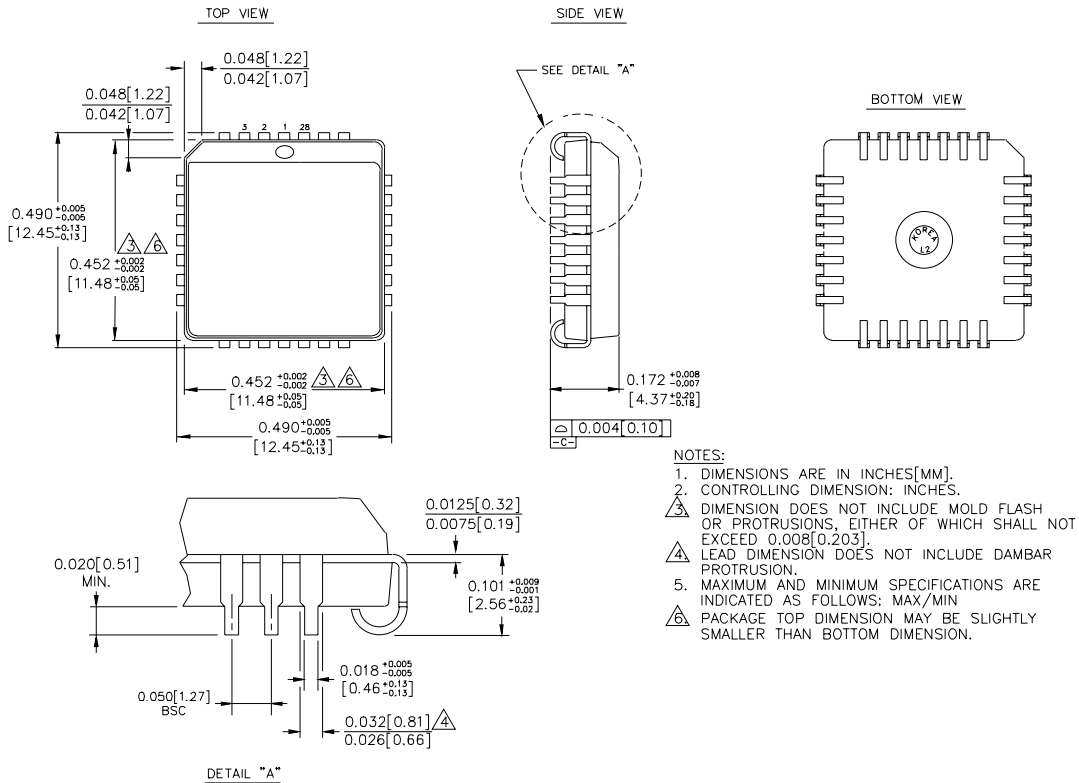
$V_{EE} = V_{EE} \text{ (Min.) to } V_{EE} \text{ (Max.)}; V_{CC} = V_{CCO} = \text{GND}$

Symbol	Parameter	$T_A = -40^\circ\text{C}$			$T_A = 0^\circ\text{C}$			$T_A = +25^\circ\text{C}$			$T_A = +85^\circ\text{C}$			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
t <sub>PD</sub>	Propagation Delay to	220	380	550	220	380	550	220	380	550	220	380	550	ps
	D SEL	425	600	800	425	600	800	425	600	800	425	600	800	
t <sub>skew</sub>	Within-Device Skew <sup>(1)</sup>	—	70	—	—	70	—	—	70	—	—	70	—	ps
t <sub>r</sub> t <sub>f</sub>	Rise/Fall Time 20% to 80%	275	400	650	275	400	650	275	400	650	275	400	650	ps

**Notes:**

1. Within-device skew is defined as identical transitions on similar paths through a device.
2. Specification for packaged product only.

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



Rev. 03

**MICREL, INC. 2180 FORTUNE DRIVE SAN JOSE, CA 95131 USA**

TEL + 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.