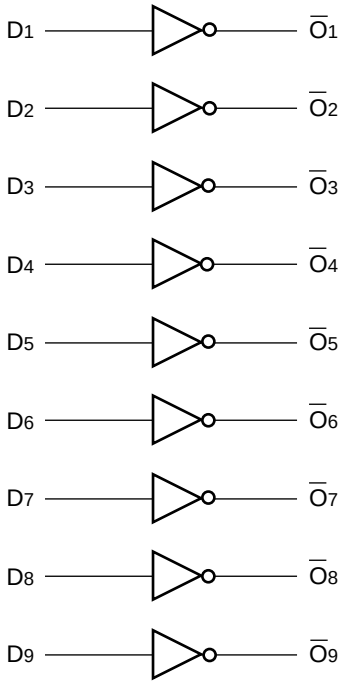
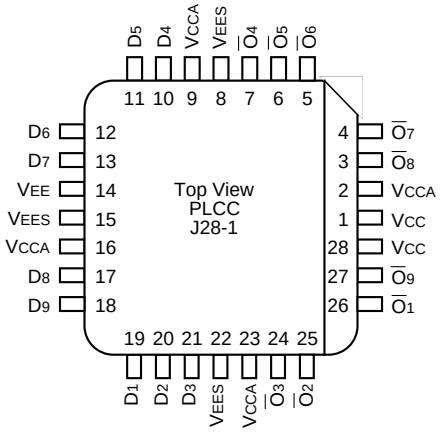
INVERTER

- **Max. propagation delay of 700ps**
- **I_{EE} min. of –55mA**
- **Extended supply voltage option: V_{EE} = –4.2V to –5.5V**
- **Voltage and temperature compensation for improved noise immunity**
- **70% faster than Fairchild 300K at lower power**
- **Internal 75kΩ input pull-down resistors**
- **Function and pinout compatible with Fairchild F100K**
- **Available in 28-pin PLCC package**

contains nine inverting buffer gates with single input and output.



Pin	Function
D_1 – D_9	Data Inputs
$\overline{Q}_1$ – $\overline{Q}_9$	Data Outputs
V_{EES}	V_{EE} Substrate
V_{CCA}	V_{CCO} for ECL Outputs



28-Pin PLCC (J28-1)

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY100S321JC	J28-1	Commercial	SY100S321JC	Sn-Pb
SY100S321JCTR(1)	J28-1	Commercial	SY100S321JC	Sn-Pb
SY100S321JZ(2)	J28-1	Commercial	SY100S321JZ with Pb-Free bar-line indicator	Matte-Sn
SY100S321JZTR(1, 2)	J28-1	Commercial	SY100S321JZ with Pb-Free bar-line indicator	Matte-Sn

Notes:

1. Tape and Reel.
2. Pb-Free package is recommended for new designs.

V_{EE} = –4.2V to –5.5V unless otherwise specified, V_{CC} = V_{CCA} = GND

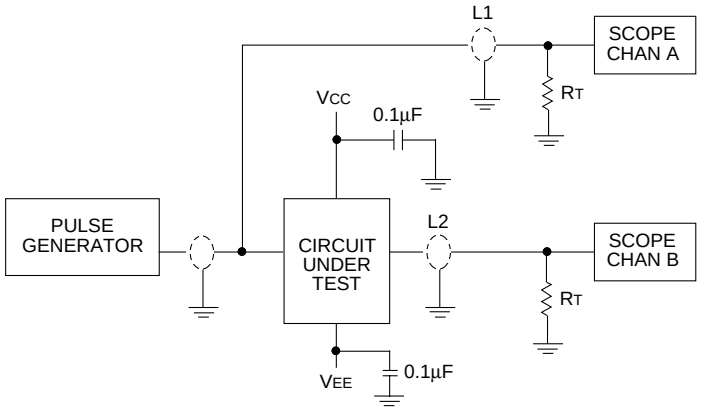
Symbol	Parameter	Min.	Typ.	Max.	Unit	Condition
I_{IH}	Input HIGH Current	—	—	200	µA	V_{IN} = V_{IH} (Max.)
I_{EE}	Power Supply Current	–55	–41	–25	mA	Inputs Open

V_{EE} = –4.2V to –5.5V unless otherwise specified, V_{CC} = V_{CCA} = GND

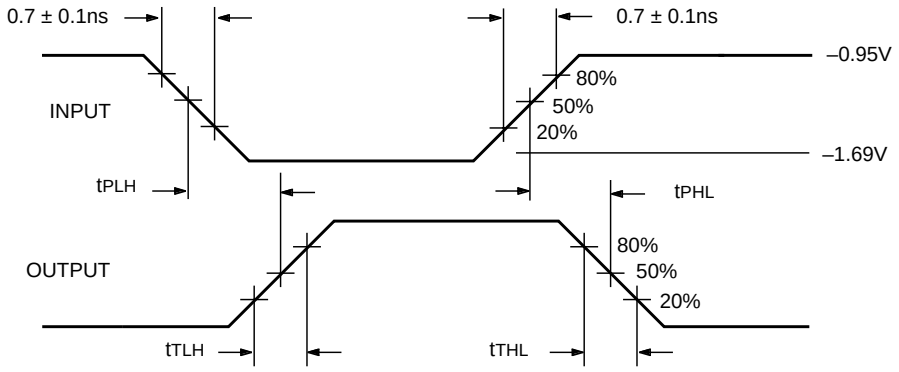
Symbol	Parameter	T_A = 0°C		T_A = +25°C		T_A = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
t_{PLH} t_{PHL}	Propagation Delay[1] Data to Output	300	700	300	700	300	700	ps	
t_{TLH} t_{THL}	Transition Time[1] 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps	
t_{S}, G–G	Skew, Gate-to-Gate	—	200	—	200	—	200	ps	

NOTE:

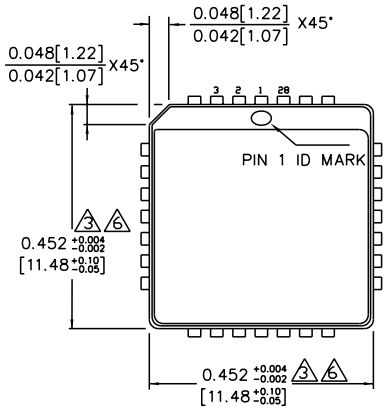
1. Reference Figures 1 and 2



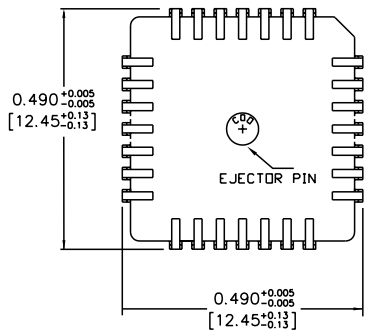
1. V_{CC}, V_{CCA} = +2V, V_{EE} = –2.5V.
   L1 and L2 = equal length 50Ω impedance lines.
   R_T = 50Ω terminator internal to scope.
   Decoupling 0.1µF from GND to V_{CC} and V_{EE}.
   All unused outputs are loaded with 50Ω to GND.
   C_L = Fixture and stray capacitance ≤ 3pF.



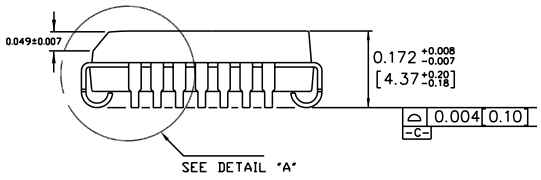
V_{EE} = –4.2V to –5.5V unless otherwise specified, V_{CC} = V_{CCA} = GND



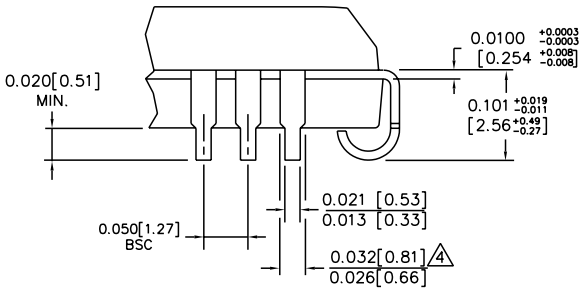
TOP VIEW



BOTTOM VIEW



SIDE VIEW



DETAIL "A"

Rev. A

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.

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.