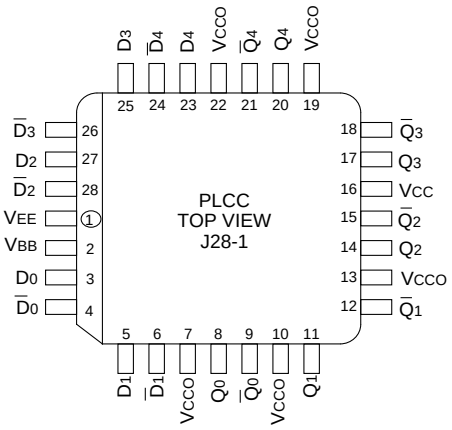
PACKAGE/ORDERING INFORMATION



28-Pin PLCC (J28-1)

Ordering Information[1]

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10E116JI	J28-1	Industrial	SY10E116JI	Sn-Pb
SY10E116JITR[2]	J28-1	Industrial	SY10E116JI	Sn-Pb
SY100E116JI	J28-1	Industrial	SY100E116JI	Sn-Pb
SY100E116JITR[2]	J28-1	Industrial	SY100E116JI	Sn-Pb
SY10E116JC	J28-1	Commercial	SY10E116JC	Sn-Pb
SY10E116JCTR[2]	J28-1	Commercial	SY10E116JC	Sn-Pb
SY100E116JC	J28-1	Commercial	SY100E116JC	Sn-Pb
SY100E116JCTR[2]	J28-1	Commercial	SY100E116JC	Sn-Pb
SY10E116JY[3]	J28-1	Industrial	SY10E116JY with Pb-Free bar-line indicator	Matte-Sn
SY10E116JYTR[2, 3]	J28-1	Industrial	SY10E116JY with Pb-Free bar-line indicator	Matte-Sn
SY100E116JY[3]	J28-1	Industrial	SY100E116JY with Pb-Free bar-line indicator	Matte-Sn
SY100E116JYTR[2, 3]	J28-1	Industrial	SY100E116JY 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.

LOGIC EQUATION

$Q_n = D_n$

DC ELECTRICAL CHARACTERISTICS

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

Symbol	Parameter	$T_A = -40°C$			$T_A = 0°C$			$T_A = +25°C$			$T_A = +85°C$			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
V_{BB}	Output Reference Voltage													V
	10E	–1.43	—	–1.30	–1.38	—	–1.27	–1.35	—	–1.25	–1.31	—	–1.19	
	100E	–1.43	—	–1.26	–1.38	—	–1.26	–1.38	—	–1.26	–1.38	—	–1.26	
I_{IH}	Input HIGH Current	—	—	200	—	—	200	—	—	200	—	—	200	µA
I_{EE}	Power Supply Current													mA
	10E	—	29	35	—	29	35	—	29	35	—	29	35	
	100E	—	29	35	—	29	35	—	29	35	—	33	40	
$V_{PP\ (DC)}$	Input Sensitivity[1]	150	—	—	150	—	—	150	—	—	150	—	—	mV
V_{CMR}	Common Mode Range[2]	–2.0	—	–0.6	–2.0	—	–0.6	–2.0	—	–0.6	–2.0	—	–0.6	V

Notes:

1. V_{PP} is the minimum differential input voltage required to assure full ECL levels are present at the outputs.
2. V_{CMR} is referenced to the most positive side of the differential input signal. Normal operation is obtained when the "HIGH" input is within the V_{CMR} range and the input swing is greater than V_{PP} (min.) and <1V.

AC ELECTRICAL CHARACTERISTICS

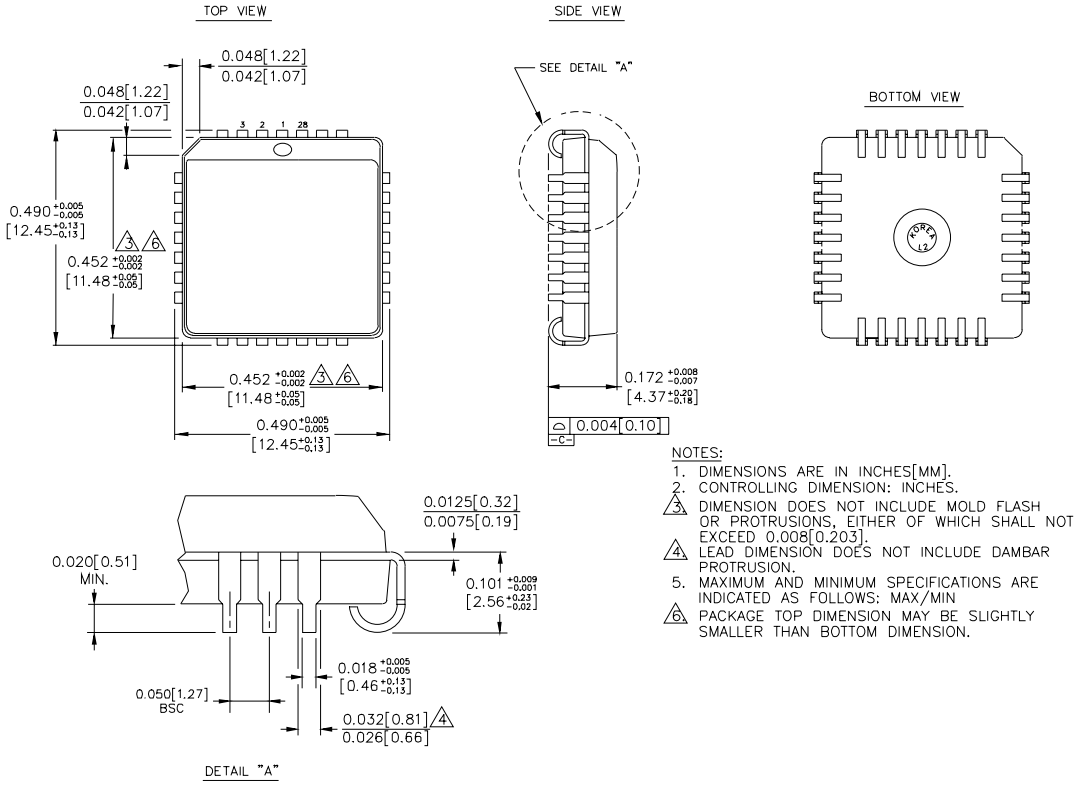
$V_{EE} = V_{EE}(Min.)$ to $V_{EE}(Max.)$; $V_{CC} = V_{CCO} = GND$

Symbol	Parameter	$T_A = -40°C$			$T_A = 0°C$			$T_A = +25°C$			$T_A = +85°C$			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
t_{PD}	Propagation Delay to Output													ps
	D	150	300	500	200	300	450	200	300	450	200	300	450	
	D (S.E.)	150	300	550	150	300	500	150	300	500	150	300	500	
$V_{PP\ (DC)}$	Input Sensitivity[1]	150	—	150	150	—	—	150	—	—	150	—	—	mV
t_{skew}	Within-Device Skew[2] Dn to Qn, $\overline{Q}$n	—	50	—	—	50	—	—	50	—	—	50	—	ps
t_{skew}	Duty Cycle Skew[3] $t_{PLH} - t_{PHL}$	—	±10	—	—	±10	—	—	±10	—	—	±10	—	ps
t_r t_f	Rise/Fall Time 20% to 80%	250	375	625	275	375	575	275	375	575	275	375	575	ps

Notes:

1. Minimum input swing for which AC parameters are guaranteed.
2. Within-device skew is defined as identical transitions on similar paths through a device.
3. Duty cycle skew is defined only for differential operation when the delays are measured from the cross point of the inputs to the cross point of the outputs.

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

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