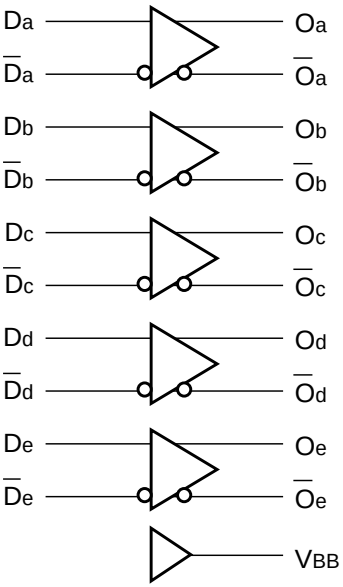
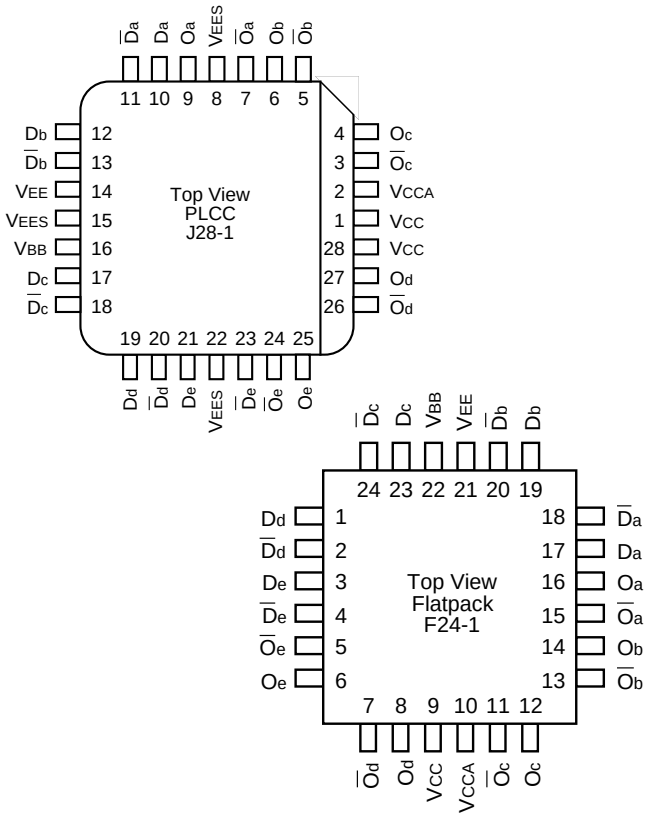
QUINT DIFFERENTIAL LINE RECEIVER

- **Max. propagation delay of 900ps**
- **Differential outputs**
- **I_{EE} min. of –60mA**
- **Extended supply voltage option: V_{EE} = –4.2V to –5.5V**
- **Voltage and temperature compensation for improved noise immunity**
- **V_{BB} output for single-ended use**
- **More than twice as fast as Fairchild**
- **Function and pinout compatible with Fairchild F100K**
- **Available in 24-pin CERPACK and 28-pin PLCC packages**

with emitter follower outputs, designed for use in high-performance ECL systems. For single-ended operation, the V_{BB} reference voltage is available. In the single-ended mode, the apparent input threshold of the true inputs is 30mV higher than the threshold of the complementary inputs.

Common mode rejection of +1.0V is achieved through the use of active current sources. If both the true and complement inputs are at the same potential between V_{EE} and V_{CC}, then the complementary outputs will take on a logic HIGH state. Unlike the other members of the Synergy 300K family, the inputs on this device do not have pull-down resistors.





Pin	Function
D_a – D_e	Data Inputs
$\overline{D}_a$ – $\overline{D}_e$	Inverting Data Inputs
O_a – O_e	Data Outputs
$\overline{O}_a$ – $\overline{O}_e$	Complementary Data Outputs
V_{EES}	V_{EE} Substrate
V_{CCA}	V_{CCO} for ECL Outputs

Rev.: G Amendment: /1
Issue Date: December 2001

EE = –4.2V to –5.5V unless otherwise specified, VCC = VCCA = GND

Symbol	Parameter	Min.	Typ.	Max.	Unit	Condition
VDIFF	Input Voltage Differential	150	—	—	mV	Required for Full Output Swing
VCM	Common Mode Voltage	—	—	1.0	V	Permissible ±VCM with Respect to VBB
IIH	Input HIGH Current	—	—	50	µA	VIN = VIH (Max.), Da - De = VBB, $\overline{Da}$ - $\overline{De}$ = VIL (Min.)
ICBO	Input Leakage Current	–10	—	—	µA	VIN = VEE, Da - De = VBB, $\overline{Da}$ - $\overline{De}$ = VIL (Min.)
IEE	Power Supply Current	–60	–45	–30	mA	Da - De = VBB, $\overline{Da}$ - $\overline{De}$ = VIL (Min.)

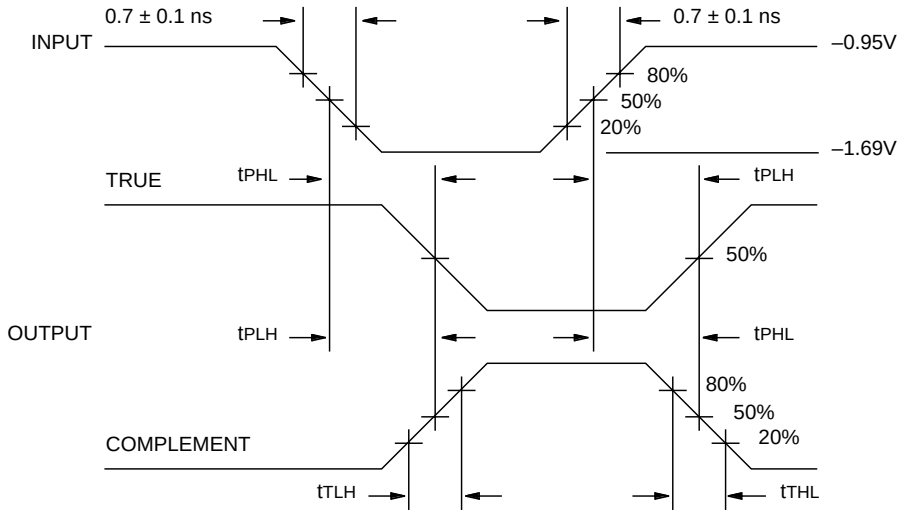
VEE = –4.2V to –5.5V unless otherwise specified, VCC = VCCA = GND

Symbol	Parameter	TA = 0°C		TA = +25°C		TA = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
tPLH tPHL	Propagation Delay Data to Output	300	1000	300	1000	300	1000	ps	
tTLH tTHL	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps	

PLCC

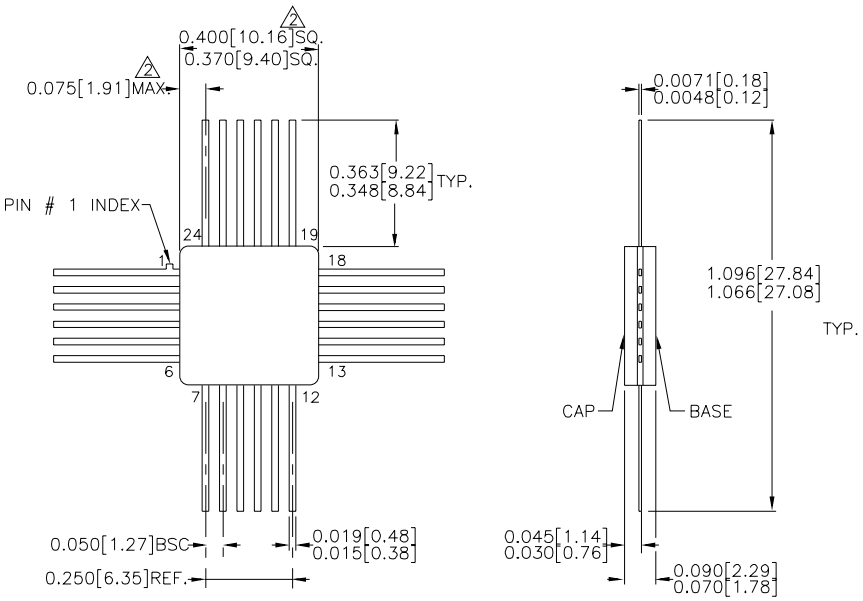
VEE = –4.2V to –5.5V unless otherwise specified, VCC = VCCA = GND

Symbol	Parameter	TA = 0°C		TA = +25°C		TA = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
tPLH tPHL	Propagation Delay Data to Output	300	900	300	900	300	900	ps	
tTLH tTHL	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps	



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

Code	Type	Range
SY100S314FC	F24-1	Commercial
SY100S314JC	J28-1	Commercial
SY100S314JCTR	J28-1	Commercial



NOTES:
1. DIMENSIONS ARE IN INCHES[MM].
2. THIS DIMENSION INCLUDES GLASS PROTRUSION AND CAP TO BASE ALIGNMENT TOLERANCES.
3. DIMENSIONS SHOWN ARE MAX/MIN, WHERE NOTED.

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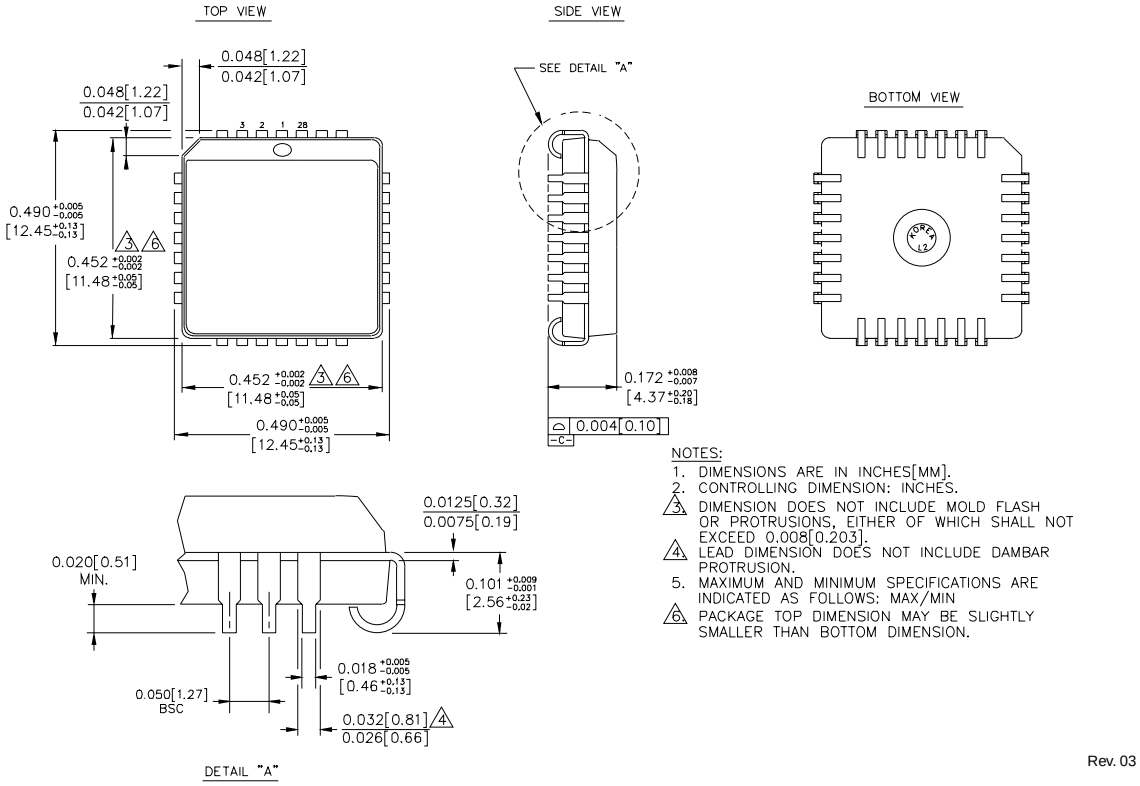

NOTES:
1. DIMENSIONS ARE IN INCHES[MM].
2. CONTROLLING DIMENSION: INCHES.
3. DIMENSION DOES NOT INCLUDE MOLD FLASH OR PROTRUSIONS, EITHER OF WHICH SHALL NOT EXCEED 0.008[0.203].
4. LEAD DIMENSION DOES NOT INCLUDE DAMBAR PROTRUSION.
5. MAXIMUM AND MINIMUM SPECIFICATIONS ARE INDICATED AS FOLLOWS: MAX/MIN
6. PACKAGE TOP DIMENSION MAY BE SLIGHTLY SMALLER THAN BOTTOM DIMENSION.

Rev. 03

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