



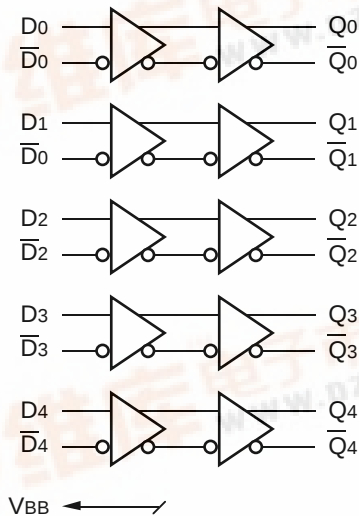
QUINT DIFFERENTIAL LINE RECEIVER

SY10E416
SY100E416

FEATURES

- Differential D and Q
- Extended 100E VEE range of -4.2V to -5.5V
- VBB output for single-ended use
- 600ps max. propagation delay
- High frequency outputs
- 2 stages of gain
- Internal 75KΩ input pull-down resistors
- Fully compatible with Motorola 10E/100E416
- Available in 28-pin PLCC package

BLOCK DIAGRAM



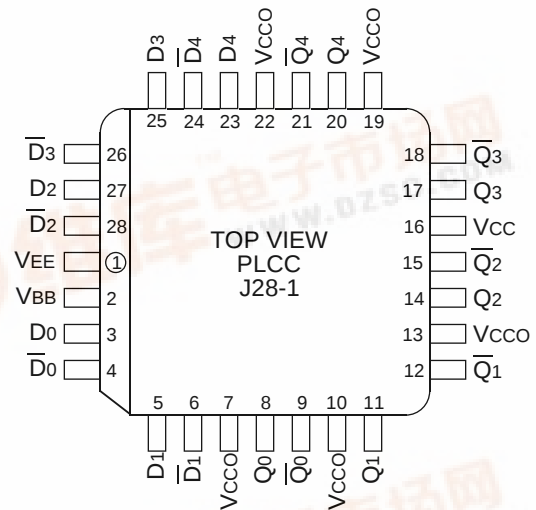
DESCRIPTION

The SY10/100E416 are 5-bit differential line receiving devices. The 2.0GHz of bandwidth provided by the high frequency outputs make the devices ideal for buffering of very high speed oscillators.

A VBB pin is available to AC couple an input signal to the devices.

The design incorporates two stages of gain internal to the devices, making them an excellent choice for use in high bandwidth amplifier applications.

PIN CONFIGURATION



PIN NAMES

Pin	Function
D[0:4], $\overline{D}$ [0:4]	Differential Data Inputs
Q[0:4], $\overline{Q}$ [0:4]	Differential Data Outputs
Vcc0	Vcc to Output

DC ELECTRICAL CHARACTERISTICS

VEE = VEE (Min.) to VEE (Max.); VCC = VCCO = GND

Symbol	Parameter	TA = 0°C			TA = +25°C			TA = +85°C			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
VBB	Output Reference Voltage										V	—
	10E	−1.38	—	−1.27	−1.35	—	−1.25	−1.31	—	−1.19		
	100E	−1.38	—	−1.26	−1.38	—	−1.26	−1.38	—	−1.26		
I _{IH}	Input HIGH Current	—	—	150	—	—	150	—	—	150	μA	—
I _{EE}	Power Supply Current										mA	—
	10E	—	135	162	—	135	162	—	135	162		
	100E	—	135	162	—	135	162	—	155	186		
V _{PP} (DC)	Input Sensitivity	50	—	—	50	—	—	50	—	—	mV	1
V _{CMR}	Common Mode Range	−1.5	—	0	−1.5	—	0	−1.5	—	0	V	2

NOTES:

- Differential input voltage required to obtain a full ECL swing on the outputs.
- V_{CMR} is referenced to the most positive side of the differential input signal. Normal operation is obtained when the input signals are within the V_{CMR} range and the input swing is greater than V_{PP} (min.) and <1V.

AC ELECTRICAL CHARACTERISTICS

VEE = VEE (Min.) to VEE (Max.); VCC = VCCO = GND

Symbol	Parameter	TA = 0°C			TA = +25°C			TA = +85°C			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
t _{PLH} t _{PHL}	Propagation Delay to Output										ps	—
	D (Diff) D (SE)	250 200	350 350	500 550	250 200	350 350	500 550	250 200	350 350	500 550		
t _{skew}	Within-Device Skew	—	50	—	—	50	—	—	50	—	ps	1
t _{skew}	Duty Cycle Skew, t _{PLH} –t _{PHL}	±10			±10			±10			ps	2
V _{PP} (AC)	Minimum Input Swing	150	—	—	150	—	—	150	—	—	mV	3
t _r t _f	Rise/Fall Time 20–80%	100	200	350	100	200	350	100	200	350	ps	—

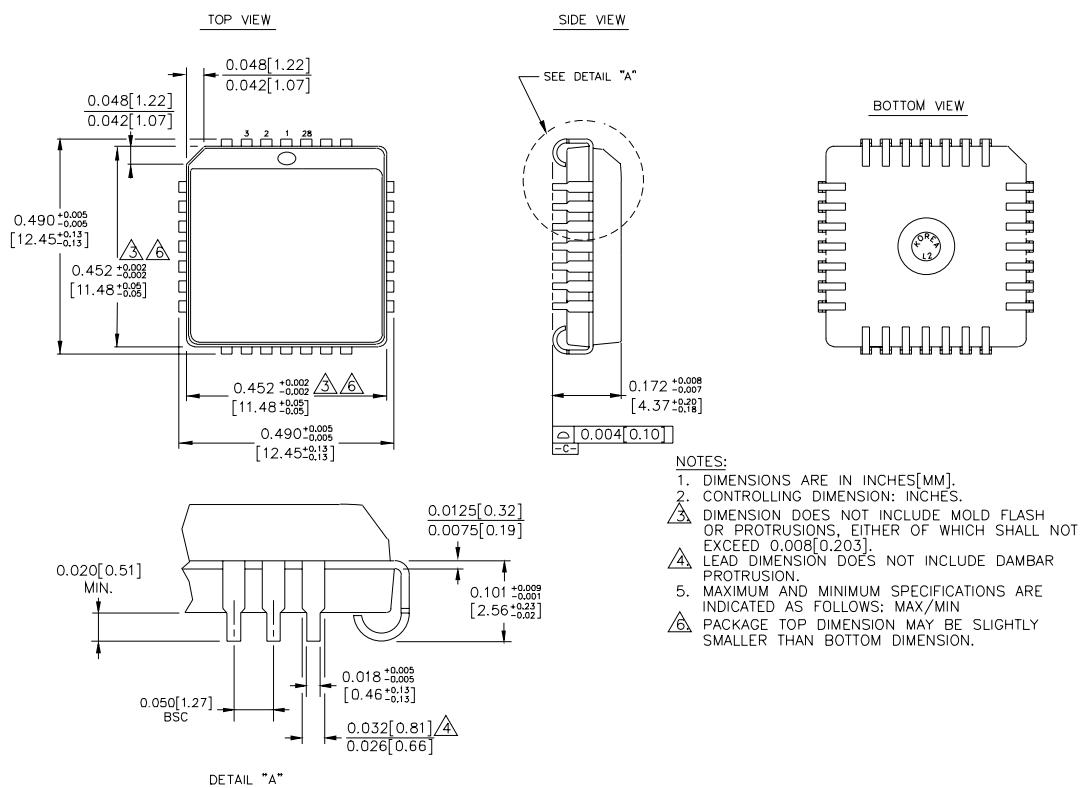
NOTES:

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

PRODUCT ORDERING CODE

Ordering Code	Package Type	Operating Range
SY10E416JC	J28-1	Commercial
SY10E416JCTR	J28-1	Commercial
SY100E416JC	J28-1	Commercial
SY100E416JCTR	J28-1	Commercial

28 LEAD PLCC (J28-1)



Rev. 03

