

FEATURES

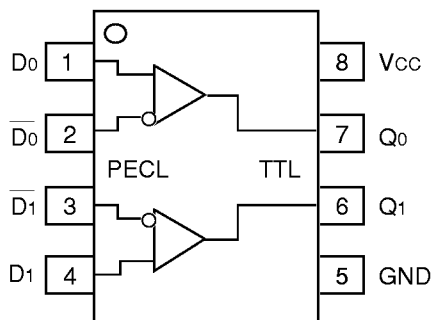
- 2.0ns typical propagation delay
- <500ps typical output-to-output skew
- Differential PECL inputs
- 24mA TTL outputs
- Flow-through pinouts
- ESD protection of 2000V
- Available in 8-pin SOIC package

DESCRIPTION

The SY10/100ELT23L are dual differential PECL-to-TTL translators with +3.3V power supply. Because PECL (Positive ECL) levels are used, only +3.3V and ground are required. The small outline 8-lead SOIC package and the low skew, dual gate design of the ELT23L makes it ideal for applications which require the translation of a clock and a data signal.

The ELT23L is available in both ECL standards: the 10ELT is compatible with positive ECL 10H logic levels, while the 100ELT is compatible with positive ECL 100K logic levels.

PIN CONFIGURATION/BLOCK DIAGRAM



SOIC
TOP VIEW

PIN NAMES

Pin	Function
Q _n	TTL Outputs
D _n	Differential PECL Inputs
V _{CC}	+3.3V Supply
GND	Ground

ABSOLUTE MAXIMUM RATINGS⁽¹⁾

Symbol	Parameter	Value	Unit
V _{CC}	Power Supply Voltage	-0.5 to +7.0	V
V _I	PECL Input Voltage	0V to V _{CC} +0.5	V
V _O	Voltage Applied to Output at HIGH State	-0.5 to +5.5	V
I _O	Current Applied to Output at LOW State	Twice the Rated I _{OL}	mA
T _{store}	Storage Temperature	-65 to +150	°C
T _{amb}	Operating Temperature	-40 to +85	°C

TRUTH TABLE

D	\bar{D}	Q
L	H	L
H	L	H
Open	Open	L

NOTES:

- Permanent device damage may occur if ABSOLUTE MAXIMUM RATINGS are exceeded. This is a stress rating only and functional operation is not implied at conditions other than those detailed in the operational sections of this data sheet. Exposure to ABSOLUTE MAXIMUM RATING conditions for extended periods may affect device reliability.

DC ELECTRICAL CHARACTERISTICS⁽¹⁾

V_{CC} = +3.3V ±5%

Symbol	Parameter	T _A = -40°C		T _A = 0°C		T _A = +25°C		T _A = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
I _{CC}	Power Supply Current	—	30	—	30	—	30	—	30	mA	—

NOTE:

- Parametric values specified at: 3 volt Power Supply Range 10/100ELT23L Series: +3.0V to +3.8V.

AC ELECTRICAL CHARACTERISTICS⁽¹⁾

V_{CC} = +3.3V ±5%

Symbol	Parameter	T _A = -40°C		T _A = 0°C		T _A = +25°C		T _A = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
t _{PLH} t _{PHL}	Propagation Delay	1.5	2.5	1.5	2.5	1.5	2.5	1.5	2.5	ns	C _L = 20pF
t _{skpp}	Part-to-Part Skew ^(1,4)	—	0.5	—	0.5	—	0.5	—	0.5	ns	C _L = 20pF
t _{skew++}	Within-Device Skew ^(2,4)	—	0.3	—	0.3	—	0.3	—	0.3	ns	C _L = 20pF
t _{skew--}	Within-Device Skew ^(3,4)	—	0.3	—	0.3	—	0.3	—	0.3	ns	C _L = 20pF
t _r t _f	Output Rise/Fall Time 1.0V to 2.0V	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	ns	C _L = 20pF
f _{MAX}	Maximum Input Frequency ^(5,6)	160	—	160	—	160	—	160	—	MHz	C _L = 20pF

NOTES:

- Device-to-Device Skew considering HIGH-to-HIGH transitions at common V_{CC} level.
- Within-Device Skew considering HIGH-to-HIGH transitions at common V_{CC} level.
- Within-Device Skew considering LOW-to-LOW transitions at common V_{CC} level.
- All skew parameters are guaranteed but not tested.
- Frequency at which output levels will meet a 0.8V to 2.0V minimum swing.
- The f_{MAX} value is specified as the minimum guaranteed maximum frequency. Actual operational maximum frequency may be greater.

TTL DC ELECTRICAL CHARACTERISTICS(1)

VCC = +3.3V ±5%

Symbol	Parameter	TA = -40°C		TA = 0°C		TA = +25°C		TA = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
VOH	Output HIGH Voltage	2.0	—	2.0	—	2.0	—	2.0	—	V	IOH = -3.0mA
VOL	Output LOW Voltage	—	0.5	—	0.5	—	0.5	—	0.5	V	IOL = 24mA
ICC	Power Supply Current	—	30	—	30	—	30	—	30	mA	
Ios	Output Short Circuit Current	-80	-240	-80	-240	-80	-240	-80	-240	mA	VOUT = 0V

NOTE:

1. Parametric values specified at: 3 volt Power Supply Range 10/100ELT23L Series: +3.0V to +3.8V.

PECL DC ELECTRICAL CHARACTERISTICS(1)

VCC = +3.3V ±5%

Symbol	Parameter	TA = -40°C			TA = 0°C			TA = +25°C			TA = +85°C			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
IiH	Input HIGH Current	—	—	150	—	—	150	—	—	150	—	—	150	μA
IiL	Input LOW Current	0.5	—	—	0.5	—	—	0.5	—	—	0.5	—	—	μA
VCMR	Common Mode Range	1.2	—	VCC	1.2	—	VCC	1.2	—	VCC	1.2	—	VCC	V
VPP	Minimum Peak-to-Peak Input(2)	200	—	—	200	—	—	200	—	—	200	—	—	mV
VIH	Input HIGH Voltage(3)													V
	10ELT	2070	—	2410	2130	—	2460	2170	—	2490	2130	—	2565	
	100ELT	2135	—	2420	2135	—	2420	2135	—	2420	2135	—	2420	
VIL	Input LOW Voltage(3)													V
	10ELT	1350	—	1800	1350	—	1820	1350	—	1820	1350	—	1820	
	100ELT	1490	—	1825	1490	—	1825	1490	—	1825	1490	—	1825	

NOTES:

1. Parametric values specified at: 3 volt Power Supply Range 10/100ELT23L Series: +3.0V to +3.8V.
2. 200mV input guarantees full logic at output.
3. These values are for VCC = 3.3V. Level Specifications will vary 1:1 with VCC.

PRODUCT ORDERING CODE

Ordering Code	Package Type	Operating Range	VCC Range (V)
SY10ELT23LZC	Z8-1	Commercial	+3.0 to +3.8
SY10ELT23LZCTR	Z8-1	Commercial	+3.0 to +3.8
SY100ELT23LZC	Z8-1	Commercial	+3.0 to +3.8
SY100ELT23LZCTR	Z8-1	Commercial	+3.0 to +3.8

8 LEAD PLASTIC SOIC (Z8-1)

FILE/REV #: PD0032A03

PD/0032/ASCORP

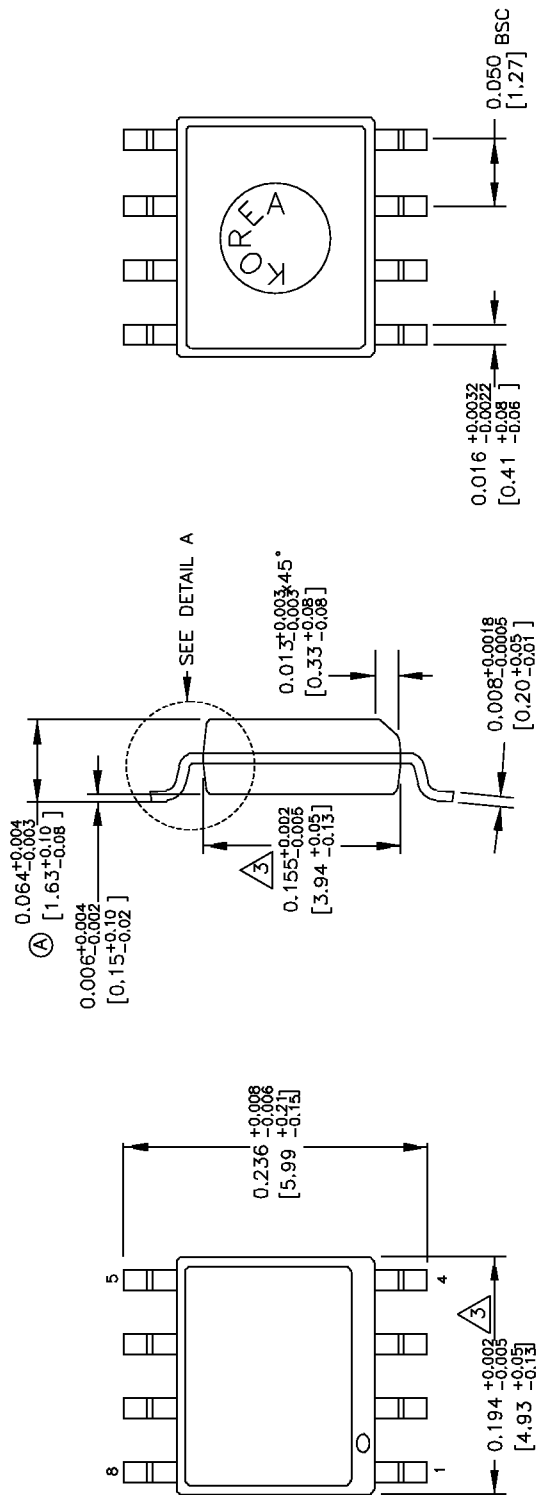
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REV.	REVISION DESCRIPTION	DATE
00	NEW OUTLINE DRAWING.	01/20/94
01	CONVERT TO AUTOCAD. REFERENCE AMKOR DWG. NO. 00019 REV.05. MAKE (A) SAME AS JEDEC.	12/14/95
02	ADDED LEAD WIDTH AND PITCH DIMENSIONS. CORRECTED TYPOS.	03/12/97
03	CONVERT DWG TO REL.13 AND ONE PAGE DOCUMENT.	02/20/98

TOP VIEW

END VIEW

BOTTOM VIEW



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 0.006[0.152] PER SIDE.



3250 SCOTT BOULEVARD
SMITH CLARK, CA 95064
TEL: 408-567-5199
FAX: 408-567-7878

APPROVALS	DATE	APPROVALS	DATE	SIZE	SCALE
ORIGINATOR: ERMIN G. URRUTIA	02/23/98	QUALITY: MARSHALL WILDER		A	N/A
CHK'D: WON CHANG		DOCUMENT CONTROL: BRIAN SANFILIPPO			
RELEASE DATE:					

8 LEAD PLASTIC SOIC (.150" WIDE)
PACKAGE OUTLINE

THESE SPECIFICATIONS ARE THE PROPERTY OF SYNERGY SEMICONDUCTOR. ARE ISSUED IN STRICT CONFIDENCE AND SHALL NOT BE REPRODUCED OR TRANSMITTED IN ANY MANNER FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT WRITTEN PERMISSION.

SCALE: N/A
REVISION: 03

