

FEATURES

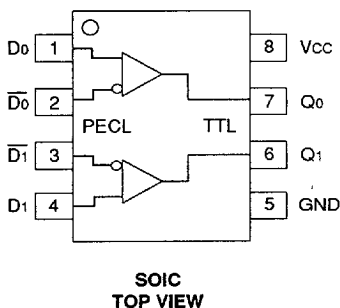
- 2.5ns typical propagation delay
- <300ps typical output-to-output skew
- ESD protection of 2000V
- Differential PECL inputs
- 24mA TTL outputs
- Flow-through pinouts
- Small outline SOIC package

DESCRIPTION

The SY10ELT/100ELT23 are dual differential PECL-to-TTL translators. Because PECL (Positive ECL) levels are used, only +5V and ground are required. The small outline 8-lead SOIC package and the low skew, dual gate design of the ELT23 makes it ideal for applications which require the translation of a clock and a data signal.

The ELT23 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



PIN NAMES

Pin	Function
Q _n	TTL Outputs
D _n	Differential PECL Inputs
VCC	+5.0V Supply
GND	Ground

ABSOLUTE MAXIMUM RATINGS⁽¹⁾

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

TRUTH TABLE

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

NOTE:

1. 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

V_{CC} = 5.0V ± 5%

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

AC ELECTRICAL CHARACTERISTICS

V_{CC} = 5.0V ± 5%

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 D to Output Q	2.0	3.0	2.0	3.0	2.0	3.0	ns	C _L = 50pF
t _{skpp}	Part-to-Part Skew ⁽¹⁾	—	1.0	—	1.0	—	1.0	ns	C _L = 50pF
t _{skwd}	Within-Device Skew ^{(1),(2)}	—	0.5	—	0.5	—	0.5	ns	C _L = 50pF
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	ns	C _L = 50pF

NOTE:

1. Guaranteed, but not tested
2. Same transition @ common V_{CC} Level

TTL DC ELECTRICAL CHARACTERISTICS

VCC = 5.0V ± 5%

Symbol	Parameter	TA = 0°C		TA = +25°C		TA = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
VOH	Output HIGH Voltage	2.5 2.0	— —	2.5 2.0	— —	2.5 2.0	— —	V	IOH = -3.0mA IOH = -15mA
VOL	Output LOW Voltage	—	0.5	—	0.5	—	0.5	V	IOL = 24mA
Ios	Output Short Circuit Current	-60	-150	-60	-150	-60	-150	mA	VOUT = 0V

10EL PECL DC ELECTRICAL CHARACTERISTICS

VCC = 5.0V

Symbol	Parameter	TA = 0°C		TA = +25°C		TA = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
IiH	Input HIGH Current	—	225	—	175	—	175	μA	—
IiL	Input LOW Current	0.5	—	0.5	—	0.5	—		
ViH	Input HIGH Voltage	3.83	4.16	3.87	4.19	3.94	4.28	V	—
ViL	Input LOW Voltage	3.05	3.52	3.05	3.52	3.05	3.555		

100EL PECL DC ELECTRICAL CHARACTERISTICS

VCC = 5.0V

Symbol	Parameter	TA = 0°C		TA = +25°C		TA = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
IiH	Input HIGH Current	—	225	—	175	—	175	μA	—
IiL	Input LOW Current	0.5	—	0.5	—	0.5	—		
ViH	Input HIGH Voltage	3.835	4.12	3.835	4.12	3.835	4.12	V	—
ViL	Input LOW Voltage	3.19	3.525	3.19	3.525	3.19	3.525		

PRODUCT ORDERING CODE

Ordering Code	Package Type	Operating Range
SY10ELT23ZC	Z8-1	Commercial
SY100ELT23ZC	Z8-1	Commercial