

**FEATURES**

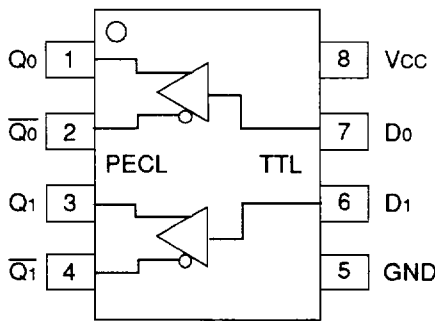
- 200ps typical propagation delay
- <100ps typical output-to-output skew
- ESD protection of 2000V
- Differential PECL outputs
- PNP TTL inputs for minimal loading
- Flow-through pinouts
- Small outline SOIC package

**DESCRIPTION**

The SY10ELT/100ELT22L are dual TTL-to-differential PECL translators. 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 ELT22L makes it ideal for applications which require the translation of a clock and a data signal.

The ELT22L 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 <sub>n</sub>	Differential PECL Outputs
D <sub>n</sub>	TTL Inputs
V <sub>cc</sub>	+3.3V Supply
GND	Ground

\*SYNGS009\*

### ABSOLUTE MAXIMUM RATINGS<sup>1</sup>

Symbol	Parameter	Value	Unit
V <sub>CC</sub>	Power Supply Voltage	-0.5 to +7.0	V
V <sub>I</sub>	TTL Input Voltage <sup>2</sup>	-0.5 to 6.0	V
I <sub>I</sub>	TTL Input Current <sup>2</sup>	-30 to +5.0	mA
I <sub>OUT</sub>	ECL Output Current - Continuous - Surge	50 100	mA
T <sub>store</sub>	Storage Temperature	-65 to +150	°C
T <sub>amb</sub>	Operating Temperature	0 to +85	°C

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.
2. Either voltage limit or current limit is sufficient to protect input.

### TRUTH TABLE

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

### DC ELECTRICAL CHARACTERISTICS

V<sub>CC</sub> = 3.3V ± 0.3V

Symbol	Parameter	T <sub>A</sub> = 0°C		T <sub>A</sub> = +25°C		T <sub>A</sub> = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
I <sub>CC</sub>	Power Supply Current	—	25	—	25	—	25	mA	—

### AC ELECTRICAL CHARACTERISTICS

V<sub>CC</sub> = 3.3V ± 0.3V

Symbol	Parameter	T <sub>A</sub> = 0°C		T <sub>A</sub> = +25°C		T <sub>A</sub> = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
T <sub>PLH</sub> T <sub>PHL</sub>	Propagation Delay to Output D	100	400	100	400	100	400	ps	50Ω to (V <sub>CC</sub> - 2.0V)
T <sub>R</sub> T <sub>F</sub>	Output Rise/Fall Time 20% to 80%	200	400	200	400	200	400	ps	50Ω to (V <sub>CC</sub> - 2.0V)
T <sub>SKPP</sub>	Part-toPart Skew <sup>1</sup>	—	300	—	300	—	300	ps	50Ω to (V <sub>CC</sub> - 2.0V)
T <sub>SKWD</sub>	Within-Device Skew <sup>1, 2</sup>	—	100	—	100	—	100	ps	50Ω to (V <sub>CC</sub> - 2.0V)

NOTE:

1. Guaranteed, but not tested.
2. Same transition @ common V<sub>CC</sub> Level.

### TTL DC ELECTRICAL CHARACTERISTICS

VCC = 3.3V ± 0.3V

Symbol	Parameter	TA = 0°C		TA = +25°C		TA = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
V <sub>IH</sub>	Input HIGH Voltage	2.0	—	2.0	—	2.0	—	V	—
V <sub>IL</sub>	Input LOW Voltage	—	0.8	—	0.8	—	0.8	V	—
I <sub>IH</sub>	Input HIGH Current	—	20 100	—	20 100	—	20 100	μA	V <sub>IN</sub> = 2.7V V <sub>IN</sub> = V <sub>CC</sub>
I <sub>IL</sub>	Input LOW Current	—	-0.2	—	-0.2	—	-0.2	mA	V <sub>IN</sub> = 0.5V
V <sub>IK</sub>	Input Clamp Voltage	—	-1.2	—	-1.2	—	-1.2	V	I <sub>IN</sub> = -18mA

### 10EL PECL DC ELECTRICAL CHARACTERISTICS

VCC = 3.3V

Symbol	Parameter	TA = 0°C		TA = +25°C		TA = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
V <sub>OH</sub>	Output HIGH Voltage	2280	2460	2320	2490	2390	2580	mV	—
V <sub>OL</sub>	Output LOW Voltage	1350	1670	1350	1670	1350	1705	mV	—

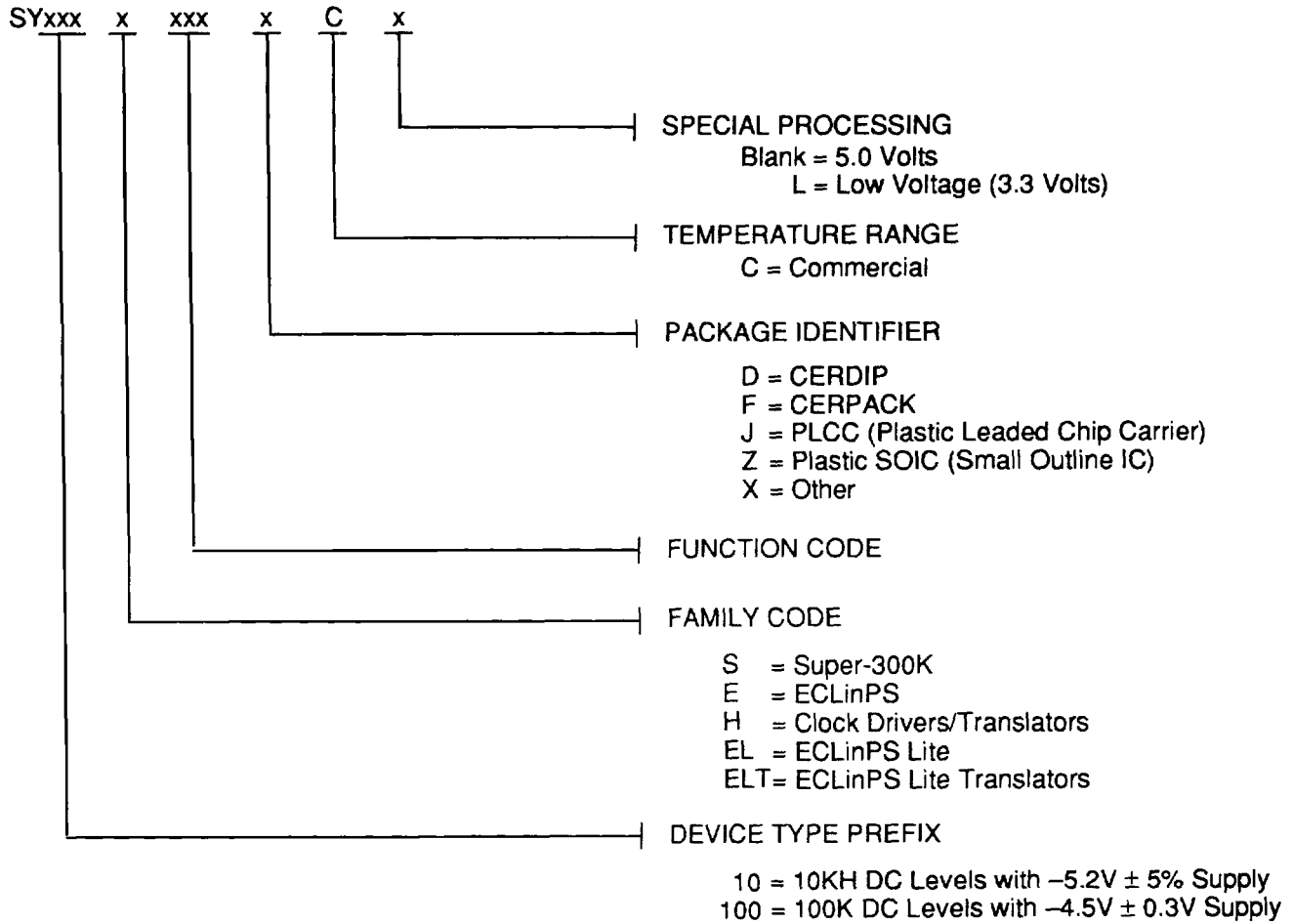
### 100EL PECL DC ELECTRICAL CHARACTERISTICS

VCC = 3.3V

Symbol	Parameter	TA = 0°C		TA = +25°C		TA = +85°C		Unit	Condition
		Min.	Max.	Min.	Max.	Min.	Max.		
V <sub>OH</sub>	Output HIGH Voltage	2275	2420	2275	2420	2275	2420	mV	—
V <sub>OL</sub>	Output LOW Voltage	1490	1680	1490	1680	1490	1680	mV	—

### PRODUCT ORDERING CODE

Ordering Code	Package Type	Operating Range
SY10ELT22ZC	Z8-1	Commercial
SY100ELT22ZC	Z8-1	Commercial



## ECLinPS LITE MARKING INFORMATION

