



DIFFERENTIAL ECL-to-TTL TRANSLATOR

SY100ELT25

FEATURES

- 2.6ns typical propagation delay
- Differential ECL inputs
- 24mA TTL outputs
- Flow-through pinouts
- Available in 8-pin SOIC package

DESCRIPTION

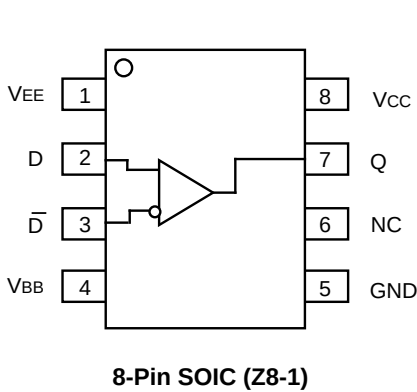
The SY100ELT25 is a differential ECL-to-TTL translator. Because ECL levels are used, a +5V, -5.2V (or -4.5V) and ground are required. The small outline 8-lead SOIC package and the single gate of the ELT25 makes it ideal for those applications where performance, space and low power are at a premium.

The V_{BB} output allows the ELT25 to also be used in a single-ended input mode. In this mode the V_{BB} output is tied to the $\bar{D}$ input for a non-inverting buffer or the D input for an inverting buffer. If used the V_{BB} pin should be bypassed to ground via a 0.01 μ F capacitor.

PIN NAMES

Pin	Function
Q	TTL Output
D	Differential ECL Inputs
V _{CC}	Positive Supply
V _{EE}	Negative Supply
V _{BB}	Reference Output
GND	Ground

PACKAGE/ORDERING INFORMATION



Ordering Information⁽¹⁾

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY100ELT25ZC	Z8-1	Commercial	XEL25	Sn-Pb
SY100ELT25ZCTR ⁽²⁾	Z8-1	Commercial	XEL25	Sn-Pb
SY100ELT25ZI	Z8-1	Industrial	XEL25	Sn-Pb
SY100ELT25ZITR ⁽²⁾	Z8-1	Industrial	XEL25	Sn-Pb
SY100ELT25ZG ⁽³⁾	Z8-1	Industrial	XEL25 with Pb-Free bar-line indicator	Pb-Free NiPdAu
SY100ELT25ZGTR ^(2, 3)	Z8-1	Industrial	XEL25 with with Pb-Free bar-line indicator	Pb-Free NiPdAu

- Notes:
1. Contact factory for die availability. Dice are guaranteed at T_A = 25°C, DC Electricals only.
 2. Tape and Reel.
 3. Pb-Free package is recommended for new designs.

ABSOLUTE MAXIMUM RATINGS⁽¹⁾

Symbol	Parameter	Value	Unit
V _{CC}	Power Supply Voltage	−0.5 to +7.0	V
V _{IN}	ECL Input Voltage	V _{EE} to GND+0.5	V
V _{OUT}	Voltage Applied to Output at HIGH State	−0.5 to +5.5	V
I _{OUT}	Current Applied to Output at LOW State	Twice the Rated I _{OL}	mA
T _{LEAD}	Lead Temperature (soldering, 20sec.)	+260	°C
T _{store}	Storage Temperature	−65 to +150	°C
T _A	Operating Temperature	−40 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 CHARACTERISTICSV_{CC} = 4.5V to 5.5V; V_{EE} = −4.2V to −5.5V

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	—	14	—	14	9	14	—	14	mA	—
I _{EE}	Power Supply Current	—	14	—	14	5.5	14	—	14	mA	—

AC ELECTRICAL CHARACTERISTICSV_{CC} = 4.5V to 5.5V; V_{EE} = −4.2V to −5.5V

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 D to Output Q	1.7	3.6	1.7	3.6	1.7	3.6	1.7	3.6	ns	C _L = 20pF
f _{MAX}	Maximum Frequency	150	—	150	—	150	—	150	—	MHz	C _L = 20pF
t _r t _f	Output Rise/Fall Time (1.0V to 2.0V)	—	1.5	—	1.5	—	1.5	—	1.5	ns	C _L = 20pF

TTL DC ELECTRICAL CHARACTERISTICSV_{CC} = 4.5V to 5.5V; V_{EE} = −4.2V to −5.5V

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.		
V _{OH}	Output HIGH Voltage	2.4	—	2.4	—	2.4	—	2.4	—	V	I _{OH} = −3.0mA
V _{OL}	Output LOW Voltage	—	0.5	—	0.5	—	0.5	—	0.5	V	I _{OL} = 24mA
I _{OS}	Output Short Circuit Current	−60	−200	−60	−200	−60	−200	−60	−200	mA	V _{OUT} = 0V

ECL DC ELECTRICAL CHARACTERISTICS

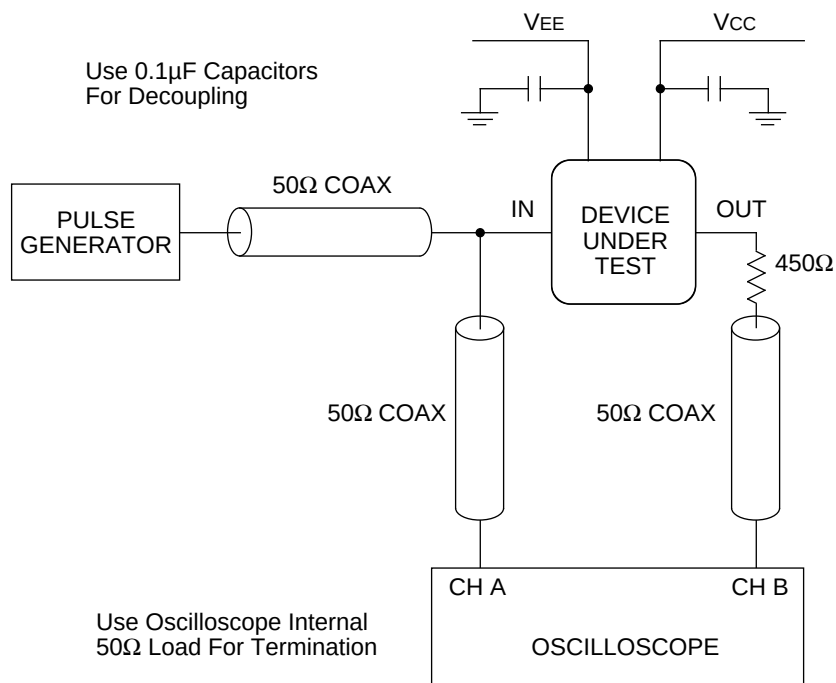
$V_{CC} = 4.5V$ to $5.5V$; $V_{EE} = -4.2V$ to $-5.5V$

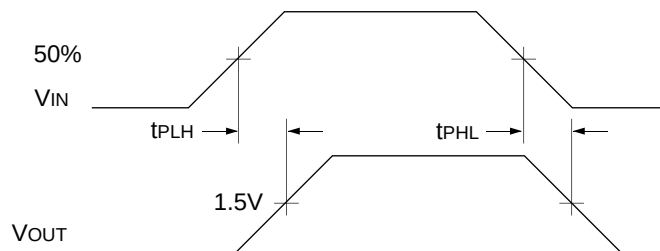
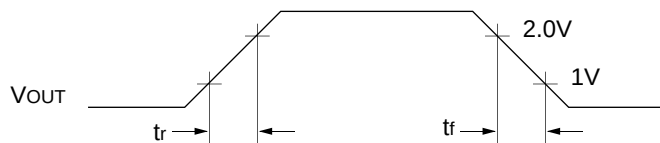
Symbol	Parameter	$T_A = -40^{\circ}C$			$T_A = 0^{\circ}C$			$T_A = +25^{\circ}C$			$T_A = +85^{\circ}C$			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
I_{IH}	Input HIGH Current	—	—	150	—	—	150	—	—	150	—	—	150	μA
I_{IL}	Input HIGH Current	0.5	—	—	0.5	—	—	0.5	—	—	0.5	—	—	μA
V_{CMR}	Common Mode Range	$V_{EE}+2.2$	—	GND	$V_{EE}+2.2$	—	GND	$V_{EE}+2.2$	—	GND	$V_{EE}+2.2$	—	GND	V
V_{PP}	Minimum Peak-to-Peak Input ⁽¹⁾	200	—	—	200	—	—	200	—	—	200	—	—	mV
V_{IH}	Input HIGH Voltage	-1165	—	-880	-1165	—	-880	-1165	—	-880	-1165	—	-880	mV
V_{IL}	Input LOW Voltage	-1810	—	-1475	-1810	—	-1475	-1810	—	-1475	-1810	—	-1475	mV
V_{BB}	Reference Output	-1.38	—	-1.26	-1.38	—	-1.26	-1.38	—	-1.26	-1.38	—	-1.26	mV

NOTE:

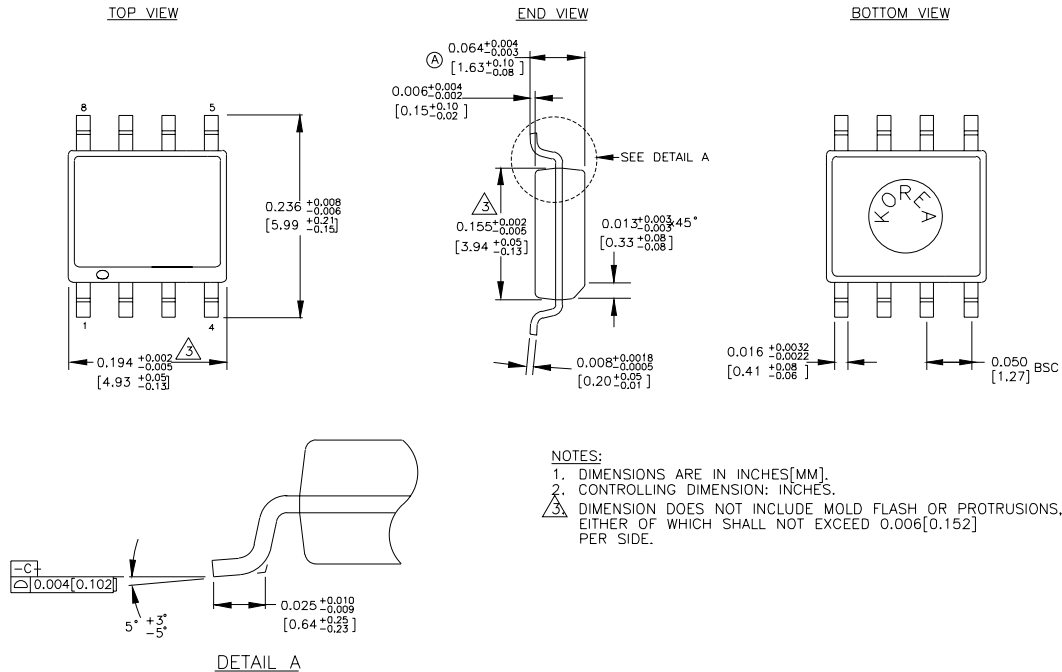
1. 200mV input guarantees full logic at output.

TTL SWITCHING CIRCUIT



ECL/TTL PROPAGATION DELAY — SINGLE ENDED**ECL/TTL WAVEFORMS: RISE AND FALL TIMES**

8-PIN SOIC .150" WIDE (Z8-1)



Rev. 03

MICREL, INC. 2180 FORTUNE DRIVE SAN JOSE, CA 95131 USA

TEL + 1 (408) 944-0800 FAX + 1 (408) 474-1000 WEB <http://www.micrel.com>

The information furnished by Micrel in this datasheet is believed to be accurate and reliable. However, no responsibility is assumed by Micrel for its use. Micrel reserves the right to change circuitry and specifications at any time without notification to the customer.

Micrel Products are not designed or authorized for use as components in life support appliances, devices or systems where malfunction of a product can reasonably be expected to result in personal injury. Life support devices or systems are devices or systems that (a) are intended for surgical implant into the body or (b) support or sustain life, and whose failure to perform can be reasonably expected to result in a significant injury to the user. A Purchaser's use or sale of Micrel Products for use in life support appliances, devices or systems is at Purchaser's own risk and Purchaser agrees to fully indemnify Micrel for any damages resulting from such use or sale.

© 2006 Micrel, Incorporated.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.