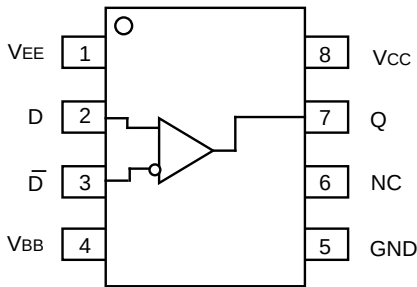


PACKAGE/ORDERING INFORMATION



8-Pin SOIC (Z8-1)

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 CHARACTERISTICS

V_{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 CHARACTERISTICS

V_{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 CHARACTERISTICS

V_{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

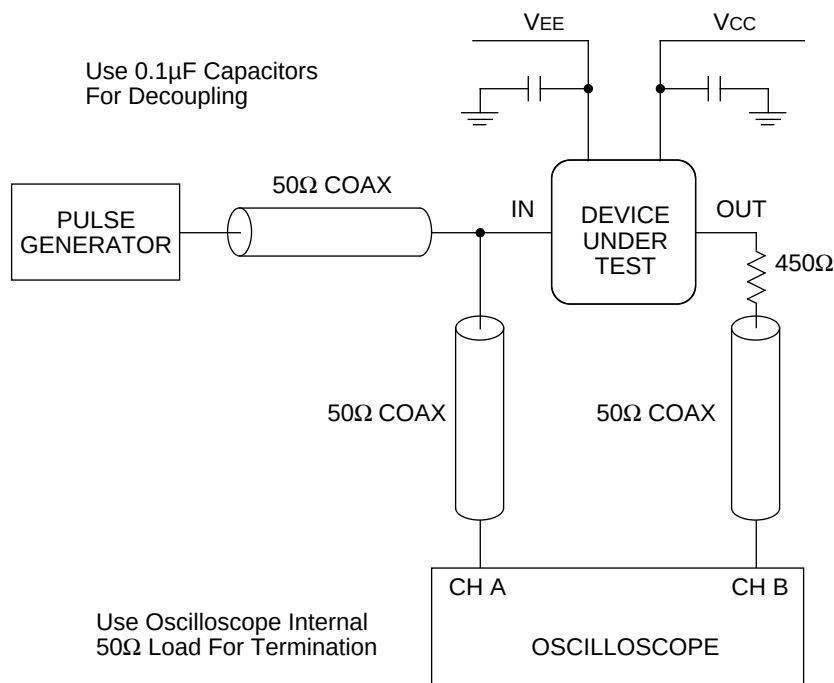
$V_{CC} = 4.5V$ to $5.5V$; $V_{EE} = -4.2V$ to $-5.5V$

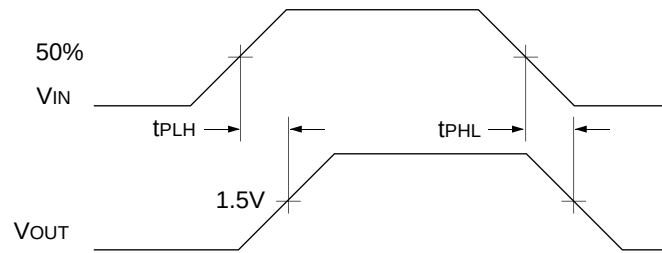
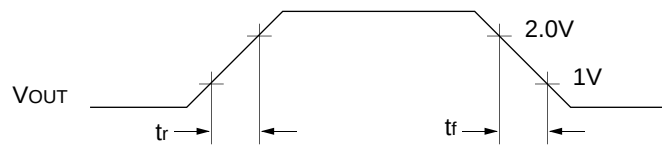
Symbol	Parameter	$T_A = -40^{\circ}C$			$T_A = 0^{\circ}C$			$T_A = +25^{\circ}C$			$T_A = +85^{\circ}C$			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
I_{IH}	Input HIGH Current	—	—	150	—	—	150	—	—	150	—	—	150	μA
I_{IL}	Input HIGH Current	0.5	—	—	0.5	—	—	0.5	—	—	0.5	—	—	μA
V_{CMR}	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:

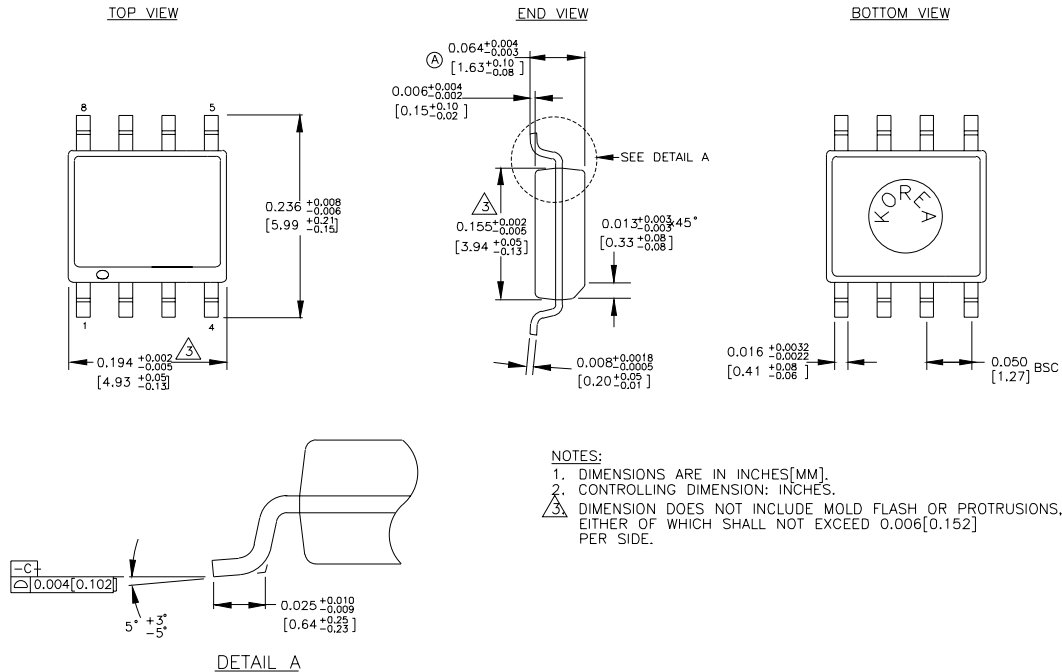
1. 200mV input guarantees full logic at output.

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

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