



JK FLIP-FLOP

SY10EL35
SY100EL35

FEATURES

- 525ps propagation delay
- 2.2GHz toggle frequency
- High bandwidth output transistions
- Internal 75K Ω input pull-down resistors
- Available in 8-pin SOIC package

DESCRIPTION

The SY10/100EL35 are high-speed JK Flip-Flops. The J/K data enters the master portion of the flip-flop when the clock is LOW and is transferred to the slave and, thus, the outputs, upon a positive transition of the clock. The reset pin is asynchronous and is activated with a logic HIGH.

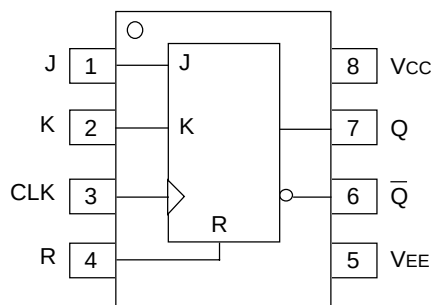
TRUTH TABLE⁽¹⁾

J	K	R	CLK	Qn+1
L	L	L	Z	Qn
L	H	L	Z	L
H	L	L	Z	H
H	H	L	Z	$\overline{Qn}$
X	X	H	X	L

NOTE:

1. Z = LOW-to-HIGH transition.

PACKAGE/ORDERING INFORMATION



8-PIN SOIC (Z8-1)

Ordering Information⁽¹⁾

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10EL35LZC	Z8-1	Commercial	HEL35	Sn-Pb
SY10EL35LZCTR ⁽²⁾	Z8-1	Commercial	HEL35	Sn-Pb
SY100EL35LZC	Z8-1	Commercial	XEL35	Sn-Pb
SY100EL35LZCTR ⁽²⁾	Z8-1	Commercial	XEL35	Sn-Pb
SY10EL35LZI	Z8-1	Industrial	HEL35	Sn-Pb
SY10EL35LZITR ⁽²⁾	Z8-1	Industrial	HEL35	Sn-Pb
SY100EL35LZI	Z8-1	Industrial	XEL35	Sn-Pb
SY100EL35LZITR ⁽²⁾	Z8-1	Industrial	XEL35	Sn-Pb
SY10EL35LZG ⁽³⁾	Z8-1	Industrial	HEL35 with Pb-Free bar-line indicator	Pb-Free NiPdAu
SY10EL35LZGTR ^(2, 3)	Z8-1	Industrial	HEL35 with Pb-Free bar-line indicator	Pb-Free NiPdAu
SY100EL35LZG ⁽³⁾	Z8-1	Industrial	XEL35 with Pb-Free bar-line indicator	Pb-Free NiPdAu
SY100EL35LZGTR ^(2, 3)	Z8-1	Industrial	XEL35 with Pb-Free bar-line indicator	Pb-Free NiPdAu

Notes:

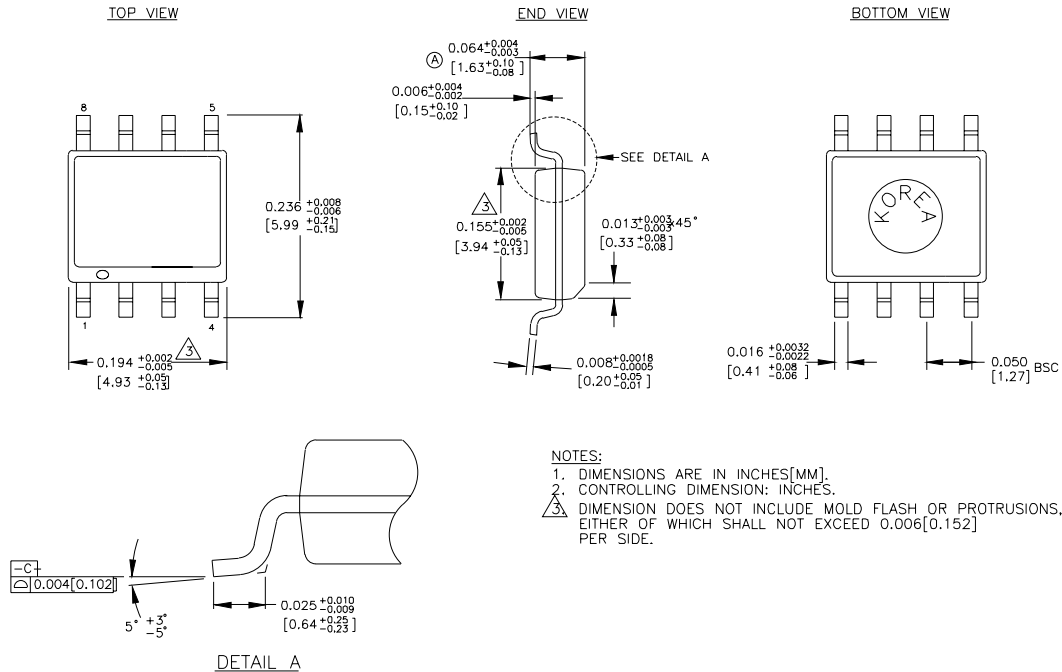
1. Contact factory for die availability. Dice are guaranteed at $T_A = 25^\circ\text{C}$, DC Electricals only.
2. Tape and Reel.
3. Pb-Free package is recommended for new designs.

DC ELECTRICAL CHARACTERISTICSV_{EE} = V_{EE} (Min.) to V_{EE} (Max.); V_{CC} = GND

Symbol	Parameter	T _A = -40°C			T _A = 0°C			T _A = +25°C			T _A = +85°C			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
I _{EE}	Power Supply Current													mA
	10EL	—	27	32	—	27	32	—	27	32	—	27	32	
	100EL	—	27	32	—	27	32	—	27	32	—	32	37	
V _{EE}	Power Supply Voltage													V
	10EL	—	-5.2	—	-4.75	-5.2	-5.5	-4.75	-5.2	-5.5	-4.75	-5.2	-5.5	
	100EL	—	-4.5	—	-4.20	-4.5	-5.5	-4.20	-4.5	-5.5	-4.20	-4.5	-5.5	
I _{IH}	Input HIGH Current	—	—	150	—	—	150	—	—	150	—	—	150	μA

AC ELECTRICAL CHARACTERISTICSV_{EE} = V_{EE} (Min.) to V_{EE} (Max.); V_{CC} = GND

Symbol	Parameter	T _A = -40°C			T _A = 0°C			T _A = +25°C			T _A = +85°C			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
f _{MAX}	Maximum Toggle Frequency	1.4	2.0	—	1.8	2.2	—	1.8	2.2	—	1.8	2.2	—	GHz
t _{PD}	Propagation Delay to Output	290	515	—	340	515	690	350	525	700	395	570	745	ps
		225	450	—	275	450	625	275	450	625	350	525	700	
t _S	Set-up Time	150	0	—	150	0	—	150	0	—	150	0	—	ps
t _H	Hold Time	250	100	—	250	100	—	250	100	—	250	100	—	ps
t _{RR}	Reset Recovery	400	200	—	400	200	—	400	200	—	400	200	—	ps
t _{PW}	Minimum Pulse Width CLK, Reset	400	—	—	400	—	—	400	—	—	400	—	—	ps
t _r t _f	Output Rise/Fall Times Q (20% to 80%)	100	225	350	100	225	350	100	225	350	100	225	350	ps

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

Rev. 03

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