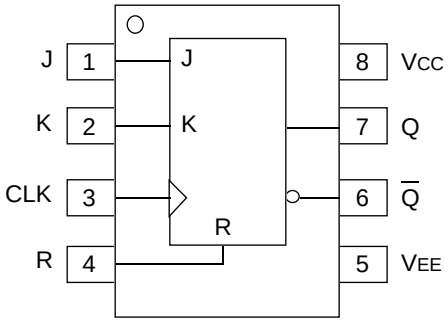
FEATURES

- **525ps propagation delay**
- **2.2GHz toggle frequency**
- **High bandwidth output transistions**
- **Internal 75KΩ 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.

PIN CONFIGURATION/BLOCK DIAGRAM



SOIC
TOP VIEW

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	$\overline{Q}$n
X	X	H	X	L

NOTE:

1. Z = LOW-to-HIGH transition.

DC ELECTRICAL CHARACTERISTICS

V_{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 CHARACTERISTICS

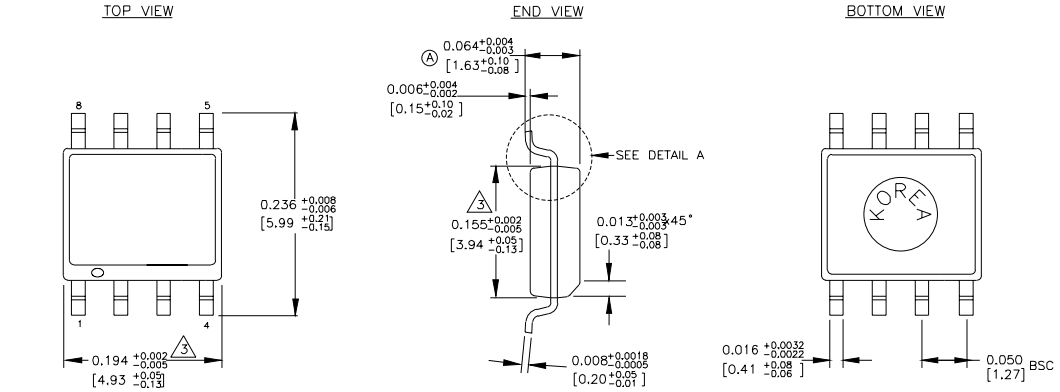
V_{EE} = V_{EE} (Min.) to V_{EE} (Max.); V_{CC} = GND

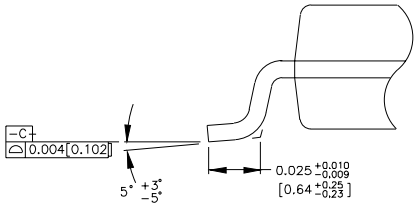
Symbol	Parameter	T_A = –40°C			T_A = 0°C			T_A = +25°C			T_A = +85°C			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
f_{MAX}	Maximum Toggle Frequency	1.4	2.0	—	1.8	2.2	—	1.8	2.2	—	1.8	2.2	—	GHz
t_{PLH}	Propagation Delay CLK	290	515	—	340	515	690	350	525	700	395	570	745	ps
t_{PHL}	to Output MR	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	Output Rise/Fall Times Q	100	225	350	100	225	350	100	225	350	100	225	350	ps
t_f	(20% to 80%)													

PRODUCT ORDERING CODE

Ordering Code	Package Type	Operating Range
SY10EL35ZC	Z8-1	Commercial
SY10EL35ZCTR	Z8-1	Commercial
SY100EL35ZC	Z8-1	Commercial
SY100EL35ZCTR	Z8-1	Commercial

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





NOTES:
1. DIMENSIONS ARE IN INCHES[MM].
2. CONTROLLING DIMENSION: INCHES.
3. DIMENSION DOES NOT INCLUDE MOLD FLASH OR PROTRUSIONS, EITHER OF WHICH SHALL NOT EXCEED 0.006[0.152] PER SIDE.

Rev. 03

MICREL-SYNERGY 3250 SCOTT BOULEVARD SANTA CLARA CA 95054 USA
TEL + 1 (408) 980-9191 FAX + 1 (408) 914-7878 WEB http://www.micrel.com

This information is believed to be accurate and reliable, however no responsibility is assumed by Micrel for its use nor for any infringement of patents or other rights of third parties resulting from its use. No license is granted by implication or otherwise under any patent or patent right of Micrel Inc.
© 2000 Micrel Incorporated