

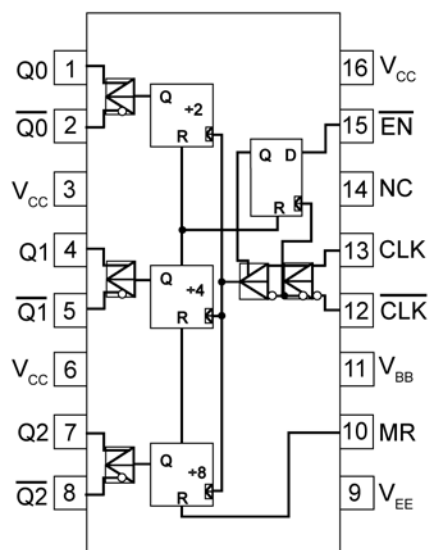
Ordering Information

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10EL34LZG	Z16-2	Industrial	SY10EL34LZG with Pb-Free Bar Line Indicator	Pb-Free NiPdAu
SY10EL34LZGTR ⁽²⁾	Z16-2	Industrial	SY10EL34LZG with Pb-Free Bar Line Indicator	Pb-Free NiPdAu
SY100EL34LZG	Z16-2	Industrial	SY100EL34LZG with Pb-Free Bar Line Indicator	Pb-Free NiPdAu
SY100EL34LZGTR ⁽²⁾	Z16-2	Industrial	SY100EL34LZG with Pb-Free Bar Line Indicator	Pb-Free NiPdAu
SY10EL34ZG	Z16-2	Industrial	SY10EL34ZG with Pb-Free Bar Line Indicator	Pb-Free NiPdAu
SY10EL34ZGTR ⁽²⁾	Z16-2	Industrial	SY10EL34ZG with Pb-Free Bar Line Indicator	Pb-Free NiPdAu
SY100EL34ZG	Z16-2	Industrial	SY100EL34ZG with Pb-Free Bar Line Indicator	Pb-Free NiPdAu
SY100EL34ZGTR ⁽²⁾	Z16-2	Industrial	SY100EL34ZG 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.

Pin Configuration



16-Pin Narrow SOIC (Z16-2)

DC Electrical Characteristics⁽¹⁾ $V_{EE} = V_{EE}$ (minimum) to V_{EE} (maximum); $V_{CC} = \text{GND}$.

Symbol	Parameter	Min.	Typ.	Max.	Units
$T_A = -40^\circ\text{C}$					
I_{EE}	Power Supply Current				
	10EL	–	–	49	mA
	100EL	–	–	49	
V_{BB}	Output Reference Voltage				V
	10EL	–1.43		–1.30	
	100EL	–1.38		–1.26	
I_{IH}	Input High Current	–	–	150	μA
$T_A = 0^\circ\text{C}$					
I_{EE}	Power Supply Current				
	10EL	–	–	49	mA
	100EL	–	–	49	
V_{BB}	Output Reference Voltage				V
	10EL	–1.38		–1.27	
	100EL	–1.38		–1.26	
I_{IH}	Input High Current	–	–	150	μA
$T_A = +25^\circ\text{C}$					
I_{EE}	Power Supply Current				
	10EL	–	–	49	mA
	100EL	–	–	49	
V_{BB}	Output Reference Voltage				V
	10EL	–1.35		–1.25	
	100EL	–1.38		–1.26	
I_{IH}	Input High Current	–	–	150	μA
$T_A = +85^\circ\text{C}$					
I_{EE}	Power Supply Current				
	10EL	–	–	49	mA
	100EL	–	–	54	
V_{BB}	Output Reference Voltage				V
	10EL	–1.31		–1.19	
	100EL	–1.38		–1.26	
I_{IH}	Input High Current	–	–	150	μA

Note:

1. Parametric values specified at:

- 5V Power Supply Range:
100EL34 Series: –4.2V to –5.5V
10EL34 Series: –4.75V to –5.5V
- 3V Power Supply Range:
10/100EL34L Series: –3.0V to –3.8V

AC Electrical Characteristics⁽¹⁾ $V_{EE} = V_{EE}$ (minimum) to V_{EE} (maximum); $V_{CC} = \text{GND}$.

Symbol	Parameter	Min.	Typ.	Max.	Units
$T_A = -40^\circ\text{C}$					
t_{PD}	Propagation Delay to Output CLK MR	960	1100	1200	ps
		650	800	1010	
t_{SKEW}	Within-Device Skew ⁽²⁾	–	–	50	ps
t_S	Set-Up Time ($\overline{EN}$)	400	–	–	ps
t_H	Hold Time ($\overline{EN}$)	200	–	–	ps
V_{PP}	Minimum Input Swing ⁽³⁾	250	–	–	mV
V_{CMR}	Common-Mode Range ⁽⁴⁾	–1.3	–	–0.4	V
t_r t_f	Output Rise/Fall Times Q (20% – 80%)	275	400	525	ps
$T_A = 0^\circ\text{C}$					
t_{PD}	Propagation Delay to Output CLK MR	960	1100	1200	ps
		650	800	1010	
t_{SKEW}	Within-Device Skew ⁽²⁾	–	–	50	ps
t_S	Set-Up Time ($\overline{EN}$)	400	–	–	ps
t_H	Hold Time ($\overline{EN}$)	200	–	–	ps
V_{PP}	Minimum Input Swing ⁽³⁾	250	–	–	mV
V_{CMR}	Common-Mode Range ⁽⁴⁾	–1.4	–	–0.4	V
t_r t_f	Output Rise/Fall Times Q (20% – 80%)	275	400	525	ps
$T_A = +25^\circ\text{C}$					
t_{PD}	Propagation Delay to Output CLK MR	960	1100	1200	ps
		650	800	1010	
t_{SKEW}	Within-Device Skew ⁽²⁾	–	–	50	ps
t_S	Set-Up Time ($\overline{EN}$)	400	–	–	ps
t_H	Hold Time ($\overline{EN}$)	200	–	–	ps
V_{PP}	Minimum Input Swing ⁽³⁾	250	–	–	mV
V_{CMR}	Common-Mode Range ⁽⁴⁾	–1.4	–	–0.4	V
t_r t_f	Output Rise/Fall Times Q (20% – 80%)	275	400	525	ps

AC Electrical Characteristics⁽¹⁾ (Continued) $V_{EE} = V_{EE}$ (minimum) to V_{EE} (maximum); $V_{CC} = \text{GND}$.

Symbol	Parameter	Min.	Typ.	Max.	Units
$T_A = +85^\circ\text{C}$					
t_{PD}	Propagation Delay to Output CLK MR	960	1100	1200	ps
		650	800	1010	
t_{SKEW}	Within-Device Skew	–	–	50	ps
t_S	Set-Up Time ($\overline{\text{EN}}$)	400	–	–	ps
t_H	Hold Time ($\overline{\text{EN}}$)	200	–	–	ps
V_{PP}	Minimum Input Swing ⁽³⁾	250	–	–	mV
V_{CMR}	Common-Mode Range ⁽⁴⁾	–1.4	–	–0.4	V
t_r t_f	Output Rise/Fall Times Q (20% – 80%)	275	400	525	ps

Notes:

- Parametric values specified at:
 - 5V Power Supply Range:
100EL34 Series: –4.2V to –5.5V
10EL34 Series: –4.75V to –5.5V
 - 3V Power Supply Range:
10/100EL34L Series: –3.0V to –3.8V
- Skew is measured between outputs under identical transitions.
- Minimum input swing for which AC parameters are guaranteed. The device will function reliably with differential inputs down to 100mV.
- The CMR range is referenced to the most positive side of the differential input signal. Normal operation is obtained if the HIGH level falls within the specified range and the peak-to-peak voltage lies between V_{PP} minimum and 1V. The lower end of the CMR range varies 1:1 with V_{EE} . The numbers in the specification table assume a nominal $V_{EE} = -3.3\text{V}$. Note for PECL operation, the $V_{CMR(MIN)}$ will be fixed at $3.3\text{V} - I_{VCMR(MIN)}$.

Truth Table

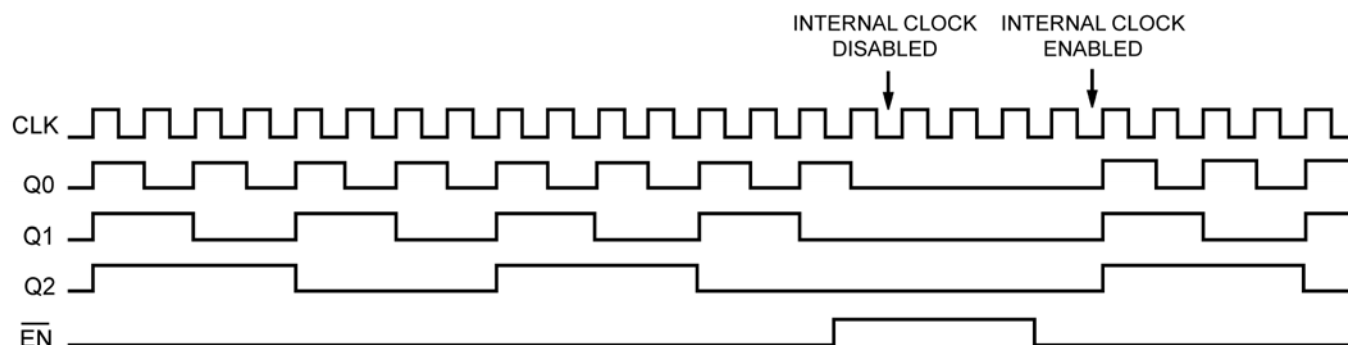
CLK	$\overline{\text{EN}}$	MR	Function
Z	L	L	Divide
ZZ	H	L	Hold Q_{0-2}
X	X	H	Reset Q_{0-2}

Notes:

Z = LOW-to-HIGH transition

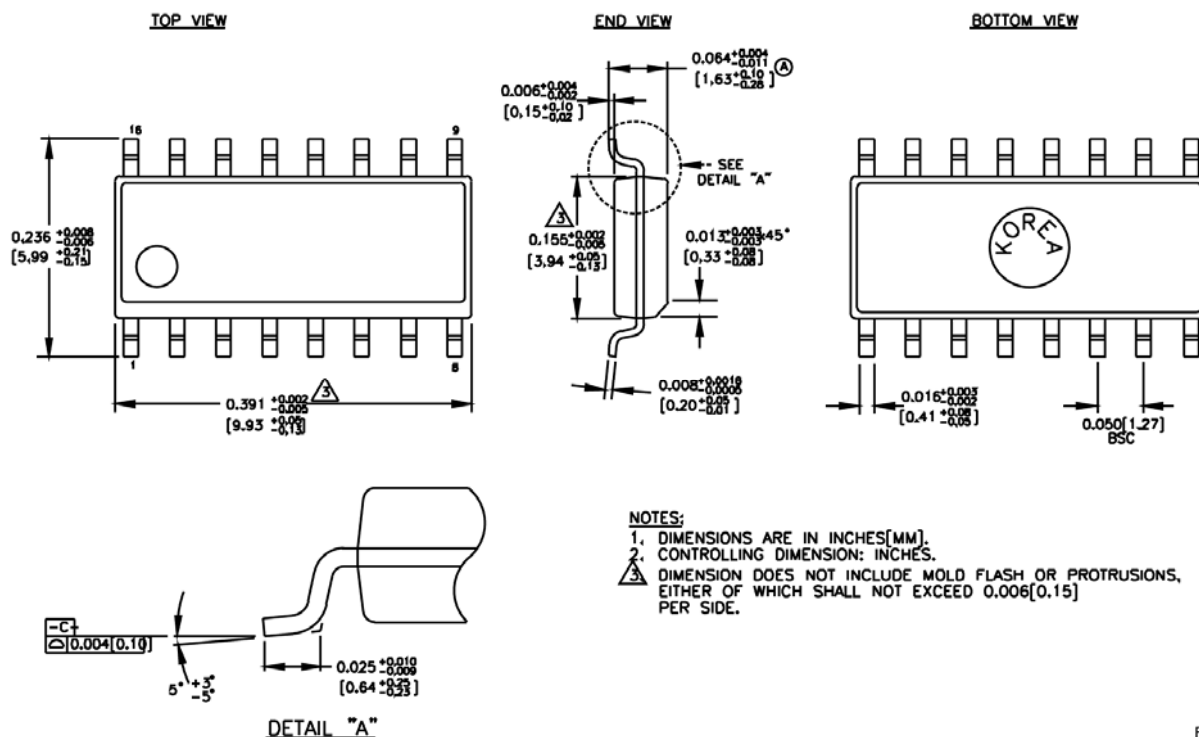
ZZ = HIGH-to-LOW transition

Timing Diagram



The $\overline{\text{EN}}$ signal will freeze the internal clocks to the flip-flops on the first falling edge of CLK after its assertion. The internal dividers will maintain their state during the internal clock freeze and will return to clocking once the internal clocks are unfrozen. The outputs will transition to their next states in the same manner, time and relationship as they would have had the $\overline{\text{EN}}$ signal not been asserted.

Package Information



Rev. 02

16-Pin .150" Wide SOIC (Z16-2)

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