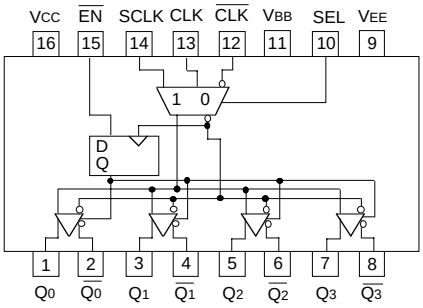
PACKAGE/ORDERING INFORMATION



16-Pin Narrow SOIC (Z8-1)

Ordering Information[1]

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10EL15ZC	Z16-2	Commercial	SY10EL15ZC	Sn-Pb
SY10EL15ZCTR[2]	Z16-2	Commercial	SY10EL15ZC	Sn-Pb
SY100EL15ZC	Z16-2	Commercial	SY100EL15ZC	Sn-Pb
SY100EL15ZCTR[2]	Z16-2	Commercial	SY100EL15ZC	Sn-Pb
SY10EL15ZI	Z16-2	Industrial	SY10EL15ZI	Sn-Pb
SY10EL15ZITR[2]	Z16-2	Industrial	SY10EL15ZI	Sn-Pb
SY100EL15ZI	Z16-2	Industrial	SY100EL15ZI	Sn-Pb
SY100EL15ZITR[2]	Z16-2	Industrial	SY100EL15ZI	Sn-Pb
SY10EL15ZG[3]	Z16-2	Industrial	SY10EL15ZG with Pb-Free bar-line indicator	Pb-Free NiPdAu
SY10EL15ZGTR[2, 3]	Z16-2	Industrial	SY10EL15ZG with Pb-Free bar-line indicator	Pb-Free NiPdAu
SY100EL15ZG[3]	Z16-2	Industrial	SY100EL15ZG with Pb-Free bar-line indicator	Pb-Free NiPdAu
SY100EL15ZGTR[2, 3]	Z16-2	Industrial	SY100EL15ZG 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.

PIN NAMES

Pin	Function
CLK	Differential Clock Inputs
SCLK	Synchronous Clock Input
$\overline{EN}$	Synchronous Enable
SEL	Clock Select Input
V_{BB}	Reference Output
Q_{0-3}	Differential Clock Outputs

TRUTH TABLE

CLK	SCLK	SEL	$\overline{EN}$	Q
L	X	L	L	L
H	X	L	L	H
X	L	H	L	L
X	H	H	L	H
X	X	X	H	L*

* On next negative transition of CLK or SCLK

ABSOLUTE MAXIMUM RATINGS(1)

Symbol	Rating	Value	Unit
V_{EE}	Power Supply (V_{CC} = 0V)	–8.0 to 0	VDC
V_I	Input Voltage (V_{CC} = 0V)	0 to –6.0	VDC
I_{OUT}	Output Current –Continuous –Surge	 50 100	mA
T_{LEAD}	Lead Temperature Range (soldering, 20sec.)	+260	°C
T_A	Operating Temperature Range	–40 to +85	°C
V_{EE}	Operating Range(1),(2)	–5.7 to –4.2	V

NOTES:

1. Absolute maximum rating, beyond which, device life may be impaired, unless otherwise specified on an individual data sheet.
2. Parametric values specified at: 100EL15 Series: –4.2V to –5.5V.
   10EL15 Series –4.75V to –5.5V.

10EL DC ELECTRICAL CHARACTERISTICS

V_{EE} = V_{EE} (Min.) to V_{EE} (Max.); V_{CC} = GND(1)

		T_A = –40°C		T_A = 0°C		T_A = +25°C			T_A = +85°C		
Symbol	Parameter	Min.	Max.	Min.	Max.	Min.	Typ.	Max.	Min.	Max.	Unit
V_{OH}	Output HIGH Voltage	–1080	–890	–1020	–840	–980	—	–810	–910	–720	mV
V_{OL}	Output LOW Voltage	–1950	–1650	–1950	–1630	–1950	—	–1630	–1950	–1595	mV
V_{IH}	Input HIGH Voltage	–1230	–890	–1170	–840	–1130	—	–810	–1060	–720	mV
V_{IL}	Input LOW Voltage	–1950	–1500	–1950	–1480	–1950	—	–1480	–1950	–1445	mV
I_{IH}	Input High Current	—	150	—	150	—	—	150	—	150	µA
I_{IL}	Input LOW Current	0.5	—	0.5	—	0.5	—	—	0.5	—	µA
I_{EE}	Power Supply Current	—	35	—	35	—	25	35	—	38	mA
V_{BB}	Output Reference Voltage	–1.38	–1.26	–1.38	–1.26	–1.38	—	–1.26	–1.38	–1.26	V

NOTE:

1. 10EL circuits are designed to meet the DC specifications shown in the table after thermal equilibrium has been established. The circuit is in a test socket or mounted on a printed circuit board and transverse airflow greater than 500lfpm is maintained. Outputs are terminated through a 50Ω resistor to –2.0V except where otherwise specified on the individual data sheets.

100EL DC ELECTRICAL CHARACTERISTICS

V_{EE} = V_{EE} (Min.) to V_{EE} (Max.); V_{CC} = GND[1]

Symbol	Parameter	T_A = –40°C		T_A = 0°C		T_A = +25°C			T_A = +85°C		Unit
		Min.	Max.	Min.	Max.	Min.	Typ.	Max.	Min.	Max.	
V_{OH}	Output HIGH Voltage[2]	–1085	–880	–1025	–880	–1025	–955	–880	–1025	–880	mV
V_{OL}	Output LOW Voltage[2]	–1830	–1555	–1810	–1620	–1810	–1705	–1620	–1810	–1620	mV
V_{OHA}	Output HIGH Voltage[3]	–1095	—	–1035	—	–1035	—	—	–1035	—	mV
V_{OLA}	Output LOW Voltage[3]	—	–1555	—	–1610	—	—	–1610	—	–1610	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
I_{IH}	Input High Current	—	150	—	150	—	—	150	—	150	µA
I_{IL}	Input LOW Current[4]	0.5	—	0.5	—	0.5	—	—	0.5	—	µA
I_{EE}	Power Supply Current	—	35	—	35	—	25	35	—	38	mA
V_{BB}	Output Reference Voltage	–1.38	–1.26	–1.38	–1.26	–1.38	—	–1.26	–1.38	–1.26	V

NOTES:

1. This table replaces the three traditionally seen in ECL 100K data books. The same DC parameter values at V_{EE} = –4.5V now apply across the full V_{EE} range of –4.2V to –5.5V. Outputs are terminated through a 50Ω resistor to –2.0V except where otherwise specified on the individual data sheets.
2. V_{IN} = V_{IH}(Max) or V_{IL}(Min).
3. V_{IN} = V_{IH}(Min) or V_{IL}(Max).
4. V_{IN} = V_{IL}(Max).

AC ELECTRICAL CHARACTERISTICS

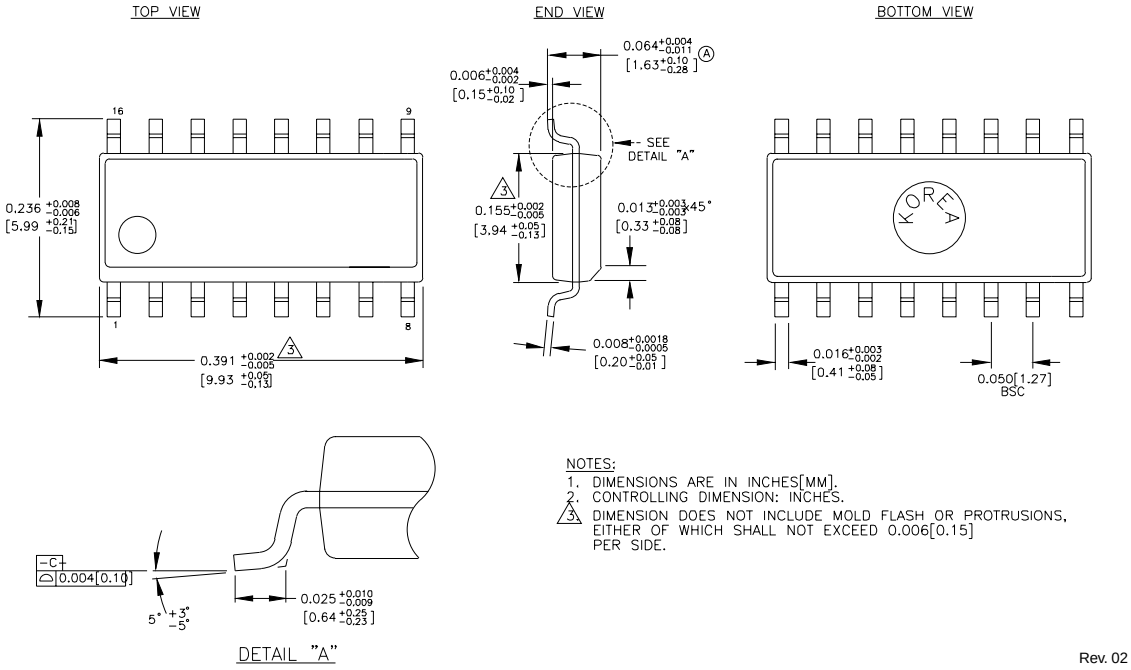
V_{EE} = V_{EE} (Min) to V_{EE} (Max); V_{CC} = GND

Symbol	Parameter	T_A = –40°C		T_A = 0°C		T_A = +25°C			T_A = +85°C		Unit
		Min.	Max.	Min.	Max.	Min.	Typ.	Max.	Min.	Max.	
t_{PD}	Propagation Delay										ps
	CLK to Q (Diff)	460	660	470	670	470	—	670	500	700	
	CLK to Q (SE)	410	710	420	720	420	—	720	450	750	
	SCLK to Q	410	710	420	720	420	—	720	470	750	
t_{skew}	Part-to-Part Skew[1]	—	200	—	200	—	—	200	—	200	ps
	Within-Device Skew	—	50	—	50	—	—	50	—	50	
t_S	Setup Time $\overline{EN}$	150	—	150	—	150	—	—	150	—	ps
t_H	Hold Time $\overline{EN}$	400	—	400	—	400	—	—	400	—	ps
V_{PP}	Minimum Input CLK Swing	250	—	250	—	250	—	—	250	—	mV
V_{CMR}	Common Mode CLK Range	–2.0	–0.4	–2.0	–0.4	–2.0	—	–0.4	–2.0	–0.4	V
t_r t_f	Output Rise/Fall Times Q (20% – 80%)	—	—	325	575	325	—	575	325	575	ps

NOTE:

1. Skews are specified for identical LOW-to-HIGH or HIGH-to-LOW transitions.

16-PIN SOIC .150" WIDE (Z16-2)



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