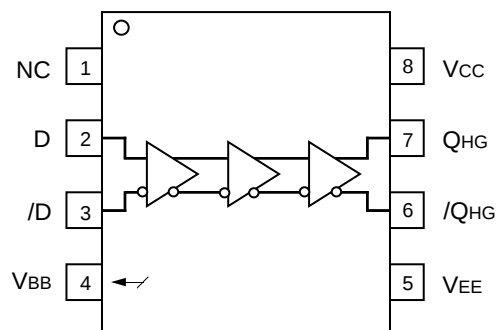
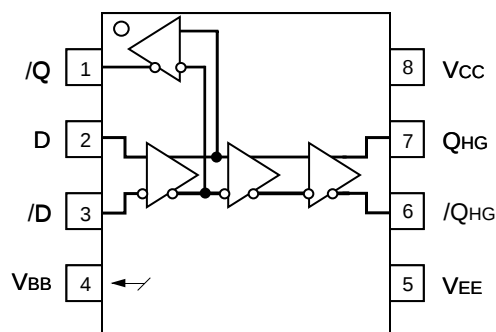


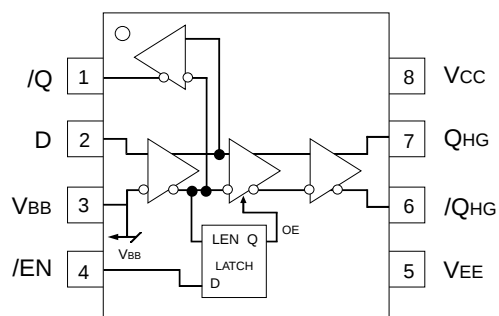
PIN CONFIGURATION/BLOCK DIAGRAM



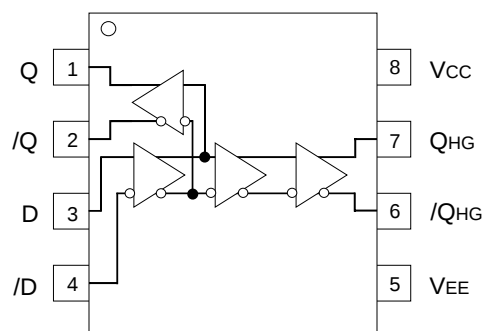
SY10/100EL16VA
5V/3.3V Differential Receiver w/High Gain
(Available in 8-pin SOIC or 8-pin MSOP)



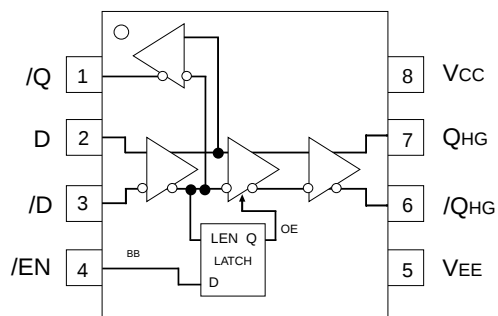
SY10/100EL16VB
EL16VA w/Extra QB output
(Available in 8-pin SOIC or 8-pin MSOP)



SY10/100EL16VC
EL16VB w/Enable Input
(Available in 8-pin SOIC or 8-pin MSOP)

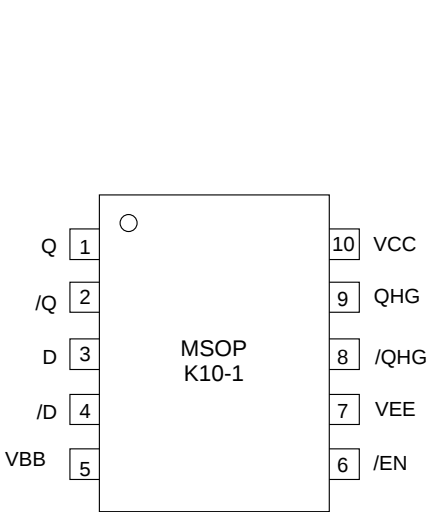


SY10/100EL16VE
EL16VB w/Differential Q, QB output (no VBB)
(Available in 8-pin SOIC or 8-pin MSOP)

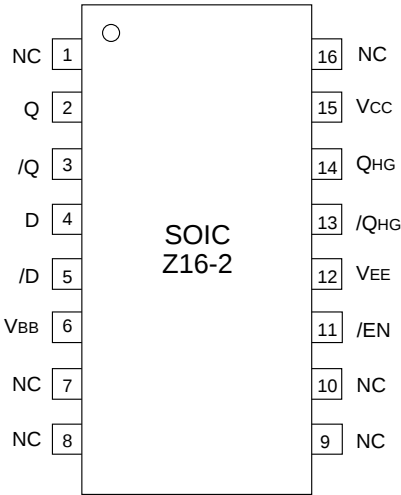


SY10/100EL16VF
EL16VC w/Differential Data Input
(Available in 8-pin SOIC or 8-pin MSOP)

PIN CONFIGURATION/BLOCK DIAGRAM



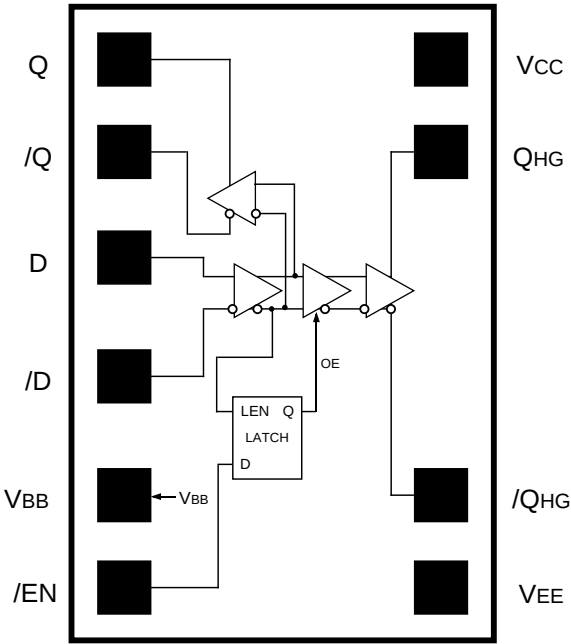
SY10/100EL16VDKC
EL16VDXC packaged in 10-pin MSOP



SY10/100EL16VDZC
EL16VDXC packaged in 16-pin SOIC

DIE LAYOUT

All options in DIE form w/Extra Q output and VBB output
Die Size (mils) 39. X 52. X 14.5



SY10/100EL16VDXC
DIE
TOP VIEW

PACKAGE/ORDERING INFORMATION**Ordering Information⁽¹⁾**

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10EL16VAZC	Z8-1	Commercial	HEL16VA	Sn-Pb
SY10EL16VAZCTR ⁽²⁾	Z8-1	Commercial	HEL16VA	Sn-Pb
SY100EL16VAZC	Z8-1	Commercial	XEL16VA	Sn-Pb
SY100EL16VAZCTR ⁽²⁾	Z8-1	Commercial	XEL16VA	Sn-Pb
SY10EL16VBZC	Z8-1	Commercial	HEL16VB	Sn-Pb
SY10EL16VBZCTR ⁽²⁾	Z8-1	Commercial	HEL16VB	Sn-Pb
SY100EL16VBZC	Z8-1	Commercial	XEL16VB	Sn-Pb
SY100EL16VBZCTR ⁽²⁾	Z8-1	Commercial	XEL16VB	Sn-Pb
SY10EL16VCZC	Z8-1	Commercial	HEL16VC	Sn-Pb
SY10EL16VCZCTR ⁽²⁾	Z8-1	Commercial	HEL16VC	Sn-Pb
SY100EL16VCZC	Z8-1	Commercial	XEL16VC	Sn-Pb
SY100EL16VCZCTR ⁽²⁾	Z8-1	Commercial	XEL16V	Sn-Pb
SY10EL16VDZC	Z16-2	Commercial	SY10EL16VDZC	Sn-Pb
SY10EL16VDZCTR ⁽²⁾	Z16-2	Commercial	SY10EL16VDZC	Sn-Pb
SY100EL16VDZC	Z16-2	Commercial	SY100EL16VDZC	Sn-Pb
SY100EL16VDZCTR ⁽²⁾	Z16-2	Commercial	SY100EL16VDZC	Sn-Pb
SY10EL16VEZC	Z8-1	Commercial	HEL16VE	Sn-Pb
SY10EL16VEZCTR ⁽²⁾	Z8-1	Commercial	HEL16VE	Sn-Pb
SY100EL16VEZC	Z8-1	Commercial	XEL16VE	Sn-Pb
SY100EL16VEZCTR ⁽²⁾	Z8-1	Commercial	XEL16VE	Sn-Pb
SY10EL16VFZC	Z8-1	Commercial	HEL16VF	Sn-Pb
SY10EL16VFZCTR ⁽²⁾	Z8-1	Commercial	HEL16VF	Sn-Pb
SY100EL16VFZC	Z8-1	Commercial	XEL16VF	Sn-Pb
SY100EL16VFZCTR ⁽²⁾	Z8-1	Commercial	XEL16VF	Sn-Pb
SY10EL16VAZI ⁽²⁾	Z8-1	Industrial	HEL16VA	Sn-Pb
SY10EL16VAZITR ^(1,2)	Z8-1	Industrial	HEL16VA	Sn-Pb
SY100EL16VAZI ⁽²⁾	Z8-1	Industrial	XEL16VA	Sn-Pb
SY100EL16VAZITR ^(1,2)	Z8-1	Industrial	XEL16VA	Sn-Pb
SY10EL16VBZI ⁽²⁾	Z8-1	Industrial	HEL16VB	Sn-Pb
SY10EL16VBZITR ^(1,2)	Z8-1	Industrial	HEL16VB	Sn-Pb
SY100EL16VBZI ⁽²⁾	Z8-1	Industrial	XEL16VB	Sn-Pb
SY100EL16VBZITR ^(1,2)	Z8-1	Industrial	XEL16VB	Sn-Pb
SY10EL16VCZI ⁽²⁾	Z8-1	Industrial	HEL16VC	Sn-Pb
SY10EL16VCZITR ^(1,2)	Z8-1	Industrial	HEL16VC	Sn-Pb
SY100EL16VCZI ⁽²⁾	Z8-1	Industrial	XEL16VC	Sn-Pb
SY100EL16VCZITR ⁽²⁾	Z8-1	Industrial	XEL16VC	Sn-Pb

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.

Ordering Information⁽¹⁾

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10EL16VDZI	Z16-2	Industrial	SY10EL16VDZI	Sn-Pb
SY10EL16VDZITR ⁽²⁾	Z16-2	Industrial	SY10EL16VDZI	Sn-Pb
SY100EL16VDZI	Z16-2	Industrial	SY100EL16VDZI	Sn-Pb
SY100EL16VDZITR ⁽²⁾	Z16-2	Industrial	SY100EL16VDZI	Sn-Pb
SY10EL16VEZI	Z8-1	Industrial	HEL16VE	Sn-Pb
SY10EL16VEZITR ⁽²⁾	Z8-1	Industrial	HEL16VE	Sn-Pb
SY100EL16VEZI	Z8-1	Industrial	XEL16VE	Sn-Pb
SY100EL16VEZITR ⁽²⁾	Z8-1	Industrial	XEL16VE	Sn-Pb
SY10EL16VFZI	Z8-1	Industrial	HEL16VF	Sn-Pb
SY10EL16VFZITR ⁽²⁾	Z8-1	Industrial	HEL16V	Sn-Pb
SY100EL16VFZI	Z8-1	Industrial	XEL16VF	Sn-Pb
SY100EL16VFZITR ⁽²⁾	Z8-1	Industrial	XEL16VF	Sn-Pb
SY10EL16VAZG ⁽³⁾	Z8-1	Industrial	HEL16VA with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY10EL16VAZGTR ^(2, 3)	Z8-1	Industrial	HEL16VA with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY100EL16VAZG ⁽³⁾	Z8-1	Industrial	XEL16VA with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY100EL16VAZGTR ^(2, 3)	Z8-1	Industrial	XEL16VA with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY10EL16VBZG ⁽³⁾	Z8-1	Industrial	HEL16VB with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY10EL16VBZGTR ^(2, 3)	Z8-1	Industrial	HEL16VB with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY100EL16VBZG ⁽³⁾	Z8-1	Industrial	XEL16VB with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY100EL16VBZGTR ^(2, 3)	Z8-1	Industrial	XEL16VB with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY100EL16VCKGTR ^(2, 3)	K8-1	Industrial	X16C with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY10EL16VCZG ⁽³⁾	Z8-1	Industrial	HEL16VC with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY10EL16VCZGTR ^(2, 3)	Z8-1	Industrial	HEL16VC with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY100EL16VCZG ⁽³⁾	Z8-1	Industrial	XEL16VC with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY100EL16VCZGTR ^(2, 3)	Z8-1	Industrial	XEL16VC with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY100EL16VDKG	K10-1	Industrial	XEL16VD with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY100EL16VDKGTR ⁽²⁾	K10-1	Industrial	XEL16VD with Pb-Free bar-line indicator	NiPdAu Pb-Free

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.

Ordering Information⁽¹⁾

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10EL16VDZG ⁽³⁾	Z16-2	Industrial	SY10EL16VDZG with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY10EL16VDZGTR ^(2, 3)	Z16-2	Industrial	SY10EL16VDZG with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY100EL16VDZG ⁽³⁾	Z16-2	Industrial	SY100EL16VDZG with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY100EL16VDZGTR ^(2, 3)	Z16-2	Industrial	SY100EL16VDZG with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY10EL16VEZG ⁽³⁾	Z8-1	Industrial	HEL16VE with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY10EL16VEZGTR ^(2, 3)	Z8-1	Industrial	HEL16VE with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY100EL16VEZG ⁽³⁾	Z8-1	Industrial	XEL16VE with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY100EL16VEZGTR ^(2, 3)	Z8-1	Industrial	XEL16VE with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY10EL16VFZG ⁽³⁾	Z8-1	Industrial	HEL16VF with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY10EL16VFZGTR ^(2, 3)	Z8-1	Industrial	HEL16VF with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY100EL16VFZG ⁽³⁾	Z8-1	Industrial	XEL16VF with Pb-Free bar-line indicator	NiPdAu Pb-Free

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 CHARACTERISTICS⁽¹⁾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	—	—	40	—	—	40	—	—	40	—	—	40	
	100EL	—	—	40	—	—	40	—	—	40	—	—	46	
V _{BB}	Output Reference Voltage													V
	10EL	-1.43	—	-1.30	-1.38	—	-1.27	-1.35	—	-1.25	-1.31	—	-1.19	
	100EL	-1.38	—	-1.26	-1.38	—	-1.26	-1.38	—	-1.26	-1.38	—	-1.26	
I _{IH}	Input HIGH Current	—	—	150	—	—	150	—	—	150	—	—	150	μA

Note:

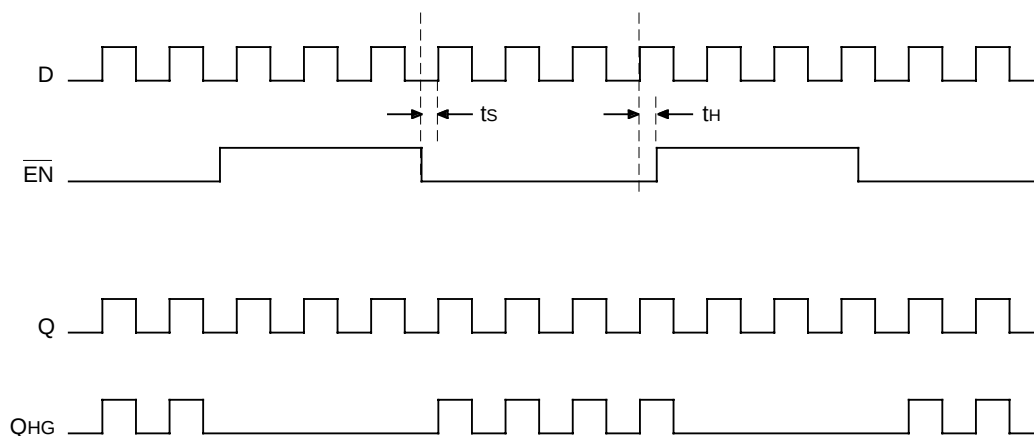
1. Parametric values specified at: 10/100EL16VA-VF Series: -3.0V to -5.5V.

AC ELECTRICAL CHARACTERISTICS⁽⁴⁾V_{EE} = V_{EE} (Min) to V_{EE} (Max), V_{CC} = GND

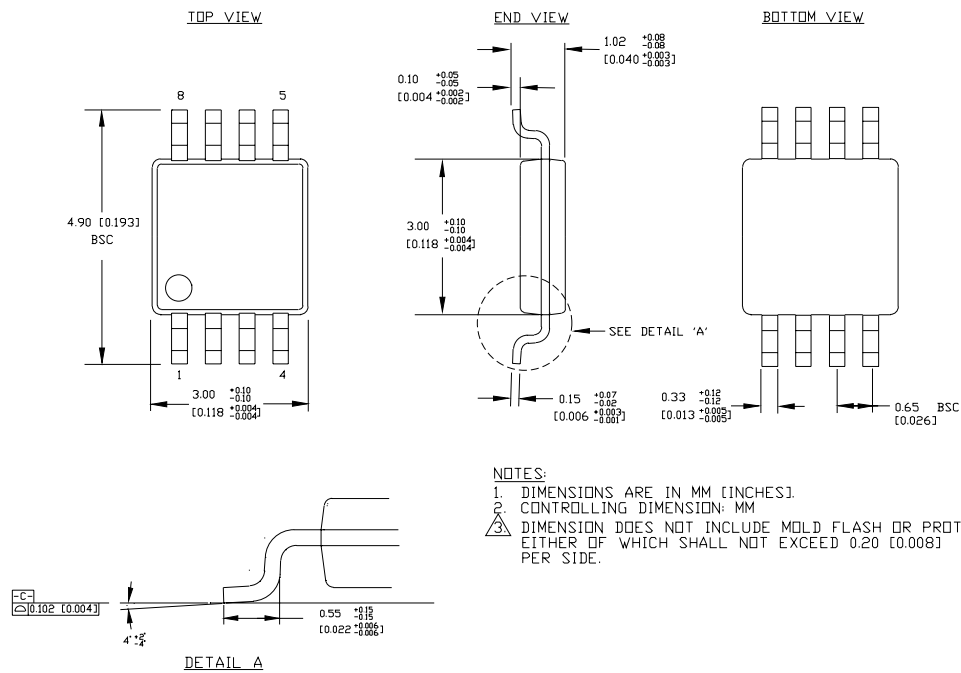
Symbol	Parameter	T _A = -40°C			T _A = 0°C			T _A = +25°C			T _A = +85°C			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
t _{PLH}	Propagation Delay to Q, /Q Output													ps
t _{PHL}	D (Diff)	—	—	350	—	—	350	—	—	350	—	—	380	
	D (SE)	—	—	400	—	—	400	—	—	400	—	—	430	
	Q _{HG} , /Q _{HG} Output													
	D (Diff)	—	—	650	—	—	650	—	—	650	—	—	730	
	D (SE)	—	—	700	—	—	700	—	—	700	—	—	780	
t _s	Setup Time /EN	—	150	—	—	150	—	—	150	—	—	150	—	ps
t _h	Hold Time /EN	—	150	—	—	150	—	—	150	—	—	150	—	ps
t _{skew}	Duty Cycle Skew ⁽¹⁾ (Diff)	—	5	—	—	5	20	—	5	20	—	5	20	ps
V _{PP}	Minimum Input Swing ⁽²⁾	150	—	—	150	—	—	150	—	—	150	—	—	mV
V _{CMR}	Common Mode Range ⁽³⁾	-1.3	—	-0.4	-1.4	—	-0.4	-1.4	—	-0.4	-1.4	—	-0.4	V
t _r t _f	Output Q Rise/Fall Time (20% TO 80%)	100	225	350	100	225	350	100	225	350	100	225	350	ps

Notes:

1. Duty cycle skew is the difference between a t_{PLH} and t_{PHL} propagation delay through a device.
2. Minimum input swing for which AC parameters are guaranteed. The device has a DC gain of ≈ 40 to Q, /Q outputs and a DC gain of ≈ 200 or higher to /Q_{HG}/Q_{HG} outputs.
3. 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} min. and 1V. The lower end of the CMR range varies 1:1 with V_{EE}. The numbers in the spec table assume a nominal V_{EE} = -3.3V. Note for PECL operation, the V_{CMR} (min) will be fixed at 3.3V - [V_{CMR} (min)].
4. Parametric values specified at: 10/100EL16VA-VF Series: -3.0V to -5.5V.

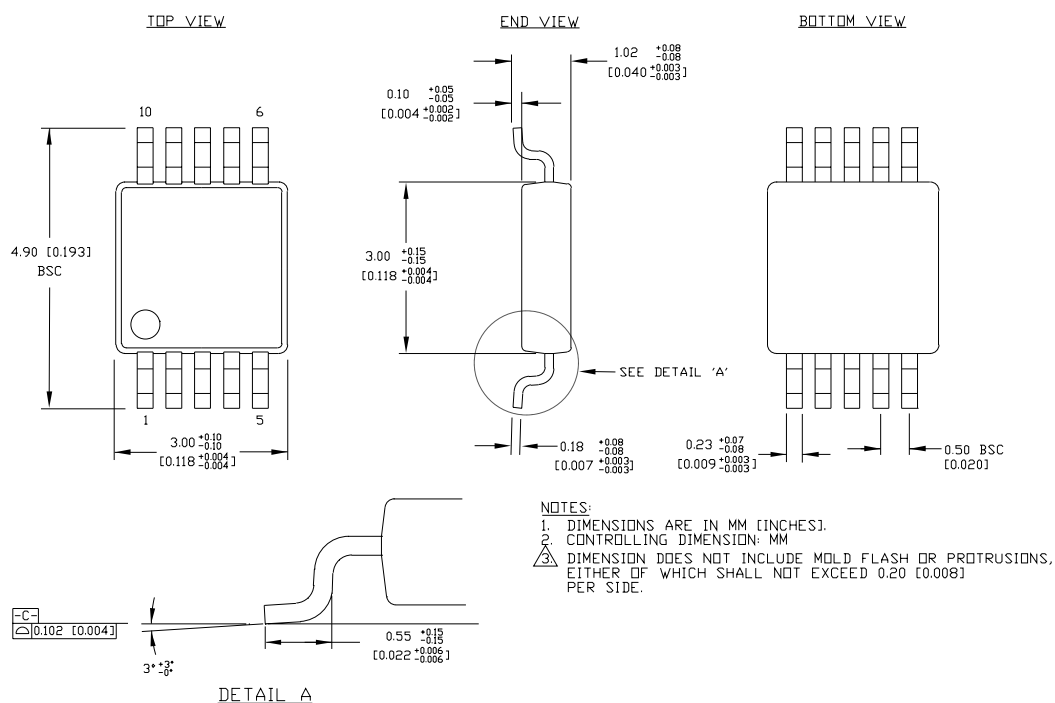
TIMING DIAGRAM

8-PIN MSOP (K8-1)



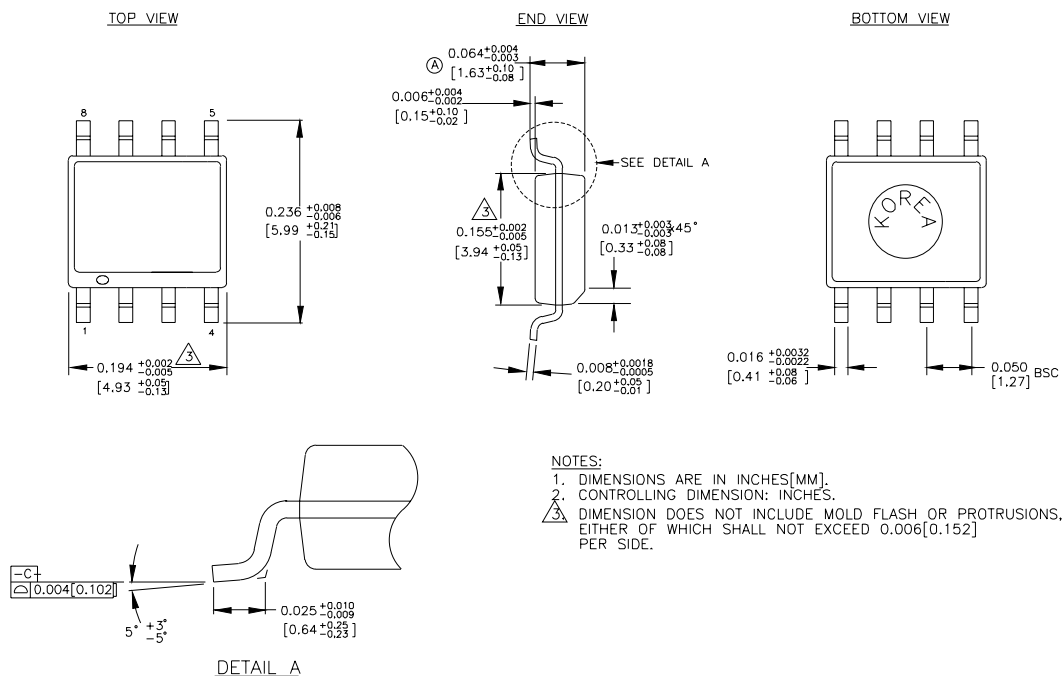
Rev. 01

10-PIN MSOP (K10-1)

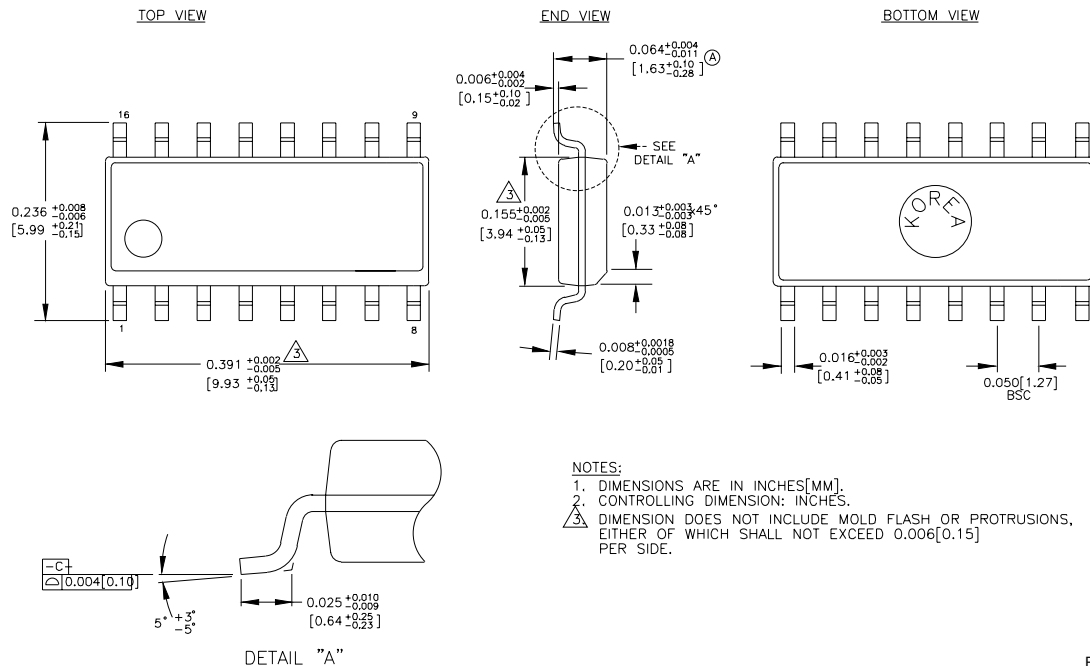


Rev. 00

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



Rev. 03

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

Rev. 02

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