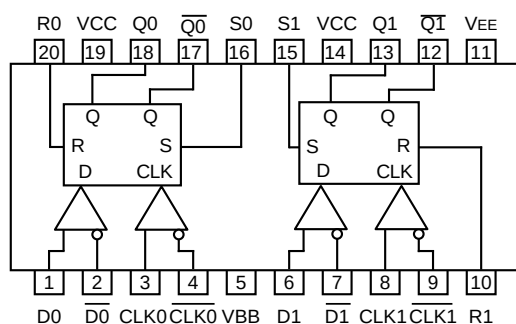


PACKAGE/ORDERING INFORMATION**Ordering Information⁽¹⁾**

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY100EL29VZC	Z20-1	Commercial	SY100EL29VZC	Sn-Pb
SY100EL29VZCTR ⁽²⁾	Z20-1	Commercial	SY100EL29VZC	Sn-Pb
SY100EL29VZI	Z20-1	Industrial	SY100EL29VZI	Sn-Pb
SY100EL29VZITR ⁽²⁾	Z20-1	Industrial	SY100EL29VZI	Sn-Pb
SY100EL29VZG ⁽³⁾	Z20-1	Industrial	SY100EL29VZG with Pb-Free bar-line indicator	Pb-Free NiPdAu
SY100EL29VZGTR ^(2, 3)	Z20-1	Industrial	SY100EL29VZG 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.

**20-Pin Wide SOIC (Z20-1)**

ABSOLUTE MAXIMUM RATINGS⁽¹⁾

Symbol	Rating	Value	Unit
V_{EE}	Power Supply ($V_{CC} = 0V$)	-8.0 to 0	VDC
$V_{IN}^{(3)}$	Input Voltage ($V_{CC} = 0V$)	0 to -6.0	VDC
I_{OUT}	Output Current -Continuous -Surge	50 100	mA
T_{LEAD}	Lead Temperature (soldering, 20sec.)	+260	°C
T_A	Operating Temperature Range	-40 to +85	°C
V_{EE}	Operating Range ^{(1),(2)}	-5.7 to -3.0	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: 100EL29V Series: -3.0V to -5.5V.
3. In PECL mode operation, $V_I(\text{Max}) = V_{CC}$.

DC ELECTRICAL CHARACTERISTICS

$V_{EE} = -3.0V$ to $+5.5V$; $V_{CC} = \text{GND}$

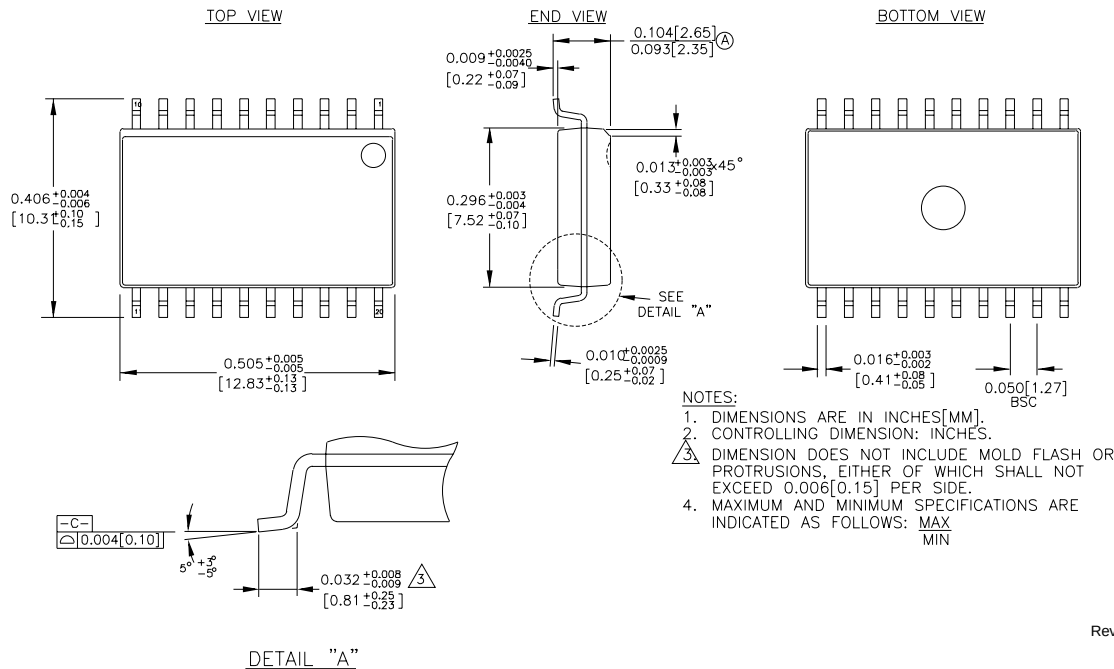
Symbol	Parameter	$T_A = -40^\circ\text{C}$		$T_A = 0^\circ\text{C}$		$T_A = +25^\circ\text{C}$			$T_A = +85^\circ\text{C}$		Unit
		Min.	Max.	Min.	Max.	Min.	Typ.	Max.	Min.	Max.	
I_{EE}	Power Supply Current	—	50	—	50	—	30	50	—	50	mA
I_{IH}	Input HIGH Current	—	150	—	150	—	—	150	—	150	μA
I_{IL}	Input LOW Current /CLK, /Dn	0.5 -300	— —	0.5 -300	— —	0.5 -300	— —	— —	0.5 -300	— —	μA
V_{BB}	Output Reference Voltage	-1.38	-1.26	-1.38	-1.26	-1.38	—	-1.26	-1.38	-1.26	V

AC ELECTRICAL CHARACTERISTICS $V_{EE} = -3.0V$ to $+5.5V$; $V_{CC} = GND$

Symbol	Parameter	$T_A = -40^{\circ}C$		$T_A = 0^{\circ}C$		$T_A = +25^{\circ}C$			$T_A = +85^{\circ}C$		Unit
		Min.	Max.	Min.	Max.	Min.	Typ.	Max.	Min.	Max.	
f_{MAX}	Max. Toggle Frequency	1.1	—	1.1	—	1.1	—	—	1.1	—	GHz
t_{PD}	Propagation Delay CLK to Output S, R	480 450	680 670	490 450	690 670	500 450	— —	700 670	520 450	720 670	ps
t_S	Set-Up Time, D	200	—	200	—	200	—	—	200	—	ps
t_H	Hold Time, D	150	—	150	—	150	—	—	150	—	ps
t_{RR}	Reset Recovery Time	300	—	300	—	300	—	—	300	—	ps
t_{PW}	Minimum Pulse Width CLK, Set, Reset	400	—	400	—	400	—	—	400	—	ps
V_{CMR}	Common Mode Range ⁽¹⁾ <500mV ≥500mV	-2.0 -1.8	-0.4 -0.4	-2.1 -1.9	-0.4 -0.4	-2.1 -1.9	— —	-0.4 -0.4	-2.1 -1.9	-0.4 -0.4	V
$V_{PP(AC)}$	Minimum Input Swing ⁽²⁾	150	—	150	—	150	—	—	150	—	mV
t_r t_f	Output Rise/Fall Time Q (20–80%)	280	550	280	550	280	330	550	280	550	ps

Notes:

- V_{CMR} is referenced to the most positive side of the differential input signal. Normal operation is obtained when the input signals are within the V_{CMR} range and the input swing is greater than $V_{PP}(\text{Min.})$ and $<1V$. The lower end of the V_{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 $V_{CMR}(\text{Min})$ will be fixed at $3.3V - |V_{CMR}(\text{Min})|$.
- Minimum input swing for which AC parameters are guaranteed.

20-PIN SOIC .300" WIDE (Z20-1)

Rev. 03

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