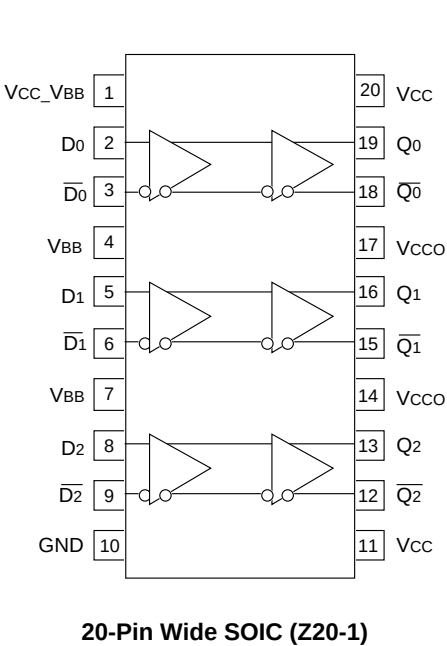


PACKAGE/ORDERING INFORMATION



Ordering Information⁽¹⁾

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY100EL92ZC	Z20-1	Commercial	SY100EL92ZC	Sn-Pb
SY100EL92ZCTR ⁽²⁾	Z20-1	Commercial	SY100EL92ZC	Sn-Pb
SY100EL92ZI	Z20-1	Industrial	SY100EL92ZI	Sn-Pb
SY100EL92ZITR ⁽²⁾	Z20-1	Industrial	SY100EL92ZI	Sn-Pb
SY100EL92ZG ⁽³⁾	Z20-1	Industrial	SY100EL92ZG with Pb-Free bar-line indicator	NiPdAu Pb-Free
SY100EL92ZGTR ^(2, 3)	Z20-1	Industrial	SY100EL92ZG with Pb-Free bar-line indicator	NiPdAu Pb-Free

- 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.

PECL INPUT DC ELECTRICAL CHARACTERISTICS

$V_{CC_VBB} = V_{CC} = +4.5V$ to $+5.5V$; $V_{CCO} = +3.0V$ to $+3.8V$

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.	
V _{CC}	Power Supply Voltage	4.5	—	5.5	4.5	—	5.5	4.5	—	5.5	4.5	—	5.5	V
V _{IH}	Input HIGH Voltage ⁽¹⁾	3.835	—	4.120	3.835	—	4.120	3.835	—	4.120	3.835	—	4.120	V
V _{IL}	Input LOW Voltage ⁽¹⁾	3.190	—	3.515	3.190	—	3.525	3.190	—	3.525	3.190	—	3.525	V
V _{PP}	Minimum Peak-to-Peak Input	150	—	—	150	—	—	150	—	—	150	—	—	mV
I _{IH}	Input HIGH Current	—	—	150	—	—	150	—	—	150	—	—	150	μA
I _{IL}	Input LOW Current $\frac{Dn}{Dn}$	0.5 -600	— —	— —	0.5 -600	— —	— —	0.5 -600	— —	— —	0.5 -600	— —	— —	μA
V _B	Output Reference ⁽¹⁾	3.620	—	3.740	3.620	—	3.740	3.620	—	3.740	3.620	—	3.740	V
I _{CC}	Power Supply Current	—	—	12	—	—	12	—	8.0	12	—	—	12	mA

Note:

1. These levels are for $V_{CC_VBB} = 5.0V$. Level specifications will vary 1:1 with V_{CC_VBB} .

LVPECL OUTPUT DC ELECTRICAL CHARACTERISTICS

$V_{CC_VBB} = V_{CC} = +4.5V$ to $+5.5V$; $V_{CCO} = +3.0V$ to $+3.8V$

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.	
V _{CCO}	Power Supply Voltage	3.0	—	3.8	3.0	—	3.8	3.0	3.3	3.8	3.0	—	3.8	V
V _{OH}	Output HIGH Voltage ⁽¹⁾	2.215	—	2.420	2.275	—	2.420	2.275	2.350	2.420	2.275	—	2.420	V
V _{OL}	Output LOW Voltage ⁽¹⁾	1.470	—	1.745	1.490	—	1.680	1.490	1.600	1.680	1.490	—	1.680	V
I _{CCO}	Power Supply Current	—	—	20	—	—	20	—	15	20	—	—	21	mA

Note:

1. These levels are for $V_{CCO} = 3.3V$. Level specifications will vary 1:1 with V_{CCO} .

LVPECL INPUT DC ELECTRICAL CHARACTERISTICS

$V_{CC_VBB} = +3.0V$ to $+3.8V$ ⁽¹⁾; $V_{CC} = V_{CCO} = +4.5V$ to $+5.5V$

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.	
V _{CC}	Power Supply Voltage	4.5	—	5.5	4.5	—	5.5	4.5	—	5.5	4.5	—	5.5	V
V _{IH}	Input HIGH Voltage ⁽²⁾	2.135	—	2.420	2.135	—	2.420	2.135	—	2.420	2.135	—	2.420	V
V _{IL}	Input LOW Voltage ⁽²⁾	1.490	—	1.825	1.490	—	1.825	1.490	—	1.825	1.490	—	1.825	V
V _{PP}	Minimum Peak-to-Peak Input	150	—	—	150	—	—	150	—	—	150	—	—	mV
I _{IH}	Input HIGH Current	—	—	150	—	—	150	—	—	150	—	—	150	μA
I _{IL}	Input LOW Current $\frac{Dn}{Dn}$	0.5 -600	— —	— —	0.5 -600	— —	— —	0.5 -600	— —	— —	0.5 -600	— —	— —	μA
V _B	Output Reference ⁽²⁾	1.92	—	2.04	1.92	—	2.04	1.92	—	2.04	1.92	—	2.04	V
I _{CC}	Power Supply Current	—	—	12	—	—	12	—	8.0	12	—	—	12	mA

Notes:

- $V_{CC_VBB} = 3.3V$ is only required for single-ended LVPECL input. For differential LVPECL input, V_{CC_VBB} can be either 3.3V or 5V.
- These levels are for $V_{CC_VBB} = 3.3V$. Level specifications will vary 1:1 with V_{CC_VBB} .

PECL OUTPUT DC ELECTRICAL CHARACTERISTICS

$V_{CC_VBB} = +3.0V$ to $+3.8V$; $V_{CC} = V_{CCO} = +4.5V$ to $+5.5V$

Symbol	Parameter	$T_A = -40^{\circ}C$			$T_A = 0^{\circ}C$			$T_A = +25^{\circ}C$			$T_A = +85^{\circ}C$			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
V_{CCO}	Power Supply Voltage	4.5	—	5.5	4.5	—	5.5	4.5	—	5.5	4.5	—	5.5	V
V_{OH}	Output HIGH Voltage ⁽¹⁾	3.915	—	4.120	3.975	—	4.120	3.975	—	4.120	3.975	—	4.120	V
V_{OL}	Output LOW Voltage ⁽¹⁾	3.170	—	3.445	3.190	—	3.380	3.190	—	3.380	3.190	—	3.380	V
I_{CCO}	Power Supply Current	—	—	20	—	—	20	—	15	20	—	—	21	mA

Note:

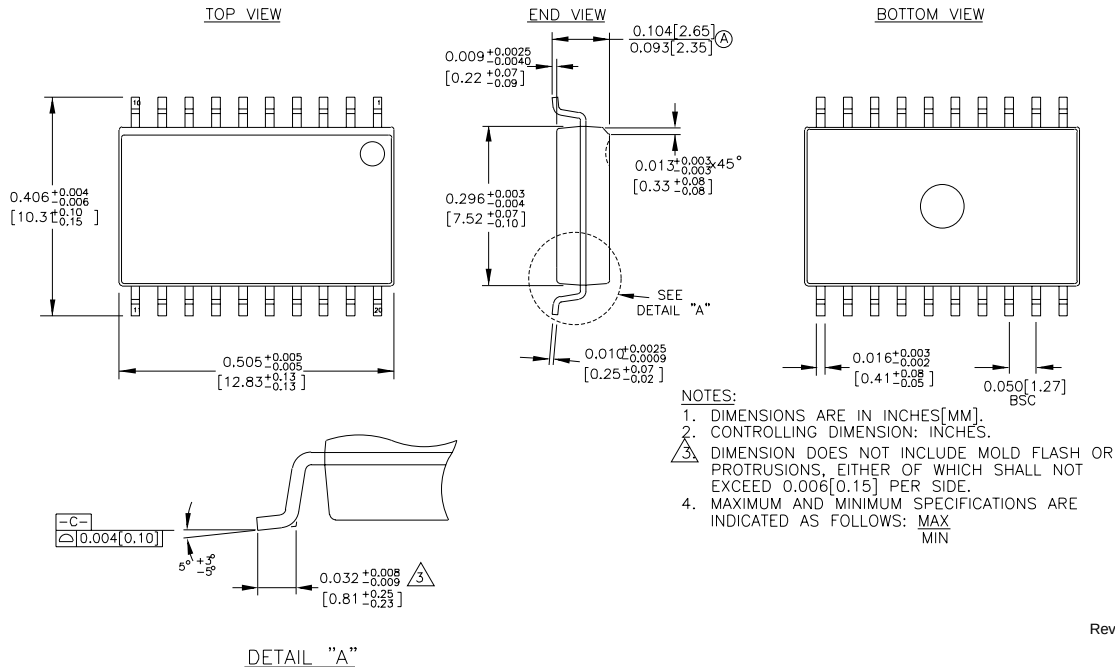
1. These levels are for $V_{CCO} = 5.0V$. Level specifications will vary 1:1 with V_{CCO} .

AC ELECTRICAL CHARACTERISTICS⁽¹⁾

Symbol	Parameter	$T_A = -40^{\circ}C$			$T_A = 0^{\circ}C$			$T_A = +25^{\circ}C$			$T_A = +85^{\circ}C$			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
t_{PD}	Propagation Delay D to Q Diff. S.E.	430 410	520 540	630 710	430 410	520 540	630 710	430 410	520 540	630 710	430 410	520 540	630 710	ps
t_{skew}	Within-Device Skew Output-to-Output ⁽²⁾ Part-to-Part (Diff.) ⁽²⁾ Duty Cycle (Diff.) ⁽³⁾	— — —	20 20 25	100 200 —	— — —	20 20 25	100 200 —	— — —	20 20 25	100 200 —	— — —	20 20 25	100 200 —	ps
V_{PP}	Minimum Input Swing ⁽⁴⁾	150	—	—	150	—	—	150	—	—	150	—	—	mV
V_{CMR}	Common Mode Range ⁽⁵⁾ $V_{PP} < 500mV$ $V_{PP} \geq 500mV$	1.3 1.5	— —	$V_{CC}-0.2$ $V_{CC}-0.2$	1.2 1.4	— —	$V_{CC}-0.2$ $V_{CC}-0.2$	1.2 1.4	— —	$V_{CC}-0.2$ $V_{CC}-0.2$	1.2 1.4	— —	$V_{CC}-0.2$ $V_{CC}-0.2$	V
t_r t_f	Output Rise/Fall Times Q (20% to 80%)	320	—	580	320	—	580	320	—	580	320	—	580	ps

Notes:

1. Power supply requirements applies as indicated in the DC electrical characteristics tables.
2. Skew is measured between outputs under identical transitions.
3. Duty cycle skew is the difference between a TPLH and TPHL propagation delay through a device Common Mode Range.
4. Minimum input swing for which AC parameters are guaranteed. The device has a DC gain of ~ 40 .
5. 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.

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

Rev. 03

MICREL, INC. 2180 FORTUNE DRIVE SAN JOSE, CA 95131 USATEL + 1 (408) 944-0800 FAX + 1 (408) 474-1000 WEB <http://www.micrel.com>

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