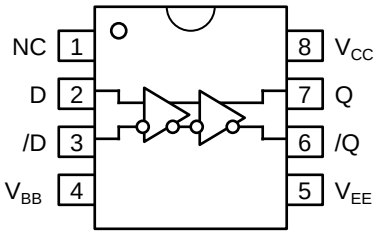
- **3.3V and 5V power supply options**
- **Maximum frequency > 3.0GHz**
- **Internal 75KΩ input pull-down resistors**
- **Faster version of SY100EL16V**
- **100K ECL compatible I/O**
- **Improved output waveform characteristics**
- **Available in 8-pin (3mm) MSOP and SOIC package**

The SY88927V is a 2.5Gbps high-speed differential receiver. The device is functionally equivalent to the EL16V devices, with higher performance capabilities. With output transition times significantly faster than the EL16V, the SY88927V is ideally suited for interfacing with high-frequency sources.

The SY88927V provides a V_{BB} output for either single-ended use or as a DC bias for AC coupling to the device. The V_{BB} pin should be used only as a bias for the SY88927V as its current sink/source capability is limited. Whenever used, the V_{BB} pin should be bypassed to the most positive supply via a 0.01µF capacitor.

Under open input conditions (pulled to V_{EE}), internal input clamps will force the Q output LOW.

Pin	Function
D	Data Inputs
Q	Data Outputs
V_{BB}	Reference Voltage Output



10-Pin MSOP (K10-1)

Ordering Information

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY88927VKC	K8-1	Commercial	927V	Sn-Pb
SY88927VKCTR(1)	K8-1	Commercial	927V	Sn-Pb
SY88927VZC	Z8-1	Commercial	927V	Sn-Pb
SY88927VZCTR(1)	Z8-1	Commercial	927V	Sn-Pb
SY88927VKG(2)	K8-1	Industrial	927V with Pb-Free bar-line indicator	Pb-Free NiPdAu
SY88927VKGTR(1,2)	K8-1	Industrial	927V with Pb-Free bar-line indicator	Pb-Free NiPdAu
SY88927VZG(2)	Z8-1	Industrial	927V with Pb-Free bar-line indicator	Pb-Free NiPdAu
SY88927VZGTR(1,2)	Z8-1	Industrial	927V with Pb-Free bar-line indicator	Pb-Free NiPdAu

Note:

1. Tape and Reel.
2. NiPdAu Pb-Free package recommended for new designs.

Symbol	Rating		Value	Unit
V_{EE}	Power Supply Voltage		–8.0 to 0	V
V_I	Input Voltage		0 to –6.0	V
I_{OUT}	Output Current	–Continuous –Surge	50 100	mA
T_A	Operating Temperature Range		–40 to +85	°C
T_{LEAD}	Lead Temperature (Soldering, 20 sec.)		+260	°C
T_{store}	Storage Temperature Range		–65 to +150	°C

Note:

1. Permanent device damage may occur if absolute maximum ratings are exceeded. This is a stress rating only and functional operation is not implied at conditions other than those detailed in the operational sections of this data sheet. Exposure to absolute maximum ratlng conditions for extended periods may affect device reliability.

V_{EE} = –3.0V to –5.5V; 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	—	—	40	—	—	40	—	35	42	—	—	48	mA
V_{BB}	Output Reference Voltage	–1.38	–1.30	–1.26	–1.38	–1.31	–1.26	–1.38	–1.32	–1.26	–1.38	–1.33	–1.26	V
I_{IH}	Input HIGH Current	—	—	150	—	—	150	—	—	150	—	—	150	µA

V_{EE} = –3.0V to –5.5V; V_{CC} = GND

Symbol	Parameter	T_A = –40°C			T_A = 0°C to +85°C			Unit	Conditions	
		Min.	Typ.	Max.	Min.	Typ.	Max.			
V_{OH} V_{OL}	Output HIGH Voltage Output LOW Voltage	–1085 –1830	–1005 –1695	–880 –1555	–1025 –1810	–955 –1705	–880 –1620	mV	V_{IN} = V_{IH}(Max) or V_{IL}(Min)	Loading with 50Ω to –2.0V
V_{OHA} V_{OLA}	Output HIGH Voltage Output LOW Voltage	–1095 —	— —	— –1555	–1035 —	— —	— –1610	mV	V_{IN} = V_{IH}(Min) or V_{IL}(Max)	
V_{IH}	Input HIGH Voltage(2)	–1165	—	–880	–1165	—	–880	mV		
V_{IL}	Input LOW Voltage(3)	–1810	—	–1475	–1810	—	–1475	mV		
I_{IL}	Input LOW Current	0.5	—	—	0.5	—	—	µA	V_{IN} = V_{IL}(Min)	

Notes:

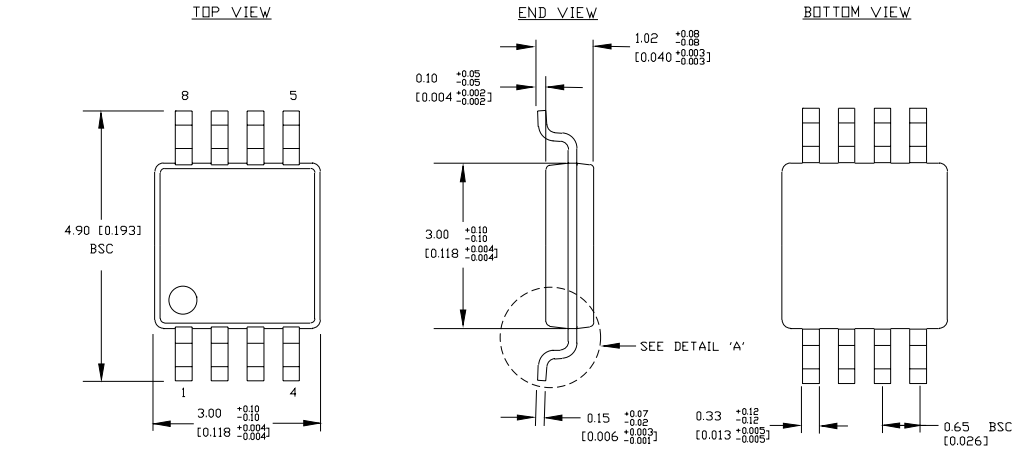
1. This table replaces the three tables traditionally seen in ECL 100K data books. Outputs are terminated through a 50Ω resistor to –2.0V except where otherwise specified on the individual data sheets.
2. Guaranteed HIGH Signal for all inputs.
3. Guaranteed LOW Signal for all inputs.

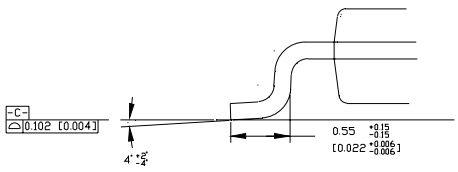
V_{EE} = –3.0V to –5.5V; V_{CC} = GND

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_{PLH} t_{PHL}	Propagation Delay to Output D (Diff) D (SE)	150 —	240 —	150 —	240 —	150 —	190 —	240 —	150 —	280 —	ps
t_{skew}	Duty Cycle Skew(1) (Diff)	—	—	—	20	—	5	20	—	20	ps
V_{CMR}	Common Mode Range(2)	V_{EE}+2	V_{CC}–0.4	V_{EE}+2	V_{CC}–0.4	V_{EE}+2	—	V_{CC}–0.4	V_{EE}+2	V_{CC}–0.4	V
V_{PP}	Input Voltage Range (Diff)	150	1200	150	1200	150	800	1200	150	1200	mV
t_r t_f	Output Rise/Fall Times Q(3) (20% to 80%)	—	175	—	175	—	105	175	—	175	ps

NOTES:

1. Duty cycle skew is the difference between a t_{PLH} and t_{PHL} propagation delay through a device.
2. 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}.
3. V_{ID} > 150mV.





DETAIL A

NOTES:
1. DIMENSIONS ARE IN MM [INCHES].
2. CONTROLLING DIMENSION: MM
3. DIMENSION DOES NOT INCLUDE MOLD FLASH OR PROTRUSIONS, EITHER OF WHICH SHALL NOT EXCEED 0.20 [0.008] PER SIDE.

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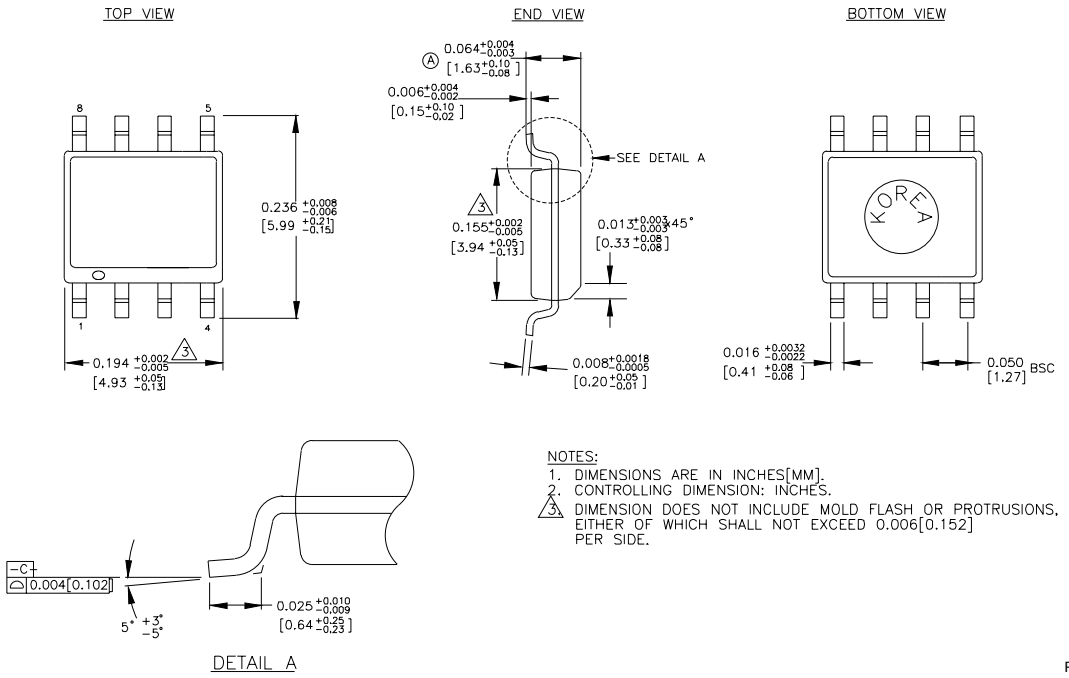

NOTES:
1. DIMENSIONS ARE IN INCHES[MM].
2. CONTROLLING DIMENSION: INCHES.
3. DIMENSION DOES NOT INCLUDE MOLD FLASH OR PROTRUSIONS, EITHER OF WHICH SHALL NOT EXCEED 0.006[0.152] PER SIDE.

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