SK10/100EL12W

Low Impedance Driver

SEMTECH

HIGH-PERFORMANCE PRODUCTS

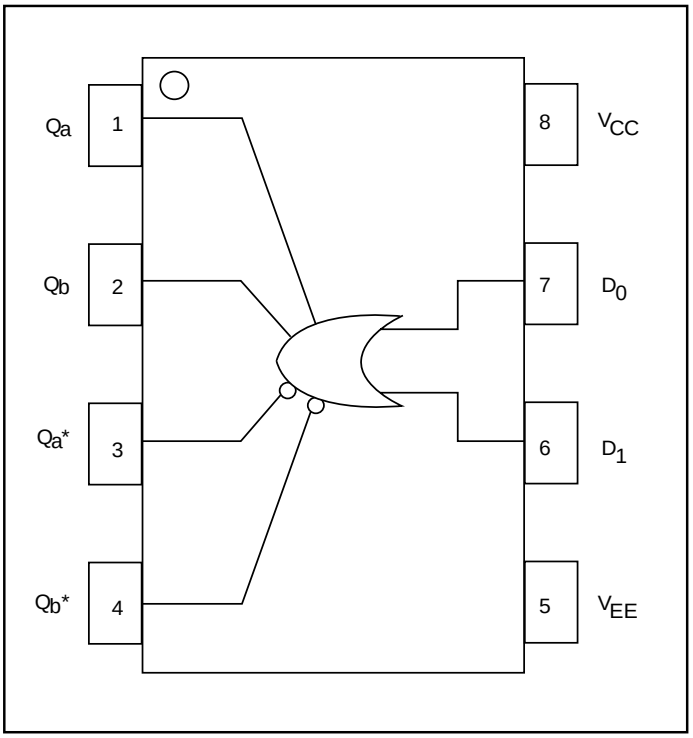
Description

The SK10/100EL12W is a low impedance driver buffer. With two pairs of OR/NOR outputs, the device is ideally suited for high drive applications such as memory addressing. The SK10/100EL12W is fully compatible with MC10/100EL12 and MC10/100LVEL12. With significantly fast propagation delay and output transition time, the EL12W is ideally suited for those applications which require the ultimate in AC performance.

Features

- Extended Supply Voltage Range: (VEE = –5.5V to –3.0V, VCC = 0V) or (VCC = + 3.0V to +5.5V, VEE=0V)
- High Bandwidth Output Transition
- 445 ps Propagation Delay
- 75KΩ Internal Input Pulldown Resistors
- Fully Compatible with MC10/100EL12 and MC10/100LVEL12
- ESD Protection of >4000V
- Industrial Temperature Range: –40°C to 85°C
- Available in 8-Pin SOIC (150 mils) Package

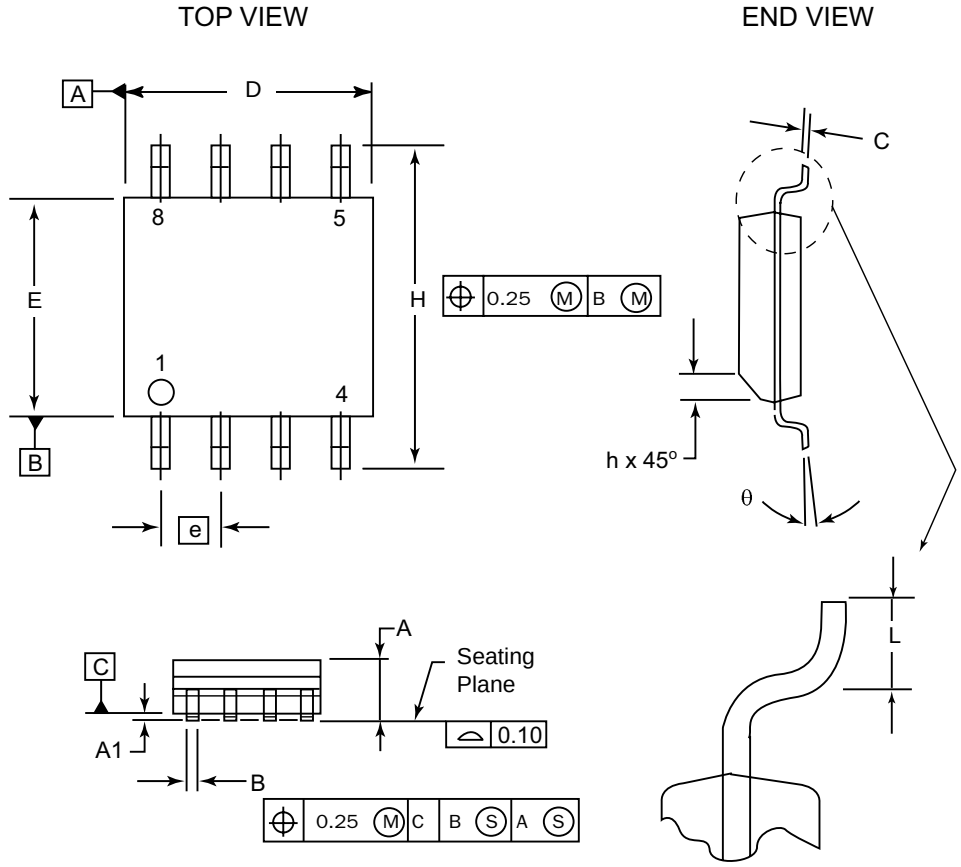
Functional Block Diagram



PIN Names

Pin	Function
D_0, D_1	Data Inputs
Q_a, Q_a*, Q_b, Q_b*	Differential data Outputs

8 Pin SOIC Package



DIM	MILLIMETERS	
	MIN	MAX
A	1.35	1.75
A1	0.10	0.25
B	0.35	0.49
C	0.19	0.25
D	4.80	5.00
E	3.80	4.00
e	1.27 BSC	
H	5.80	6.20
h	0.25	0.50
L	0.40	1.25
θ	0°	7°

NOTES:
1. Dimensions are in millimeters.
2. Dimensions D and E do no include mold protrusion.
3. Maximum mold protrusion 0.15 per side.
4. Dimension B does not include Dambar protrusion. Allowable Dambar protrusion shall be 0.127 total in excess of the B dimension at maximum material condition.

Absolute Maximum Ratings*

Symbol	Parameter	Value	Unit
V_{EE}	Power Supply (V_{CC} = 0V)	-6.0 to 0	V
VCC	Power Supply (V_{EE} = 0V)	+6.0 to 0	V
V_I	Input Voltage (V_{CC} = 0V, V_I not more negative than V_{EE})	-6.0 to 0	V
V_I	Input Voltage (V_{EE} = 0V, V_I not more positive than V_{CC})	+6.0 to 0	V
I_{OUT}	Output Current Continuous Surge	 50 100	 mA mA
T_A	Operating Temperature Range	-40 to +85	°C
T_{STORE}	Storage Temperature Range	-65 to +150	°C
θ_{JA} for SOIC	Thermal Resistance (Junction-to-Ambient) Still Air 500 lfpm	 153.7 130	 °C/W °C/W
θ_{JC} for SOIC	Thermal Resistance (Junction-to-Case)	41.2	°C/W
T_{SOL}	Solder Temperature (<2 to 3 seconds: 245°C desired)	265	°C

* Maximum Ratings are those values beyond which damage to the device may occur.

DC Characteristics

SK10/100EL12W DC Electrical Characteristics *(Notes 1, 2)*

(V_{CC} – V_{EE} = 3.0 to 5.5V; VOUT loaded with 50Ω to V_{CC} – 2.0V)

Symbol	Characteristic	TA = –40°C			TA = 0°C			TA = +25°C			TA = +85°C			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
I_{IH}	Input High Current D0, D1			250			250			250			250	µA
I_{EE}	Power Supply Current 10EL 100EL			 13 22			 13 22			 13 22			 13 22	 mA mA
V_{CC} – V_{EE}	Power Supply Voltage	3.0		5.5	3.0		5.5	3.0		5.5	3.0		5.5	V

AC Characteristics

SK10/100EL12W AC Electrical Characteristics *(Notes 1, 2)*

(V_{CC} – V_{EE} = 3.0 to 5.5V; VOUT loaded with 50Ω to V_{CC} – 2.0V)

Symbol	Characteristic	TA = –40°C			TA = 0°C			TA = +25°C			TA = +85°C			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
t_{PLH} t_{PHL}	Input to Output Delay Q_a, Q_a*, Q_b, Q_b*(Diff)	348	389	430	349	386	423	343	383	422	317	371	425	ps
t_r , t_f	Output Rise/Fall Times (20% to 80%) Q_a, Q_a*, Q_b, Q_b*	228	334	441	231	342	452	233	346	458	238	355	472	ps

Notes:

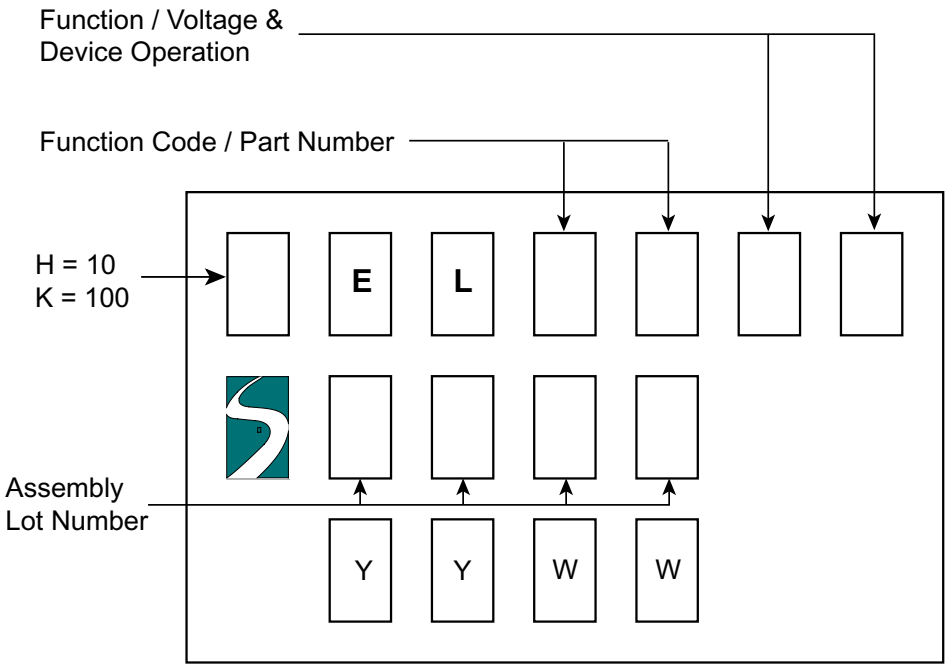
1. 10EL circuits are designed to meet the DC specifications shown in the table after thermal equilibrium has been established. The circuit is in a test socket or mounted on a printed circuit board and transverse airflow greater than 500 lfpm is maintained. Outputs are terminated through a 50Ω resistor to -2.0V except where otherwise specified on the individual data sheets.
2. 100K circuits are designed to meet the DC specifications shown in the table where transverse airflow greater than 500 lfpm is maintained.
3. For standard ECL DC specifications, refer to the ECL Logic Family Standard DC Specifications Data Sheet.
4. For part ordering descriptions, see HPP Part Ordering Information Data Sheet.

Ordering Information

Ordering Code	Package ID	Temperature Range
SK10EL12WD	8-SOIC	Industrial
SK10EL12WDT	8-SOIC	Industrial
SK100EL12WD	8-SOIC	Industrial
SK100EL12WDT	8-SOIC	Industrial
SK10EL12WU	Die	
SK100EL12WU	Die	

Marking Information

8 PIN SOIC PACKAGE



YY: Last two digits of the Year
WW: Working Week

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