

HIGH-PERFORMANCE PRODUCTS

Description

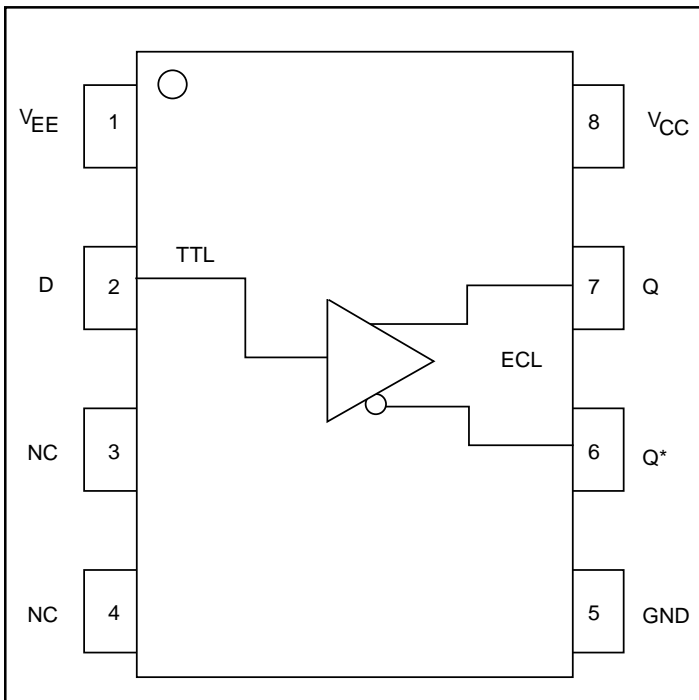
The SK100ELT24W is a single TTL to Differential ECL translator. Because ECL levels are used, a +3.3/5.0V, -3.3/-5.0V and ground power supplies are required. The SK100ELT24 is functionally compatible with MC100ELT24.

The small outline, 8 lead SOIC and MSOP packages, low skew, and single gate of the SK100ELT24W makes it ideal for applications which require translation of clock and data signals.

Features

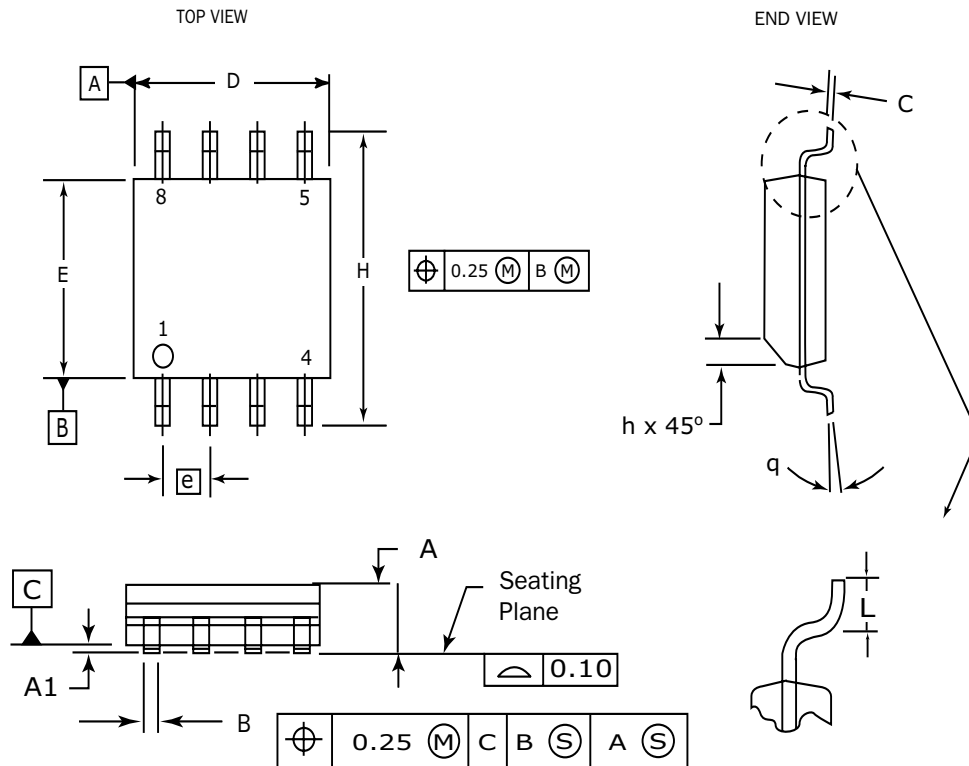
- Extended Supply Voltage Range ($V_{EE} = -5.5V$ to $-3.0V$, and $V_{CC} = +3.0V$ to $5.5V$)
- High Bandwidth Output Transition
- 750 Ps Propagation Delay
- PNP TTL Input for Minimal Loading
- Functionally Compatible with MC100ELT24
- ESD Protection of $>4000V$
- Industrial Temperature Range: $0^{\circ}C$ to $85^{\circ}C$
- Available in both 8 lead SOIC (150 mils) and MSOP (3mm x 3mm) Packages
- Flammability Rate: UL-94 code V-0.
- Moisture Sensitivity: Level 1.

Functional Block Diagram



Pin Names

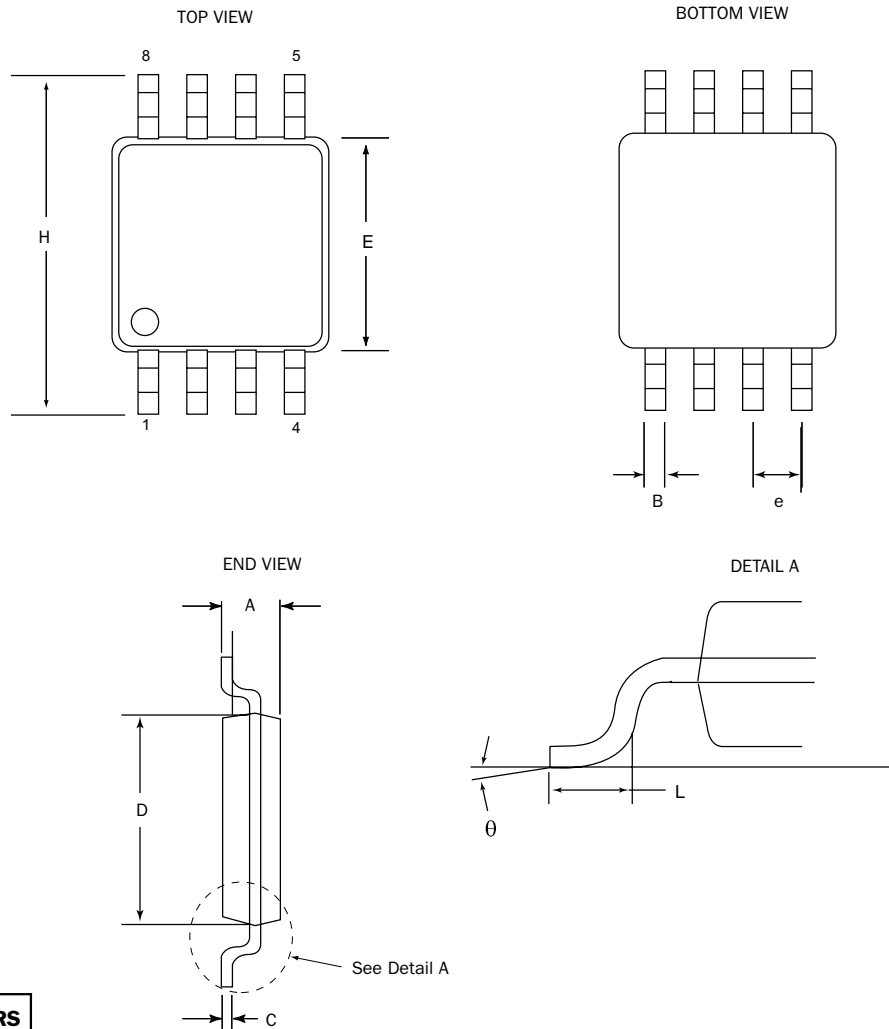
Pin	Function
D	TTL Input
Q, Q*	Differential ECL Outputs
V_{CC}	Positive Power Supply
V_{EE}	Negative Power Supply
GND	Ground
NC	No Connect

8 Pin SOIC Package


DIM	MILLIMETERS	
	MIN	MAX
A	1.35	1.75
A1	0.10	0.25
B	0.33	0.51
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	1.27
θ	0°	8°

NOTES:

1. Dimensions are in millimeters.
2. Dimensions D and E do not 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.

8 Pin MSOP Package


DIM	MILLIMETERS	
	MIN	MAX
A	0.94	1.1
B	0.21	0.45
C	0.13	0.22
D	2.90	3.10
E	2.90	3.10
e	0.65 BSC	
H	4.7	5.1
L	0.4	0.7
θ	0°	6°

NOTES:

1. Dimensions are in mm.
2. Controlling dimension: mm
3. Dimension does not include mold flash or protrusions, either of which shall not exceed 0.20.

HIGH-PERFORMANCE PRODUCTS
DC Characteristics
SK100ELT24W TTL Input DC Electrical Characteristics (Note 1)
 $(V_{CC} = +3.0V \text{ to } +5.5V \text{ and } V_{EE} = -3.0V \text{ to } -5.5V; V_{OUT} \text{ Loaded } 50\Omega \text{ to } V_{CC} - 2.0V; T_A = 0^\circ C \text{ to } +85^\circ C)$

Symbol	Characteristic	Min	Typ	Max	Unit	Condition
I_{IH}	Input HIGH Current	-20		20	μA	$V_{IN} = 2.7V$
I_{IHH}	Input HIGH Current			100	μA	$V_{IN} = V_{CC}$
I_{IL}	Input LOW Current	-20		20	mA	$V_{IN} = 0.5V$
V_{IK}	Input Clamp Voltage	-1.2			V	$I_{IN} = -18 \text{ mA}$
V_{IH}	Input HIGH Voltage	2.0			V	
V_{IL}	Input LOW Voltage			0.8	V	

S100ELT24W ECL Output DC Electrical Characteristics (Note 1)
 $(V_{CC} = +3.0V \text{ to } +5.5V \text{ and } V_{EE} = -3.0V \text{ to } -5.5V; V_{OUT} \text{ Loaded } 50\Omega \text{ to } V_{CC} - 2.0V)$

Symbol	Characteristic	$T_A = 0^\circ C$			$T_A = 25^\circ C$			$T_A = +85^\circ C$			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
I_{EE}	Power Supply Current 100EL			21			21			21	mA
I_{CC}	Power Supply Current			7			7			7	mA

AC Characteristics
SK100ELT24W AC Electrical Characteristics
 $(V_{CC} = +3.0V \text{ to } +5.5V \text{ and } V_{EE} = -3.0V \text{ to } -5.5V; V_{OUT} \text{ Loaded } 50\Omega \text{ to } V_{CC} - 2.0V)$

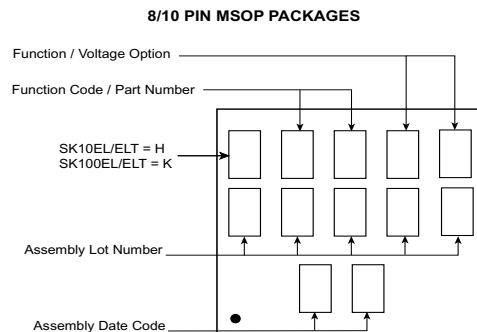
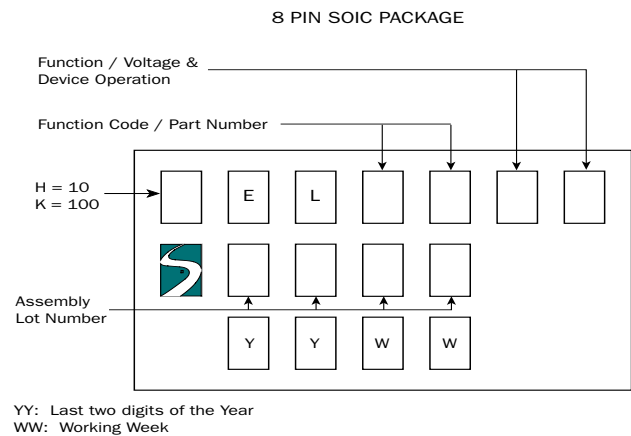
Symbol	Characteristic	$T_A = 0^\circ C$			$T_A = +25^\circ C$			$T_A = +85^\circ C$			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
f_{max}	Maximum Toggle Frequency	300			300			300			MHz
t_{PLH} t_{PHL}	Propagation Delay ²	380	550	720	400	560	720	400	575	750	ps
t_r t_f	Output Rise/Fall Times (20% – 80%)	170	285	400	170	285	400	170	285	400	ps

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AC Characteristics (continued)
Notes:

1. 100K circuits are designed to meet the DC specification shown in the table where transverse airflow greater than 500 lfpm is maintained.
2. Specifications for standard TTL input signals.
3. For part ordering description, see HPP Part Ordering Information Data Sheet.

Ordering Information

Ordering Code	Package ID
SK100ELT24WD	8-SOIC
SK100ELT24WDT	8-SOIC
SK100ELT24WMS	8-MSOP
SK100ELT24WMST	8-MSOP
SK100ELT24WU	Die

Marking Information

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