

HIGH-PERFORMANCE PRODUCTS

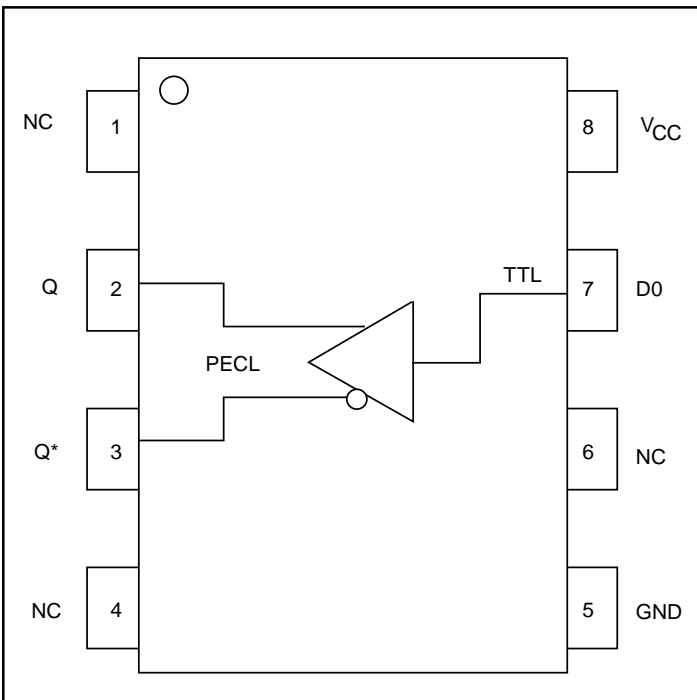
Description

The SK10/100ELT20W is a single LVTTTL / LVCMOS to LVPECL and TTL / CMOS to PECL translator. Because PECL / LVPECL levels are used, only VCC = +3.0 to +5.5V and ground are required. This device is fully compatible with MC10/100ELT20 and MC10/100LVELT20. Its small outline, 8-lead SOIC and MSOP packages, low skew, and single gate design make the ELT20W ideal for applications which require the translation of clock and data signals.

Features

- Extended Supply Voltage Range: (VCC = +3.0V to +5.5V)
- High Bandwidth Output Transition
- 650 ps Typical Propagation Delay
- Differential LVPECL / PECL Outputs
- Fully Compatible with MC10/100ELT20 and MC10/100LVELT20
- ESD Protection of >4000V
- Industrial Temperature Range: -40°C to 85°C
- Available in both 8-Pin SOIC (150 mils) and MSOP (3mm x 3mm) Packages
- Flammability Rate: UL-94 code V-0.
- Moisture Sensitivity: Level 1.

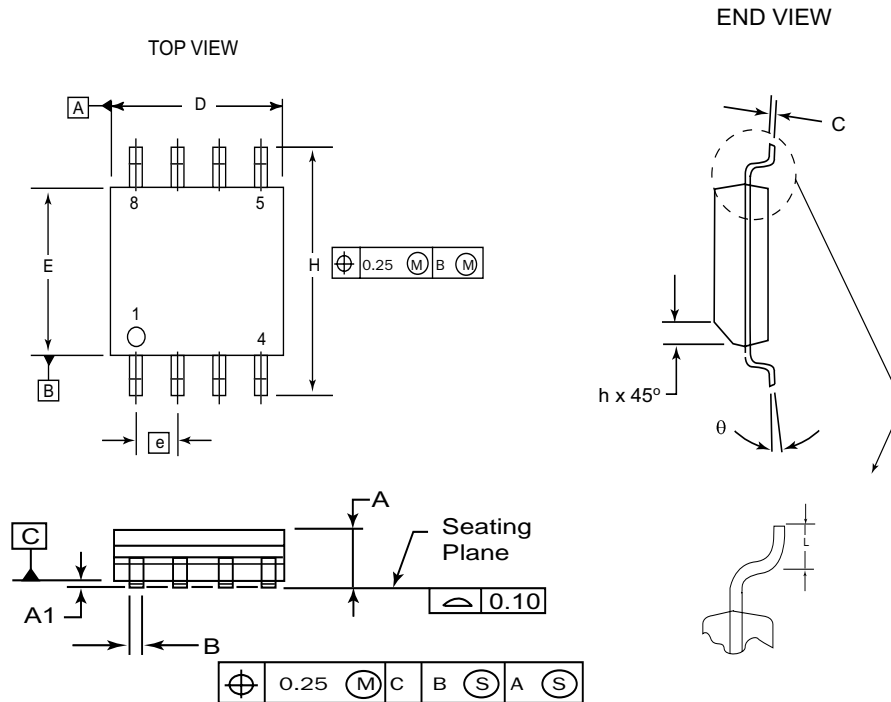
Functional Block Diagram



PIN Names

Pin	Function
DO	LVTTTL / TTL Input
Q, Q*	LVPECL / PECL Outputs
V _{CC}	+3.0 to +5.5V Positive Power Supply
GND	Ground

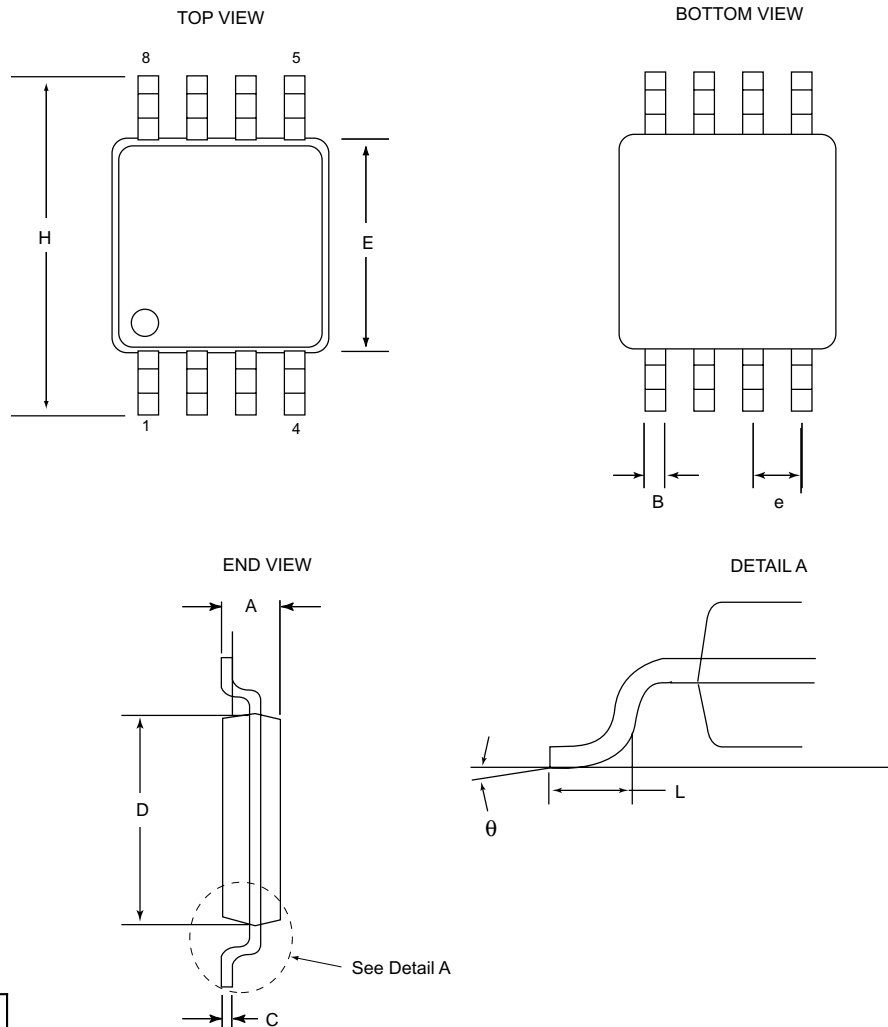
8 Pin SOIC Package



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
SK10/100ELT20W TTL Input DC Electrical Characteristics

 (V_{CC} = 3.0V to 5.5V; TA = -40°C to 85°C)

Symbol	Characteristic	Min	Typ	Max	Unit	Condition
V _{IH}	Input HIGH Voltage	2.0			V	
V _{IL}	Input LOW Voltage			0.8	V	
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	μA	V _{IN} = 0.5V
V _{IK}	Input Clamp Voltage	-1.2			V	I _{IN} = -18 mA

SK10ELT20W PECL Output DC Electrical Characteristics

 (V_{CC} = +3.0V to +5.5V; V_{OUT} Loaded 50Ω to V_{CC} - 2.0V)

Symbol	Characteristic	TA = - 40°C			TA = 0°C			TA = + 25°C			TA = + 85°C			Unit	Condition
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max		
V _{OH}	Output HIGH Voltage	3.92 2.22		4.11 2.41	3.98 2.28		4.16 2.46	4.02 2.32	4.1 2.35	4.19 2.49	4.09 2.39		4.28 2.58	V V	V _{CC} = 5V V _{CC} = 3.3V
V _{OL}	Output LOW Voltage	3.05 1.35		3.35 1.65	3.05 1.35		3.37 1.67	3.05 1.35	3.25 1.595	3.37 1.67	3.05 1.35		3.405 1.705	V V	V _{CC} = 5V V _{CC} = 3.3V
I _{CC}	Power Supply Current			13			13			13			13	mA	

SK100ELT20W PECL Output DC Electrical Characteristics

 (V_{CC} = +3.0V to +5.5V; V_{OUT} Loaded 50Ω to V_{CC} - 2.0V)

Symbol	Characteristic	TA = - 40°C		TA = 0°C		TA = + 25°C		TA = + 85°C		Unit	Condition
		Min	Max	Min	Max	Min	Max	Min	Max		
V _{OH}	Output HIGH Voltage	3.915 2.215	4.12 2.42	3.975 2.275	4.12 2.42	3.975 2.275	4.12 2.42	3.975 2.275	4.12 2.42	V V	V _{CC} = 5V V _{CC} = 3.3V
V _{OL}	Output LOW Voltage	3.17 1.47	3.445 1.745	3.19 1.49	3.38 1.68	3.19 1.49	3.38 1.68	3.19 1.49	3.38 1.68	V V	V _{CC} = 5V V _{CC} = 3.3V
I _{CC}	Power Supply Current		20		20		20		20	mA	

HIGH-PERFORMANCE PRODUCTS
AC Characteristics
SK10/100ELT20W AC Electrical Characteristics

 ($V_{CC} = +3.0V$ to $+5.5V$; V_{OUT} Loaded 50Ω to $V_{CC} - 2.0V$)

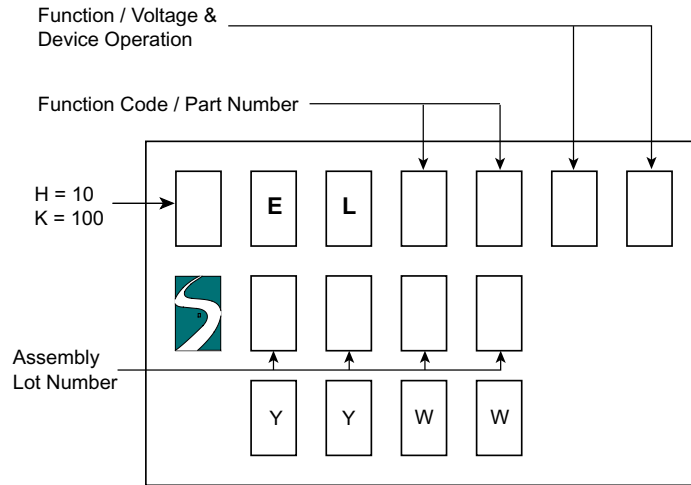
Symbol	Characteristic	TA = - 40°C			TA = 0°C			TA = + 25°C			TA = + 85°C			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
f_{max}	Maximum Input Frequency	500			500			500			500			MHz
t_{PLH} t_{PHL}	Propagation Delay ¹	345	490	630	360	470	595	360	470	575	365	450	540	ps
t_r t_f	Output Rise/Fall Times (20% – 80%)	160	210	305	165	215	320	170	220	330	175	235	350	ps

Notes:

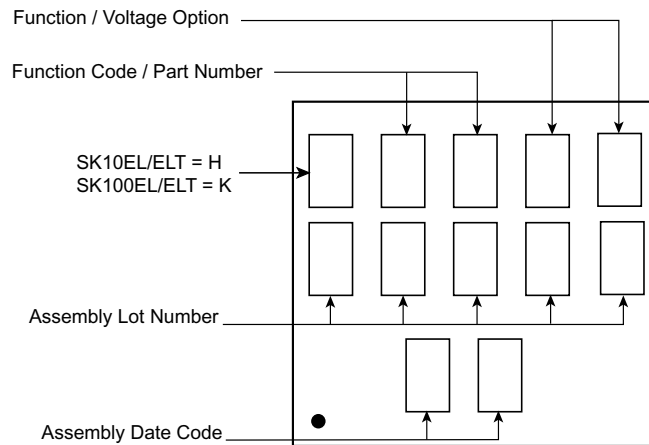
- Specifications for standard TTL input signals.
- For ordering description, see HPP Part Ordering Information Data Sheet.

Ordering Information

Ordering Code	Package ID	Temperature Range
SK10ELT20WD	8-SOIC	Industrial
SK10ELT20WDT	8-SOIC	Industrial
SK100ELT20WD	8-SOIC	Industrial
SK100ELT20WDT	8-SOIC	Industrial
SK10ELT20WMS	8-MSOP	Industrial
SK10ELT20WMST	8-MSOP	Industrial
SK100ELT20WMS	8-MSOP	Industrial
SK100ELT20WMST	8-MSOP	Industrial
SK10ELT20WU	Die	
SK100ELT20WU	Die	

HIGH-PERFORMANCE PRODUCTS
Marking Information
8 PIN SOIC PACKAGE


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

8/10 PIN MSOP PACKAGES

Contact Information

Division Headquarters
10021 Willow Creek Road
San Diego, CA 92131
Phone: (858) 695-1808
FAX: (858) 695-2633

Semtech Corporation
High-Performance Products Division

Marketing Group
1111 Comstock Street
Santa Clara, CA 95054
Phone: (408) 566-8776
FAX: (408) 727-8994