

HIGH-PERFORMANCE PRODUCTS

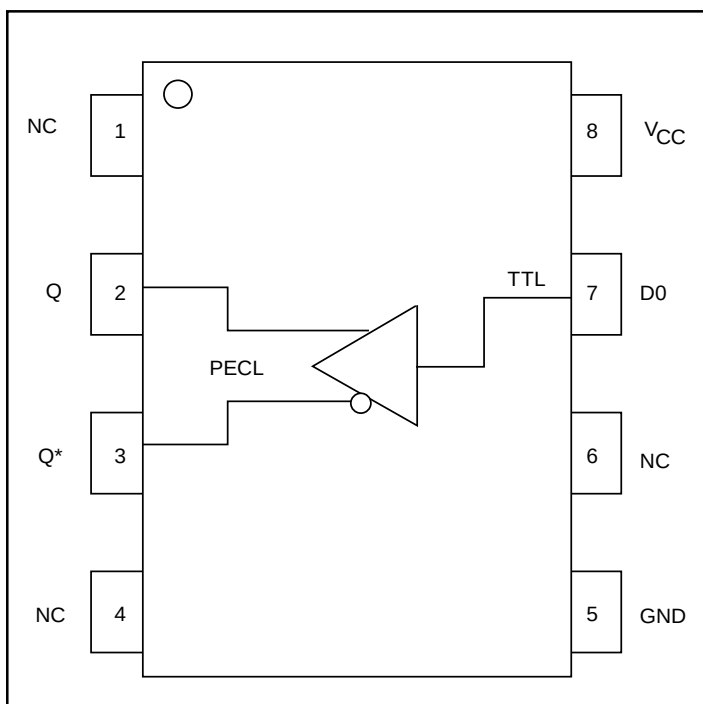
Description

The SK10/100ELT20W is a single LVTTTL to LVPECL and TTL 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

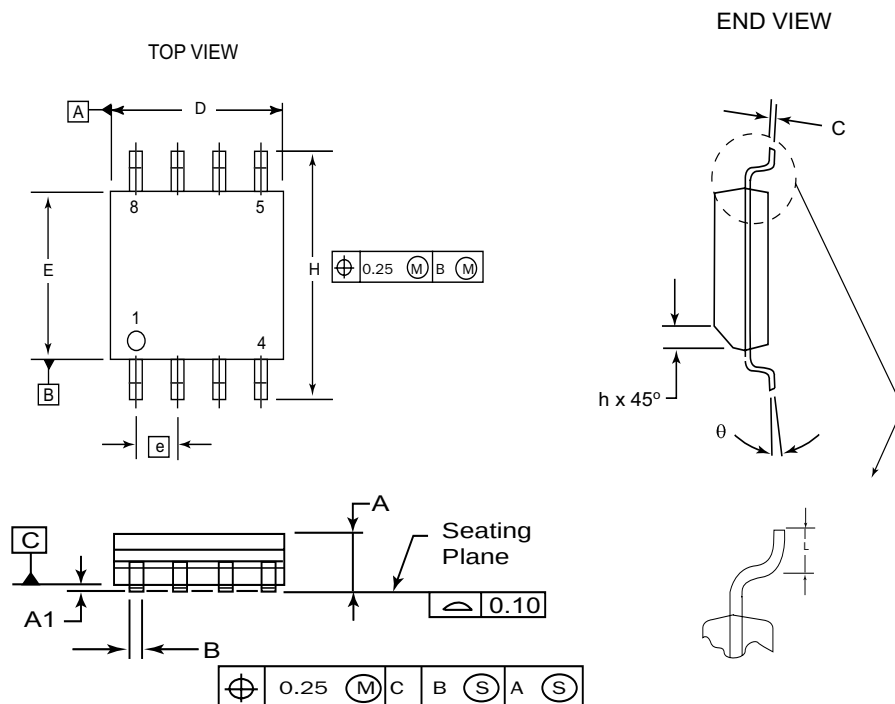
- Extended Supply Voltage Range: (VCC = +3.0V to +5.5V)
- High Bandwidth Output Transition
- 650 ps Typical Propagation Delay
- Differential LVPECL / PECL Outputs
- Fully Compatible with Motorola MC10/100ELT20 and MC10/100LVELT20
- ESD Protection of >4000V
- Industrial Temperature Range: -40°C to 85°C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

Functional Block Diagram



PIN Names

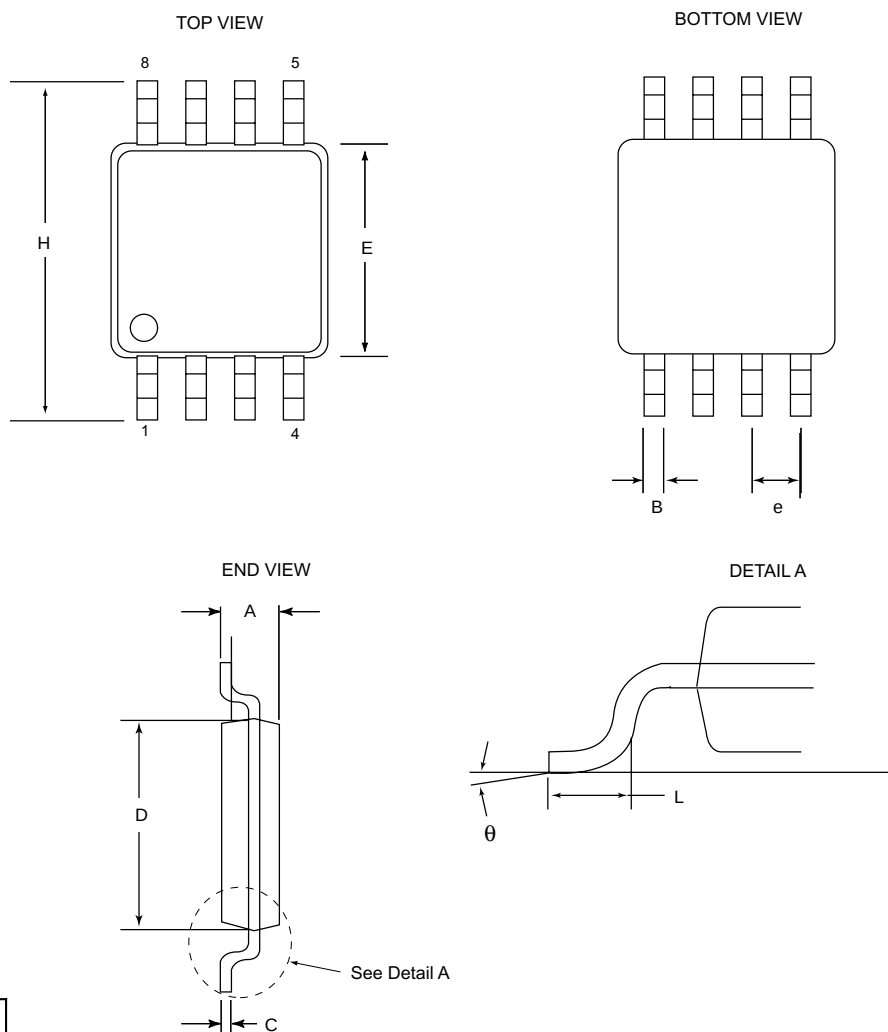
Pin	Function
DO	LVTTTL / TTL Input
Q, Q*	LVPECL / PECL Outputs
VCC	+3.0 to +5.5V Positive Power Supply
GND	Ground

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 $5.5V$; $T_A = -40^{\circ}C$ to $85^{\circ}C$)

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	μA	$V_{IN} = 2.7V$
I_{IHH}	Input High Current			100	μA	$V_{IN} = 7.0V$
I_{IL}	Input LOW Current	-0.6			mA	$V_{IN} = 0.5V$
V_{IK}	Input Clamp Voltage			-1.2	V	$I_{IN} = -18\text{ mA}$

SK10ELT20W PECL Output DC Electrical Characteristics

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

Symbol	Characteristic	$T_A = -40^{\circ}C$			$T_A = 0^{\circ}C$			$T_A = +25^{\circ}C$			$T_A = +85^{\circ}C$			Unit	Condition
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max		
V_{OH}	Output HIGH Voltage	3.92 2.275		4.11 2.42	3.98 2.275		4.18 2.42	4.02 2.273	4.1 2.35	4.19 2.42	4.08 2.275		4.28 2.42	V V	$V_{CC} = 5V$ $V_{CC} = 3.3V$
V_{OL}	Output LOW Voltage	3.05 1.49		3.35 1.88	3.05 1.49		3.37 1.88	3.05 1.49	3.25 1.595	3.37 1.68	3.05 1.49		3.4 1.68	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	$T_A = -40^{\circ}C$			$T_A = 0^{\circ}C$			$T_A = +25^{\circ}C$			$T_A = +85^{\circ}C$			Unit	Condition
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max		
V_{OH}	Output HIGH Voltage	3.915 2.275		4.12 2.42	3.979 2.275		4.12 2.42	3.975 2.275	4.1 2.35	4.19 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 1.49		3.445 1.88	3.19 1.49		3.38 1.88	3.19 1.49	3.30 1.595	3.38 1.88	3.19 1.49		3.35 1.88	V V	$V_{CC} = 5V$ $V_{CC} = 3.3V$
I_{CC}	Power Supply Current			16			16			16			16	mA	

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

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

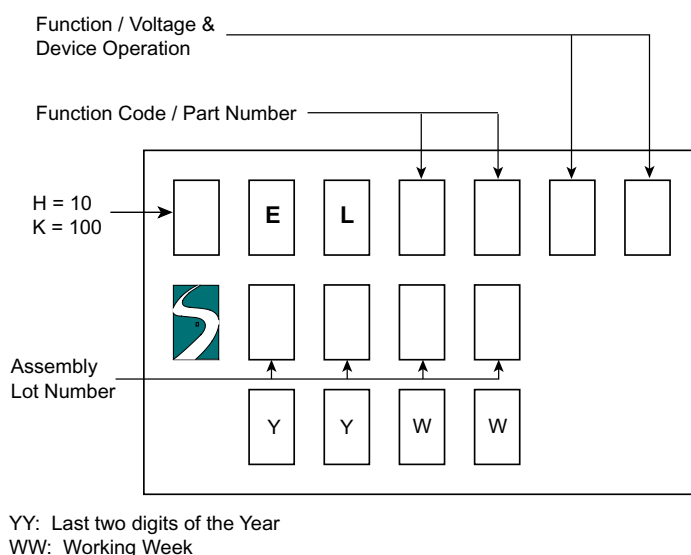
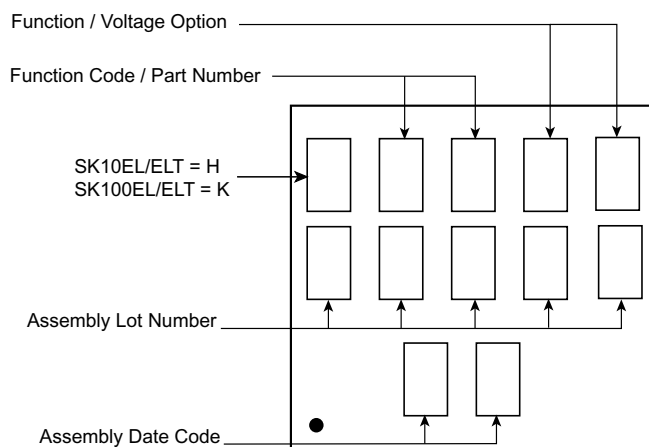
Symbol	Characteristic	TA = -40°C			TA = 0°C			TA = +25°C			TA = +85°C			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
f_{max}	Maximum Input Frequency	500			500			500			500			MHz
t_{PLH} t_{PHL}	Propagation Delay ¹	345	490	630	360	470	595	360	470	575	365	450	540	ps
t_r t_f	Output Rise/Fall Times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

Notes:

1. Specifications for standard TTL input signals.
2. For standard ECL DC specifications, refer to the ECL Logic Family Standard DC Specifications Data Sheet
3. 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

8/10 PIN MSOP PACKAGES

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