

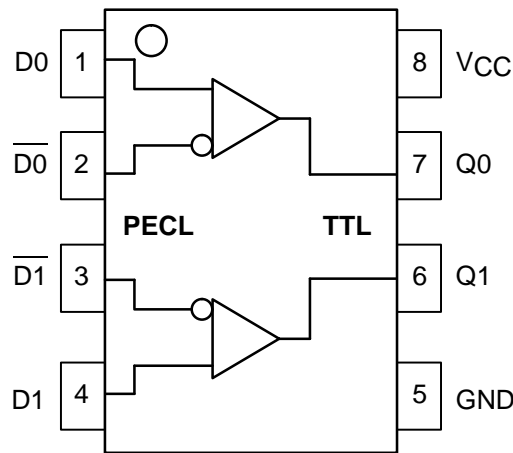
Dual Differential PECL to TTL Translator

The MC100ELT23 is a dual differential PECL to TTL translator. Because PECL (Positive ECL) levels are used only +5V and ground are required. The small outline 8-lead SOIC package and the dual gate design of the ELT23 makes it ideal for applications which require the translation of a clock and a data signal. Because the mature MOSAIC 1.5 process is used, low cost can be added to the list of features.

The ELT23 is available in only the ECL 100K standard. Since there are no PECL outputs or an external V_{BB} reference, the ELT23 does not require both ECL standard versions. The PECL inputs are differential; there is no specified difference between the differential input 10H and 100K standards. Therefore, the MC100ELT23 can accept any standard differential PECL input referenced from a V_{CC} of 5.0V.

- 3.5ns Typical Propagation Delay
- Differential PECL Inputs
- Small Outline SOIC Package
- 24mA TTL Outputs
- Flow Through Pinouts

LOGIC DIAGRAM AND PINOUT ASSIGNMENT



MC100ELT23



D SUFFIX
PLASTIC SOIC PACKAGE
CASE 751-05

PIN DESCRIPTION

PIN	FUNCTION
Q_n	TTL Outputs
D_n	Diff PECL Inputs
VCC	+5.0V Supply
GND	Ground



MAXIMUM RATINGS*

Symbol	Parameter	Value	Unit
V _{CC}	DC Supply Voltage (Referenced to GND)	7.0	V
T _A	Operating Temperature Range (In Free-Air)	–40 to 85	°C
T _{STG}	Storage Temperature Range	–55 to +150	°C

* Maximum Ratings are those values beyond which damage to the device may occur. Functional operation should be restricted to the Recommended Operating Conditions.

TTL OUTPUT DC CHARACTERISTICS (V_{CC} = 4.75V to 5.25V; T_A = –40°C to 85°C)

Symbol	Characteristic	Min	Typ	Max	Unit	Condition
V _{OH}	Output HIGH Voltage	2.4			V	I _{OH} = –3.0mA
V _{OL}	Output LOW Voltage			0.5	V	I _{OL} = 24mA
I _{CCH}	Power Supply Current		23	33	mA	
I _{CCL}	Power Supply Current		26	36	mA	
I _{OS}	Output Short Circuit Current	–150		–60	mA	

PECL INPUT DC CHARACTERISTICS (V_{CC} = 4.75V to 5.25V; T_A = –40°C to 85°C)

Symbol	Characteristic	–40°C		0°C		25°C			85°C		Unit	Condition
		Min	Max	Min	Max	Min	Typ	Max	Min	Max		
I _{IH}	Input HIGH Current		150		150			150		150	μA	
I _{IL}	Input LOW Current	0.5		0.5		0.5			0.5		μA	
V _{CMR}	Common Mode Range	2.2	V _{CC}	2.2	V _{CC}	2.2		V _{CC}	2.2	V _{CC}	V	
V _{PP}	Minimum Peak-to-Peak Input ¹	200		200		200			200		mV	
V _{IH}	Input HIGH Voltage 10ELT 100ELT	3.770 3.835	4.110 4.120	3.830 3.835	4.16 4.12	3.870 3.835		4.19 4.12	3.930 3.835	4.265 4.120	V	V _{CC} = 5.0V
V _{IL}	Input LOW Voltage 10ELT 100ELT	3.05 3.19	3.500 3.525	3.05 3.19	3.520 3.525	3.05 3.19		3.520 3.525	3.05 3.19	3.550 3.525	V	V _{CC} = 5.0V

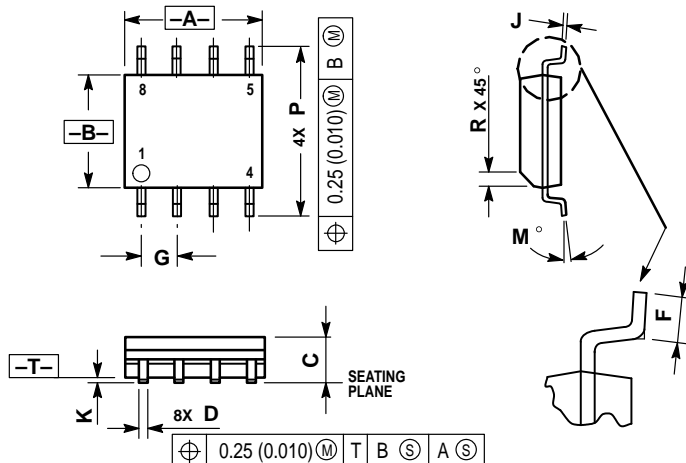
1. 200mV input guarantees full logic swing at the output.

AC CHARACTERISTICS (V_{CC} = 4.75V to 5.25V; T_A = –40°C to 85°C)

Symbol	Characteristic	–40°C		0°C		25°C			85°C		Unit	Condition
		Min	Max	Min	Max	Min	Typ	Max	Min	Max		
t _{PLH}	Propagation Delay ¹	2.0	5.5	2.0	5.5	2.0		5.5	2.0	5.5	ns	C _L = 20pF
t _{PHL}	Propagation Delay ¹	2.0	5.5	2.0	5.5	2.0		5.5	2.0	5.5	ns	C _L = 20pF

OUTLINE DIMENSIONS


D SUFFIX
PLASTIC SOIC PACKAGE
CASE 751-05
ISSUE P



NOTES:

1. DIMENSIONS A AND B ARE DATUMS AND T IS A DATUM SURFACE.
2. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
3. DIMENSIONS ARE IN MILLIMETER.
4. DIMENSION A AND B DO NOT INCLUDE MOLD PROTRUSION.
5. MAXIMUM MOLD PROTRUSION 0.15 PER SIDE.
6. DIMENSION D DOES NOT INCLUDE MOLD PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.

DIM	MILLIMETERS	
	MIN	MAX
A	4.80	5.00
B	3.80	4.00
C	1.35	1.75
D	0.35	0.49
F	0.40	1.25
G	1.27 BSC	
J	0.18	0.25
K	0.10	0.25
M	0°	7°
P	5.80	6.20
R	0.25	0.50

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How to reach us:

USA/EUROPE/Locations Not Listed: Motorola Literature Distribution;
P.O. Box 20912; Phoenix, Arizona 85036. 1-800-441-2447 or 602-303-5454

MFAX: RMFA00@email.sps.mot.com – TOUCHTONE 602-244-6609
INTERNET: <http://Design-NET.com>

JAPAN: Nippon Motorola Ltd.; Tatsumi-SPD-JLDC, 6F Seibu-Butsuryu-Center,
3-14-2 Tatsumi Koto-Ku, Tokyo 135, Japan. 03-81-3521-8315

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park,
51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298

