

AZ100ELT23

Dual Differential PECL to CMOS/TTL Translator

FEATURES

- 3.5ns Typical Propagation Delay
- <500ps Typical Output to Output Skew
- Differential PECL Inputs
- CMOS/TTL Outputs
- Flow Through Pinouts
- Direct Replacement for ON Semiconductor MC100ELT23
- Operating Range of 3.0V to 5.5V (For operation down to 2.5V supply consult AZM)
- Use AZ100ELT23 for 10K Applications

PACKAGE AVAILABILITY

PACKAGE	PART NO.	MARKING
SOIC 8	AZ100ELT23D	AZM100ELT23
SOIC 8 T&R	AZ100ELT23DR1	AZM100ELT23
SOIC 8 T&R	AZ100ELT23DR2	AZM100ELT23
TSSOP 8	AZ100ELT23T	AZHLT23
TSSOP 8 T&R	AZ100ELT23TR1	AZHLT23
TSSOP 8 T&R	AZ100ELT23TR2	AZHLT23

DESCRIPTION

The AZ100ELT23 is a dual differential PECL to CMOS/TTL translator. Because PECL (Positive ECL) levels are used, only V_{CC} and ground are required. The small outline 8-lead packaging and the low skew, dual gate design of the ELT23 makes it ideal for applications that require the translation of a clock and a data signal.

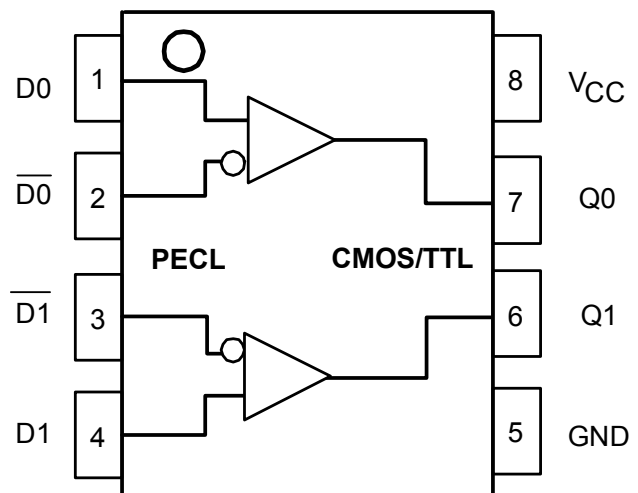
The ELT23 is available in only the ECL 100K standard. Since there are no PECL outputs or an external V_{BB} reference, the ELT23 does not require both ECL standard versions. The PECL inputs are differential; there is no specified difference between the differential input 10K and 100K standards. Therefore the AZ100ELT23 can accept any standard differential PECL input referenced from a V_{CC} of 3.0V to 5.5V.

NOTE: Specifications in the ECL/PECL tables are valid when thermal equilibrium is established.

PIN DESCRIPTION

PIN	FUNCTION
Q0, Q1	CMOS/TTL Outputs
DO, $\overline{D0}$ – D1, $\overline{D1}$	Differential PECL inputs
V_{CC}	Positive Supply
GND	Ground

LOGIC DIAGRAM AND PINOUT ASSIGNMENT



AZ100ELT23

Absolute Maximum Ratings are those values beyond which device life may be impaired.

Symbol	Character	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	-65 to +150	°C

CMOS/TTL DC CHARACTERISTICS ($V_{CC} = +3.0V$ to $+5.5V$)

Symbol	Characteristic	Min	Typ	Max	Unit	Condition
V_{OH}	Output HIGH Voltage	$V_{CC} - 0.5$			V	$I_{OH} = -24$ mA
V_{OL}	Output LOW Voltage			0.5	V	$I_{OL} = 24$ mA
I_{CC}	Power Supply Current		9.0	15	mA	0°C to 85°C
I_{CC}	Power Supply Current		9.0	17.6	mA	-40°C to 85°C
I_{OS}	Output Short Circuit Current		100		mA	

100K LVPECL DC Characteristics ($V_{CC} = +3.3V$)

Symbol	Characteristic	-40°C			0°C			25°C			85°C			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
V_{IH}	Input HIGH Voltage	2135		2420	2135		2420	2135		2420	2135		2420	mV
V_{IL}	Input LOW Voltage	1490		1825	1490		1825	1490		1825	1490		1825	mV
V_{PP}	Minimum Input Swing ¹	200			200			200			200			mV
V_{CMR}	Common Mode Range	1.2		V_{CC}	1.2		V_{CC}	1.2		V_{CC}	1.2		V_{CC}	V
I_{IL}	Input LOW Current	0.5			0.5			0.5			0.5			µA
I_{IH}	Input HIGH Current			150			150			150			150	µA

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

100K PECL DC Characteristics ($V_{CC} = +5.0V$)

Symbol	Characteristic	-40°C			0°C			25°C			85°C			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
V_{IH}	Input HIGH Voltage	3835		4120	3835		4120	3835		4120	3835		4120	mV
V_{IL}	Input LOW Voltage	3190		3525	3190		3525	3190		3525	3190		3525	mV
V_{PP}	Minimum Input Swing ¹	200			200			200			200			mV
V_{CMR}	Common Mode Range	1.2		V_{CC}	1.2		V_{CC}	1.2		V_{CC}	1.2		V_{CC}	V
I_{IL}	Input LOW Current	0.5			0.5			0.5			0.5			µA
I_{IH}	Input HIGH Current			150			150			150			150	µA

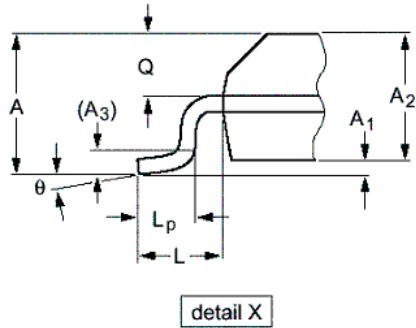
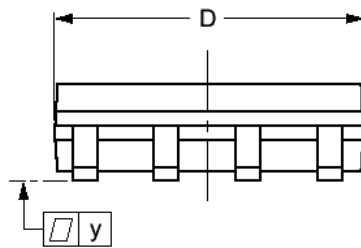
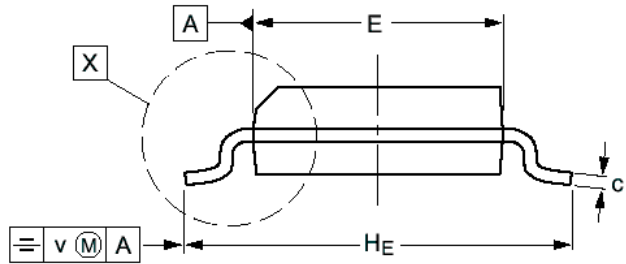
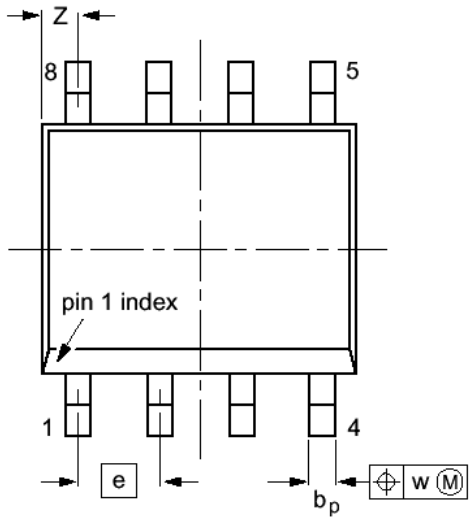
1. 200mV input guarantees full logic swing at the output.

AC Characteristics ($V_{CC} = +3.0V$ to $+5.5V$)

Symbol	Characteristic	-40°C			0°C			25°C			85°C			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
t_{PLH} / t_{PHL}	Propagation Delay to Output ¹													ns
	$V_{CC} = 4.5V$ to $5.5V$	2.0		5.5	2.0		5.5	2.0		5.5	2.0		5.5	
	$V_{CC} = 3.0V$ to $3.6V$	3.5		7.0	3.5		7.0	3.5		7.0	3.5		7.0	

1. $C_L = 20pF$

**PACKAGE DIAGRAM
SOIC 8**

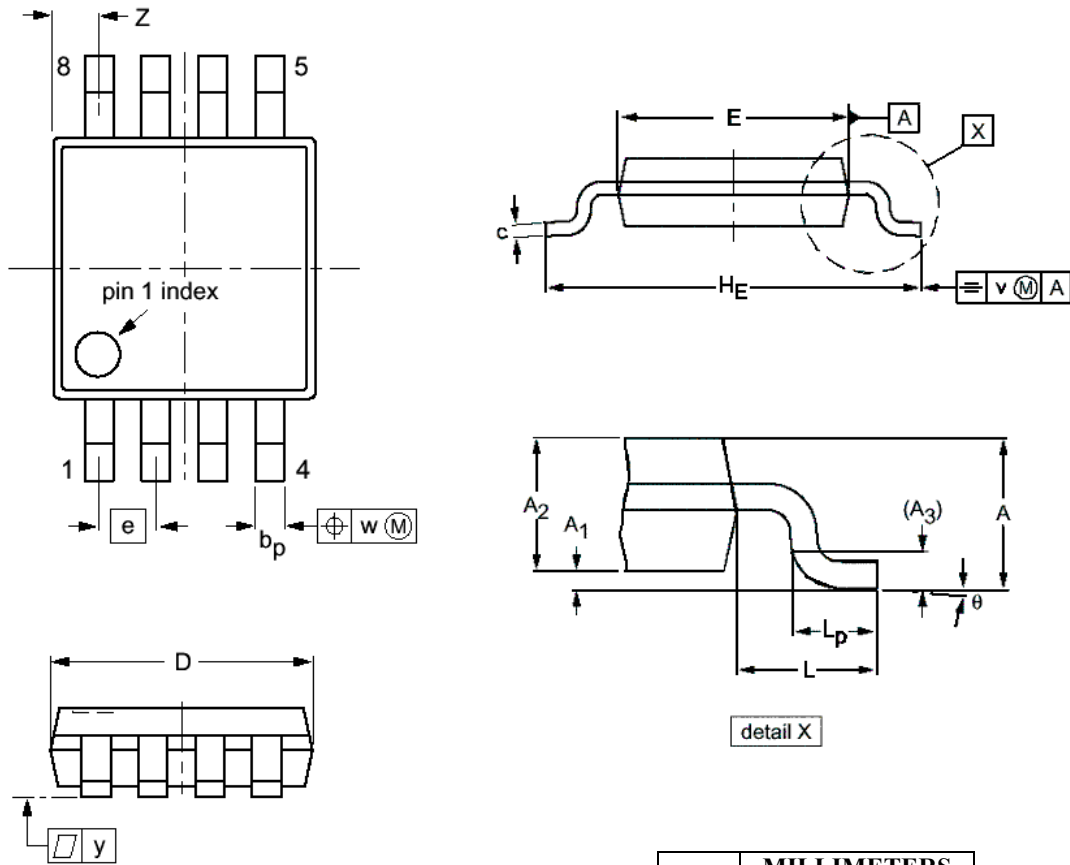


DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.35	1.75	0.053	0.069
A ₁	0.10	0.25	0.004	0.010
A ₂	1.28	1.57	0.050	0.062
A ₃	0.25		0.01	
b _p	0.36	0.49	0.014	0.019
c	0.19	0.25	0.0075	0.0100
D	4.80	5.0	0.19	0.20
E	3.80	4.0	0.15	0.16
e	1.27		0.050	
H _E	5.80	6.20	0.228	0.244
L	1.05		0.041	
L _p	0.40	1.27	0.016	0.050
Q	0.60	0.70	0.024	0.028
v	0.25		0.01	
w	0.25		0.01	
y	0.10		0.004	
Z	0.30	0.70	0.012	0.028
θ	0°	8°	0°	8°

NOTES:

1. DIMENSIONS D AND E DO NOT INCLUDE MOLD PROTRUSION.
2. MAXIMUM MOLD PROTRUSION FOR D IS 0.15mm.
3. MAXIMUM MOLD PROTRUSION FOR E IS 0.25mm.

**PACKAGE DIAGRAM
TSSOP 8**



NOTES:

1. DIMENSIONS D AND E DO NOT INCLUDE MOLD PROTRUSION.
2. MAXIMUM MOLD PROTRUSION FOR D IS 0.15mm.
3. MAXIMUM MOLD PROTRUSION FOR E IS 0.25mm.

DIM	MILLIMETERS	
	MIN	MAX
A		1.10
A ₁	0.05	0.15
A ₂	0.75	0.95
A ₃	0.25	
b _p	0.22	0.40
c	0.13	0.23
D	2.90	3.10
E	2.90	3.10
e	0.65	
H _E	4.75	5.05
L	0.95	
L _p	0.40	0.70
v	0.10	
w	0.08	
y	0.10	
Z	0.38	0.64
θ	0°	6°

AZ100ELT23

Arizona Microtek, Inc. reserves the right to change circuitry and specifications at any time without prior notice. Arizona Microtek, Inc. makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Arizona Microtek, Inc. assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Arizona Microtek, Inc. does not convey any license rights nor the rights of others. Arizona Microtek, Inc. products are not designed, intended or authorized for use as components in systems intended to support or sustain life, or for any other application in which the failure of the Arizona Microtek, Inc. product could create a situation where personal injury or death may occur. Should Buyer purchase or use Arizona Microtek, Inc. products for any such unintended or unauthorized application, Buyer shall indemnify and hold Arizona Microtek, Inc. and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Arizona Microtek, Inc. was negligent regarding the design or manufacture of the part.