

AZ10ELT20 AZ100ELT20

CMOS/TTL to Differential PECL Translator

FEATURES

- 0.5ns Typical Propagation Delay
- Differential PECL Outputs
- Flow Through Pinouts
- Operating Range of 3.0V to 5.5V
- Direct Replacement for ON Semiconductor MC10ELT20 & MC100ELT20
- Available in a 3x3mm MLP Package

PACKAGE AVAILABILITY

PACKAGE	PART NO.	MARKING
SOIC 8	AZ10ELT20D	AZM10ELT20
SOIC 8 T&R	AZ10ELT20DR1	AZM10ELT20
SOIC 8 T&R	AZ10ELT20DR2	AZM10ELT20
SOIC 8	AZ100ELT20D	AZM100ELT20
SOIC 8 T&R	AZ100ELT20DR1	AZM100ELT20
SOIC 8 T&R	AZ100ELT20DR2	AZM100ELT20
MLP 16	AZ10/100ELT20L	AZMT20
MLP 16 T&R	AZ10/100ELT20LR1	AZMT20
MLP 16 T&R	AZ10/100ELT20LR2	AZMT20
TSSOP 8	AZ10ELT20T	AZTLT20
TSSOP 8 T&R	AZ10ELT20TR1	AZTLT20
TSSOP 8 T&R	AZ10ELT20TR2	AZTLT20
TSSOP 8	AZ100ELT20T	AZHLT20
TSSOP 8 T&R	AZ100ELT20TR1	AZHLT20
TSSOP 8 T&R	AZ100ELT20TR2	AZHLT20
DIE	AZ10/100ELT20X	N/A

DESCRIPTION

The AZ10/100ELT20 is a CMOS/TTL to differential PECL translator. Because PECL (Positive ECL) levels are used, only V_{CC} and ground are required. The small outline packaging and the single gate of the ELT20 makes it ideal for those applications where space, performance and low power are at a premium.

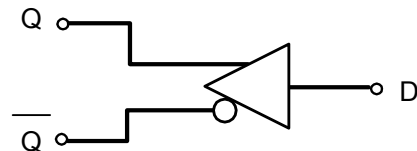
The ELT20 is available in both PECL standards: the 10ELT is compatible with PECL 10K logic levels while the 100ELT is compatible with PECL 100K logic levels.

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

PIN DESCRIPTION

PIN	FUNCTION
Q, \bar{Q}	Differential PECL Outputs
D	TTL/CMOS Input
GND	Ground
V_{CC} , V_{CCO}	Positive Supply
NC	No Connect
10K, 100K	10K, 100K Mode Select

BLOCK DIAGRAM



AZ10ELT20

AZ100ELT20

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

Symbol	Characteristic	Value	Unit
V _{CC}	DC Supply Voltage (Referenced to GND)	0 to +8.0	V
V _{IN}	Input Voltage	0 to +6.0	V
I _{OUT}	Current Applied to Output in Low Output State	--- Continuous --- Surge	50 100 mA
T _A	Operating Temperature Range (In Free-Air)	-40 to +85	°C
T _{STG}	Storage Temperature Range	-65 to +150	°C

TTL/CMOS INPUT DC CHARACTERISTICS (GND = 0.0V, V_{CC} = +3.0V to +5.5V)

Symbol	Characteristic	Min	Typ	Max	Unit	Condition
I _{IH}	Input HIGH Current			15	μA	V _{IN} = 2.7V
I _{IHH}	Input HIGH Current			20	μA	V _{IN} = V _{CC}
I _{IL}	Input LOW Current			-0.1	mA	V _{IN} = 0.5V
V _{IK}	Input Clamp Diode Voltage			-1.2	V	I _{IN} = -18mA
V _{IH}	Input HIGH Voltage	2.0			V	
V _{IL}	Input LOW Voltage			0.8	V	

10K LVPECL DC Characteristics (GND = 0.0V, 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 _{OH}	Output HIGH Voltage ^{1,2}	2170		2410	2245		2460	2295	2400	2490	2390		2580	mV
V _{OL}	Output LOW Voltage ^{1,2}	1350		1685	1350		1670	1350	1550	1670	1350		1705	mV
I _{CC}	Power Supply Current ³			24			24			24			25	mA

- Output parameters vary 1:1 with V_{CC}.
- Each output is terminated through a 50Ω resistor to V_{CC} - 2V.
- I_{CC} measurements must be done with outputs open.

10K PECL DC Characteristics (GND = 0.0V, 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 _{OH}	Output HIGH Voltage ^{1,2}	3870		4110	3945		4160	3995	4100	4190	4090		4280	mV
V _{OL}	Output LOW Voltage ^{1,2}	3050		3385	3050		3370	3050	3250	3370	3050		3405	mV
I _{CC}	Power Supply Current ³			24			24			24			25	mA

- Output parameters vary 1:1 with V_{CC}.
- Each output is terminated through a 50Ω resistor to V_{CC} - 2V.
- I_{CC} measurements must be done with outputs open.

100K LVPECL DC Characteristics (GND = 0.0V, 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 _{OH}	Output HIGH Voltage ^{1,2}	2160		2420	2205		2420	2235	2345	2420	2255		2420	mV
V _{OL}	Output LOW Voltage ^{1,2}	1470		1745	1490		1680	1490	1595	1680	1490		1680	mV
I _{CC}	Power Supply Current ³			24			24			24			25	mA

- Output parameters vary 1:1 with V_{CC}.
- Each output is terminated through a 50Ω resistor to V_{CC} - 2V.
- I_{CC} measurements must be done with outputs open.

100K PECL DC Characteristics (GND = 0.0V, 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 _{OH}	Output HIGH Voltage ^{1,2}	3860		4120	3905		4120	3935	4045	4120	3955		4120	mV
V _{OL}	Output LOW Voltage ^{1,2}	3170		3445	3190		3380	3190	3295	3380	3190		3380	mV
I _{CC}	Power Supply Current ³			24			24			24			25	mA

- Output parameters vary 1:1 with V_{CC}.
- Each output is terminated through a 50Ω resistor to V_{CC} - 2V.
- I_{CC} measurements must be done with outputs open.

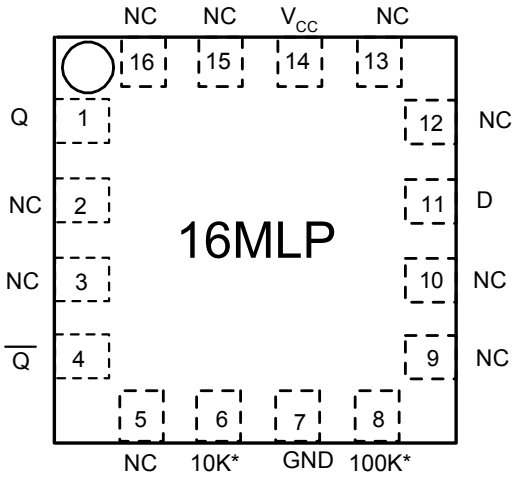
AZ10ELT20

AZ100ELT20

AC CHARACTERISTICS (GND = 0.0V, V_{CC} = +3.0V to +5.5V)

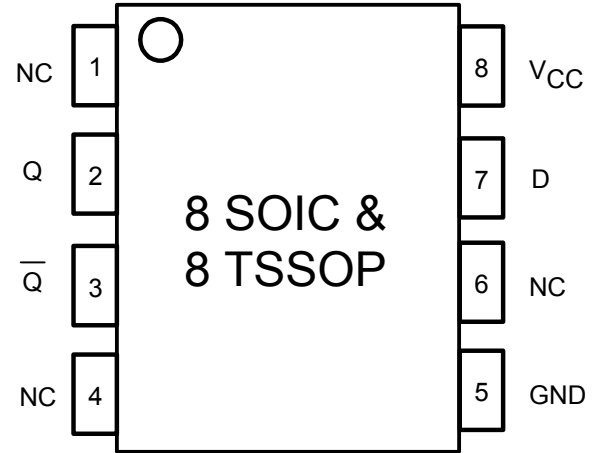
Symbol	Characteristic	-40°C		0°C		25°C			85°C		Unit	Condition
		Min	Max	Min	Max	Min	Typ	Max	Min	Max		
t _{PLH}	Propagation Delay ¹	0.2	0.7	0.2	0.7	0.2	0.4	0.7	0.2	0.7	ns	
t _{PHL}	Propagation Delay ¹	0.2	0.7	0.2	0.7	0.2	0.4	0.7	0.2	0.7	ns	
t _r /t _f	Output Rise/Fall Time	0.25	0.7	0.25	0.7	0.25	0.4	0.7	0.25	0.7	ns	20-80%
f _{MAX}	Maximum Frequency ²	350		350		350			350		MHz	
f _{MAX}	Maximum Frequency ³	670		800		800			800		MHz	

1. Propagation delay is measured from +1.5V on the input to 50% of the PECL output swing. Input rise/fall times are < 1ns/V.
2. Full swing PECL output.
3. Output at -3 dB.

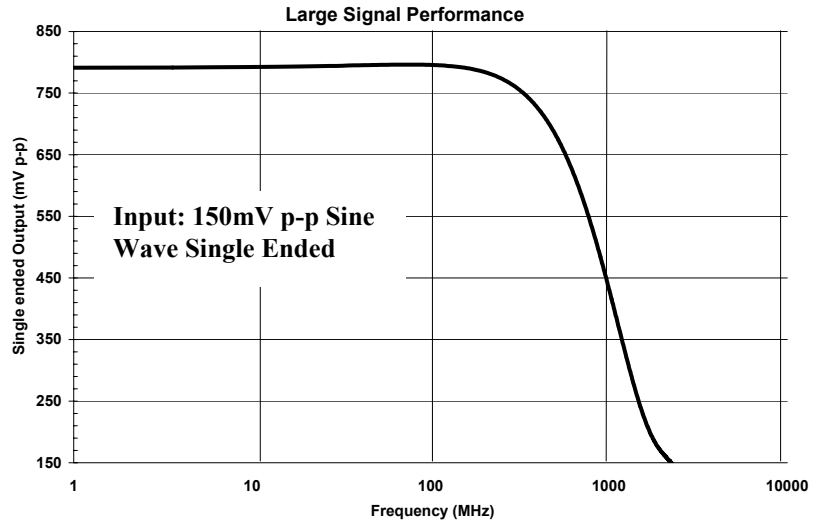
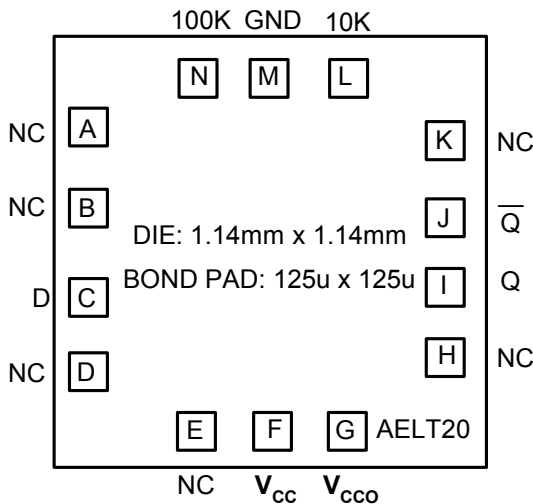


16MLP/DIE:
10K/100K Selection

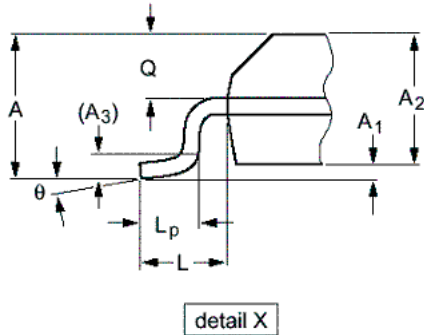
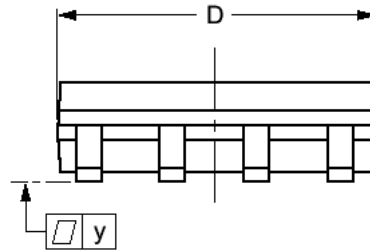
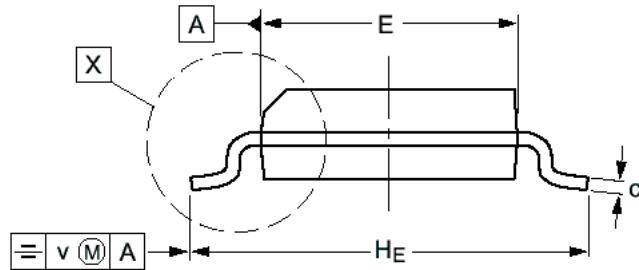
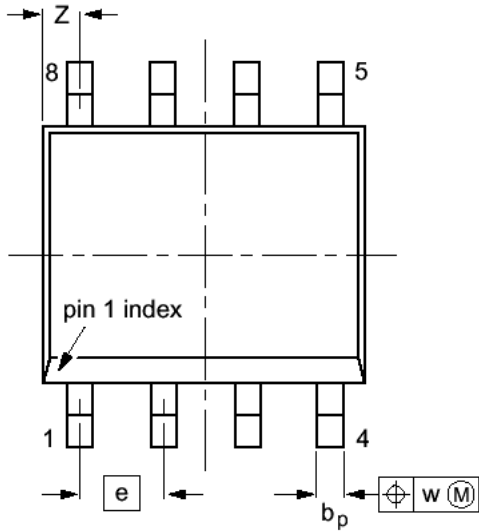
Connect pin/pad 10K to GND and float (NC) pin/pad 100K to select 10K operation.
 Connect 100K to GND and float (NC) pin/pad 10K to select 100K operation. GND connections must be less than 1Ω.



- * For 10K: Connect 6 to 7
- * For 100K: Connect 8 to 7



**PACKAGE DIAGRAM
SOIC 8**

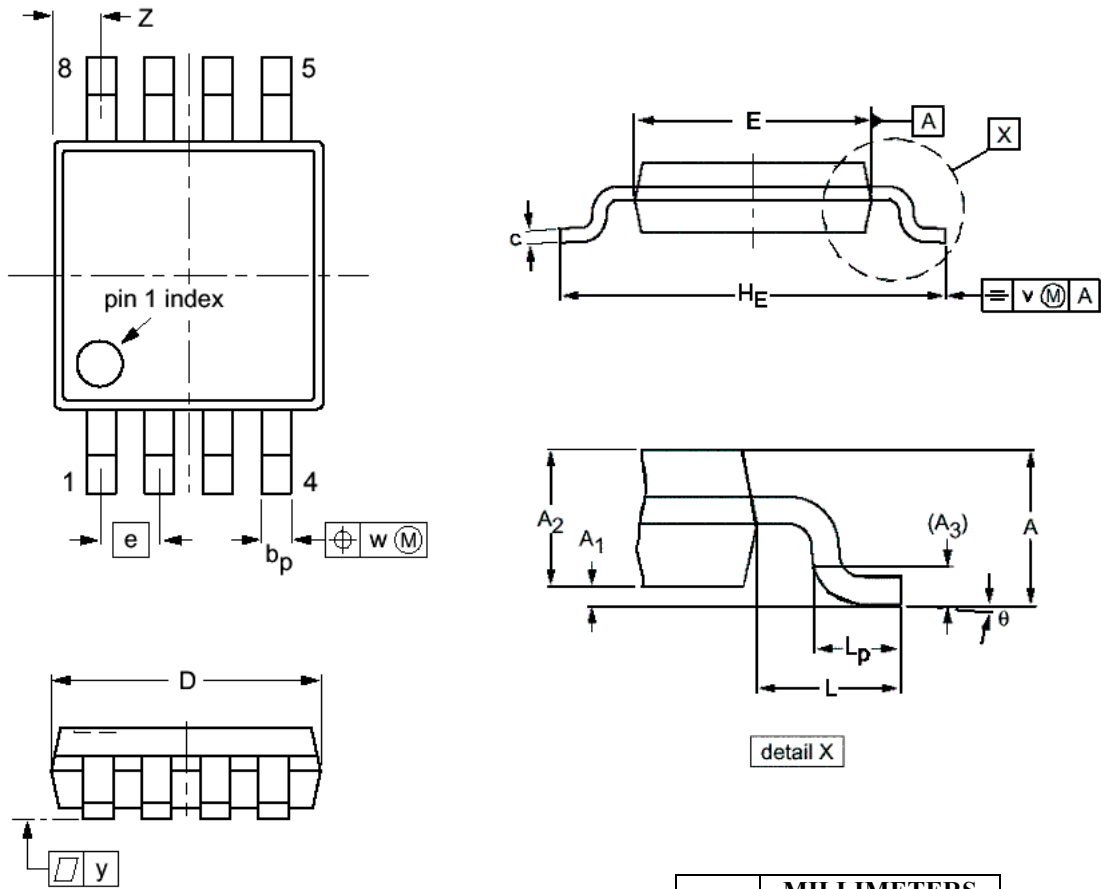


DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.35	1.75	.053	0.069
A ₁	0.10	0.25	0.004	0.010
A ₂	1.28	1.57	0.050	0.062
A ₃	0.25		0.01	
b _p	0.36	0.49	0.014	0.019
c	0.19	0.25	0.0075	0.0100
D	4.80	5.00	0.19	0.20
E	3.80	4.00	0.15	0.16
e	1.27		0.050	
H _E	5.80	6.20	0.228	0.244
L	1.05		0.041	
L _p	0.40	1.27	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°

AZ10ELT20
AZ100ELT20

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.