DATA SHEET

ARIZONA MICROTEK, INC.

AZ10ELT20
AZ100ELT20

TTL (CMOS) to Differential PECL Translator

FEATURES

- 0.4ns Typical Propagation Delay
- Differential PECL Outputs
- Flow Through Pinouts
- **PLUS** Extended Supply Voltage Range 3.0V to 5.5V
- Direct Replacement for ON Semiconductor MC10ELT20 & MC100ELT20
- Manufactured Under License By Lucent Technologies

DESCRIPTION

The AZ10ELT/100ELT20 is a TTL (CMOS) to differential PECL translator. Because PECL (Positive ECL) levels are used, only V_{CC} and ground are required. The small outline 8-lead SOIC package 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 ECL standards: the 10ELT is compatible with positive MECL 10H logic levels while the 100ELT is compatible with positive ECL 100K logic levels.

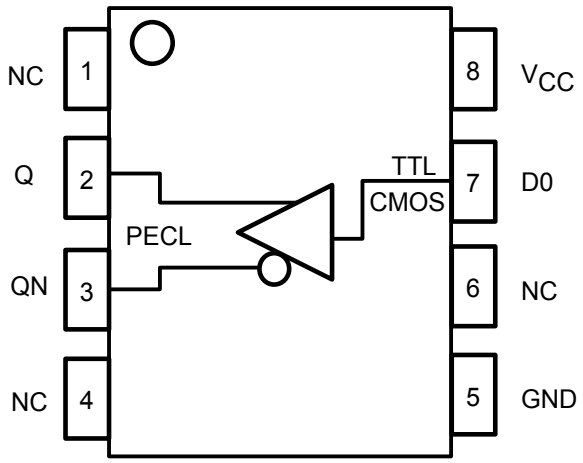
PIN DESCRIPTION

PIN	FUNCTION
Q, QN	Diff PECL Outputs
D	TTL/CMOS Input
V_{CC}	+3.0V to +5.5V Supply
GND	Ground

PACKAGE AVAILABILITY

PACKAGE	PART NO.	MARKING
SOIC 8	AZ10ELT20D	AZM10ELT20
SOIC 8	AZ100ELT20D	AZM100ELT20

LOGIC DIAGRAM AND PINOUT ASSIGNMENT



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MAXIMUM RATINGS*

Symbol	Parameter	Value	Unit
V_{CC}	DC Supply Voltage (Referenced to GND)	7.0	V
V_{IN}	Input Voltage	0 to V_{CC}	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	-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/CMOS INPUT DC CHARACTERISTICS (V_{CC} = 3.0V to 5.5V; T_A = -40°C to 85°C)

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}				-1.2	V	I_{IN} = -18mA
V_{IH}	Input HIGH Voltage	2.0			V	
V_{IL}	Input LOW Voltage			0.8	V	

PECL OUTPUT DC CHARACTERISTICS (V_{CC} = 3.0V to 5.5V; T_A = -40°C to 85°C)

		-40°C		0°C		25°C			85°C			
Symbol	**Characteristic**	**Min**	**Max**	**Min**	**Max**	**Min**	**Typ**	**Max**	**Min**	**Max**	**Unit**	**Condition**
V_{OH}	Output HIGH Voltage											
	10ELT[1]	3.920	4.11	3.980	4.16	4.020	4.10	4.19	4.080	4.27	V	V_{CC} = 5.0V
	100ELT[1]	3.915	4.12	3.975	4.12	3.975	4.05	4.12	3.975	4.12		
V_{OL}	Output LOW Voltage											
	10ELT[1]	3.05	3.350	3.05	3.37	3.05	3.25	3.37	3.05	3.40	V	V_{CC} = 5.0V
	100ELT[1]	3.17	3.445	3.19	3.38	3.19	3.30	3.38	3.19	3.35		
I_{CC}	Power Supply Current		24		24			24		24	mA	

1. Levels will vary 1:1 with V_{CC}.

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

		-40°C		0°C		25°C			85°C			
Symbol	**Characteristic**	**Min**	**Max**	**Min**	**Max**	**Min**	**Typ**	**Max**	**Min**	**Max**	**Unit**	**Condition**
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]	1.2	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 Input Frequency[2]	100		100		100			100		MHz	5V CMOS In
f_{MAX}	Maximum Input Frequency[3]	400		400		400	500		400		MHz	Sine Wave

1. Propagation delay is measured from +1.5V to 50% of the PECL output swing. Input rise/fall times are < 1ns/V.
2. Input pulse is 1ns/V, 5V swing.
3. Input is sine wave, 3Vpp, centered around +1.5V.