

AZ10EL58

AZ100EL58

ECL/PECL 2:1 Multiplexer

FEATURES

- 230ps Propagation Delay
- High Bandwidth Output Transitions
- 75k Ω Internal Input Pulldown Resistors
- Direct Replacement for ON Semiconductor MC10EL58 & MC100EL58

PACKAGE AVAILABILITY

PACKAGE	PART NUMBER	MARKING	NOTES
SOIC 8	AZ10EL58D	AZM10EL58	1,2
SOIC 8	AZ100EL58D	AZM100EL58	1,2
TSSOP 8	AZ10EL58T	AZTEL58	1,2
TSSOP 8	AZ100EL58T	AZHEL58	1,2

- 1 Add R1 at end of part number for 7 inch (1K parts), R2 for 13 inch (2.5K parts) Tape & Reel.
- 2 Date Code "YWW" on underside of part.

DESCRIPTION

The AZ10/100EL58 is a 2:1 multiplexer. The device is functionally equivalent to the E158 device with higher performance capabilities. With propagation delays and output transition times significantly faster than the E158, the EL58 is ideally suited for those applications that require the ultimate in AC performance.

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

FUNCTION TABLE

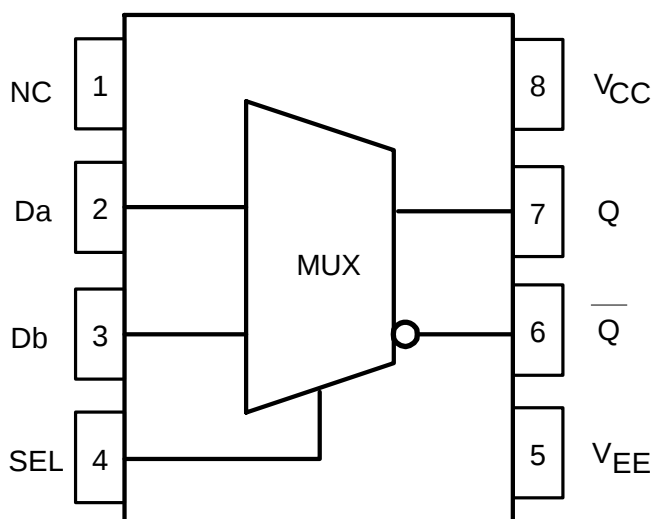
SEL*	Q
H	Da
L	Db

* Pin will default low when left open.

PIN DESCRIPTION

PIN	FUNCTION
Da, Db	Data Inputs
Q, $\bar{Q}$	Data Outputs
SEL	Select
V _{CC}	Positive Supply
V _{EE}	Negative Supply
NC	No Connect

LOGIC DIAGRAM AND PINOUT ASSIGNMENT



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

Symbol	Characteristic	Rating	Unit
V_{CC}	PECL Power Supply ($V_{EE} = 0V$)	0 to +8.0	Vdc
V_I	PECL Input Voltage ($V_{EE} = 0V$)	0 to +6.0	Vdc
V_{EE}	ECL Power Supply ($V_{CC} = 0V$)	-8.0 to 0	Vdc
V_I	ECL Input Voltage ($V_{CC} = 0V$)	-6.0 to 0	Vdc
I_{OUT}	Output Current --- Continuous --- Surge	50 100	mA
T_A	Operating Temperature Range	-40 to +85	°C
T_{STG}	Storage Temperature Range	-65 to +150	°C

10K ECL DC Characteristics ($V_{EE} = -4.75V$ to $-5.5V$, $V_{CC} = GND$)

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	-1080		-890	-1020		-840	-980		-810	-910		-720	mV
V_{OL}	Output LOW Voltage ¹	-1950		-1650	-1950		-1630	-1950		-1630	-1950		-1595	mV
V_{IH}	Input HIGH Voltage	-1230		-890	-1170		-840	-1130		-810	-1060		-720	mV
V_{IL}	Input LOW Voltage	-1950		-1500	-1950		-1480	-1950		-1480	-1950		-1445	mV
I_{IH}	Input HIGH Current			150			150			150			150	μA
I_{IL}	Input LOW Current	0.5			0.5			0.5			0.5			μA
I_{EE}	Power Supply Current		14	17		14	17		14	17		14	17	mA

- Each output is terminated through a 50Ω resistor to $V_{CC} = 2V$.

10K PECL DC Characteristics ($V_{EE} = GND$, $V_{CC} = +5.0V$)

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}	3920		4110	3980		4160	4020		4190	4090		4280	mV
V_{OL}	Output LOW Voltage ^{1,2}	3050		3350	3050		3370	3050		3370	3050		3405	mV
V_{IH}	Input HIGH Voltage ¹	3770		4110	3830		4160	3870		4190	3940		4280	mV
V_{IL}	Input LOW Voltage ¹	3050		3500	3050		3520	3050		3520	3050		3555	mV
I_{IH}	Input HIGH Current			150			150			150			150	μA
I_{IL}	Input LOW Current	0.5			0.5			0.5			0.5			μA
I_{EE}	Power Supply Current		14	17		14	17		14	17		14	17	mA

- For supply voltages other than 5.0V, use the ECL table values and ADD supply voltage value.
- Each output is terminated through a 50Ω resistor to $V_{CC} = 2V$.

100K ECL DC Characteristics ($V_{EE} = -4.2V$ to $-5.5V$, $V_{CC} = GND$)

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	-1085	-1005	-880	-1025	-955	-880	-1025	-955	-880	-1025	-955	-880	mV
V_{OL}	Output LOW Voltage ¹	-1830	-1695	-1555	-1810	-1705	-1620	-1810	-1705	-1620	-1810	-1705	-1620	mV
V_{IH}	Input HIGH Voltage	-1165		-880	-1165		-880	-1165		-880	-1165		-880	mV
V_{IL}	Input LOW Voltage	-1810		-1475	-1810		-1475	-1810		-1475	-1810		-1475	mV
I_{IH}	Input HIGH Current			150			150			150			150	μA
I_{IL}	Input LOW Current	0.5			0.5			0.5			0.5			μA
I_{EE}	Power Supply Current		14	17		14	17		14	17		16	19	mA

- Each output is terminated through a 50Ω resistor to $V_{CC} = 2V$.

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

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}	3915	3995	4120	3975	4045	4120	3975	4045	4120	3975	4045	4120	mV
V_{OL}	Output LOW Voltage ^{1,2}	3170	3305	3445	3190	3295	3380	3190	3295	3380	3190	3295	3380	mV
V_{IH}	Input HIGH Voltage ¹	3835		4120	3835		4120	3835		4120	3835		4120	mV
V_{IL}	Input LOW Voltage ¹	3190		3525	3190		3525	3190		3525	3190		3525	mV
I_{IH}	Input HIGH Current			150			150			150			150	μA
I_{IL}	Input LOW Current	0.5			0.5			0.5			0.5			μA
I_{EE}	Power Supply Current		14	17		14	17		14	17		16	19	mA

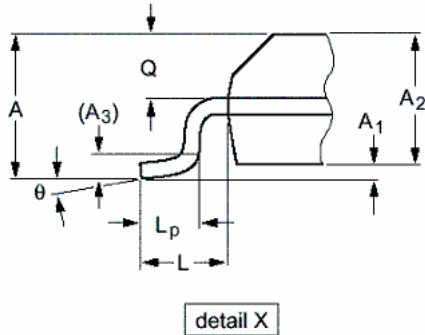
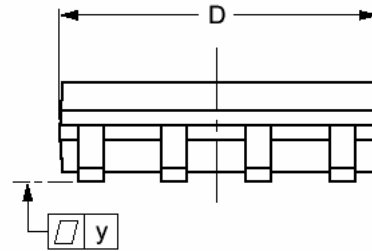
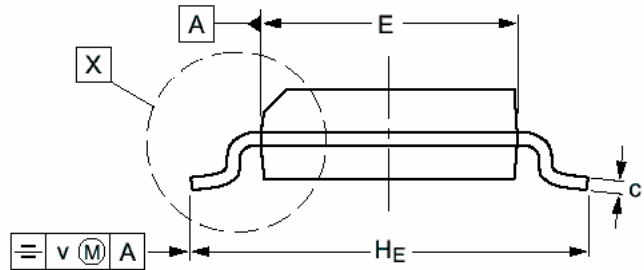
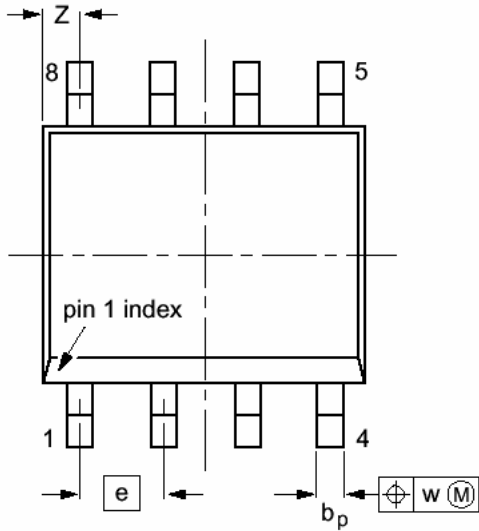
- For supply voltages other than 5.0V, use the ECL table values and ADD supply voltage value.
- Each output is terminated through a 50Ω resistor to $V_{CC} = 2V$.

AZ10EL58**AZ100EL58**

AC Characteristics ($V_{EE}=10E(-4.75V \text{ to } -5.5V)$, $100E(-4.2V \text{ to } -5.5V)$; $V_{CC}=GND$ or $V_{EE}=GND$, $V_{CC}=10E(+4.75V \text{ to } +5.5V)$, $100E(+4.2V \text{ to } +5.5V)$)

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 D to Q SEL to Q	60 90	220 250	380 410	110 140	220 250	330 360	120 150	230 260	340 370	140 170	250 280	360 390	ps
t_r / t_f	Rise/Fall Time 20 – 80%	100		350	100		350	100		350	100		350	ps

**PACKAGE DIAGRAM
SOIC 8**

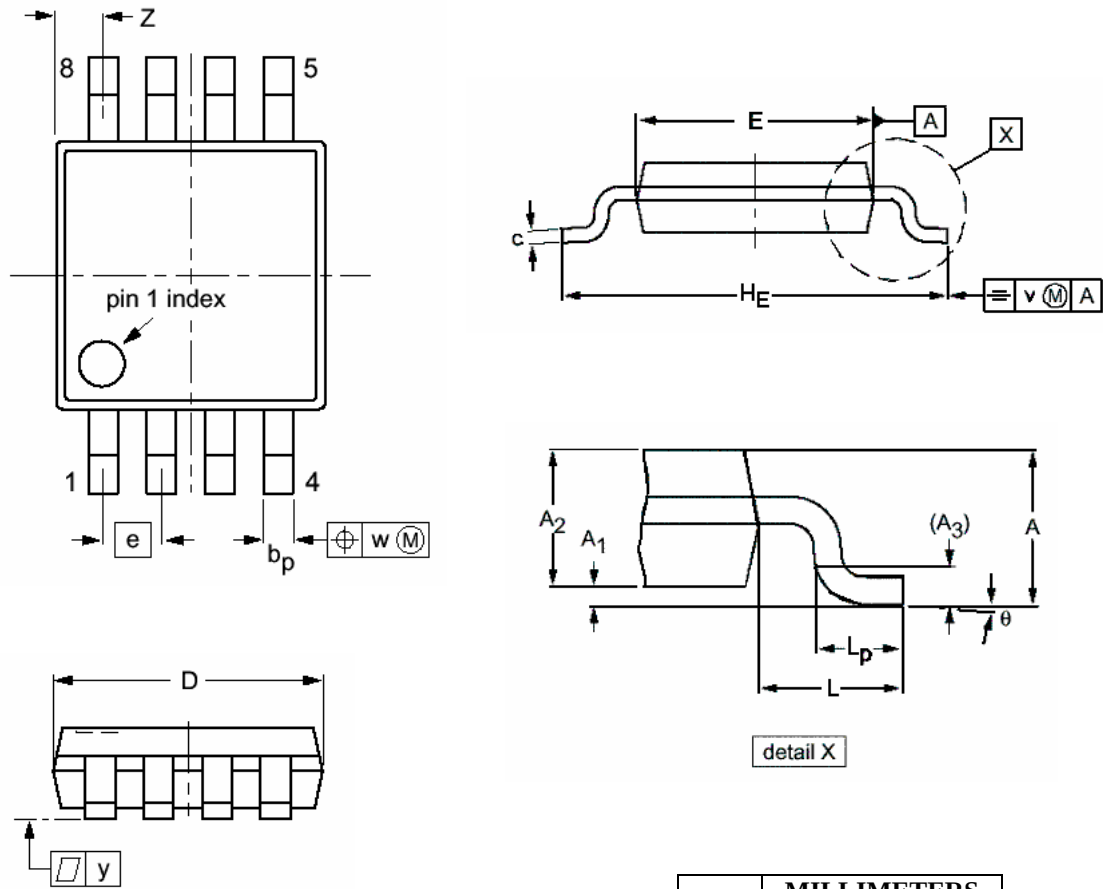


NOTES:

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		INCHES	
	MIN	MAX	MIN	MAX
A		1.75		0.069
A ₁	0.10	0.25	0.004	0.010
A ₂	1.25	1.45	0.049	0.057
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	4.8	5.0	0.19	0.20
E	3.8	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	1.00	0.016	0.039
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°

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	0.80	0.95
A ₃	0.25	
b _p	0.25	0.45
c	0.15	0.28
D	2.90	3.10
E	2.90	3.10
e	0.65	
H _E	4.70	5.10
L	0.94	
L _p	0.40	0.70
v	0.10	
w	0.10	
y	0.10	
Z	0.35	0.70
θ	0°	6°

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