AZ100LVEL58

PECL/ECL 2:1 Multiplexer

www.azmicrotek.com

DESCRIPTION

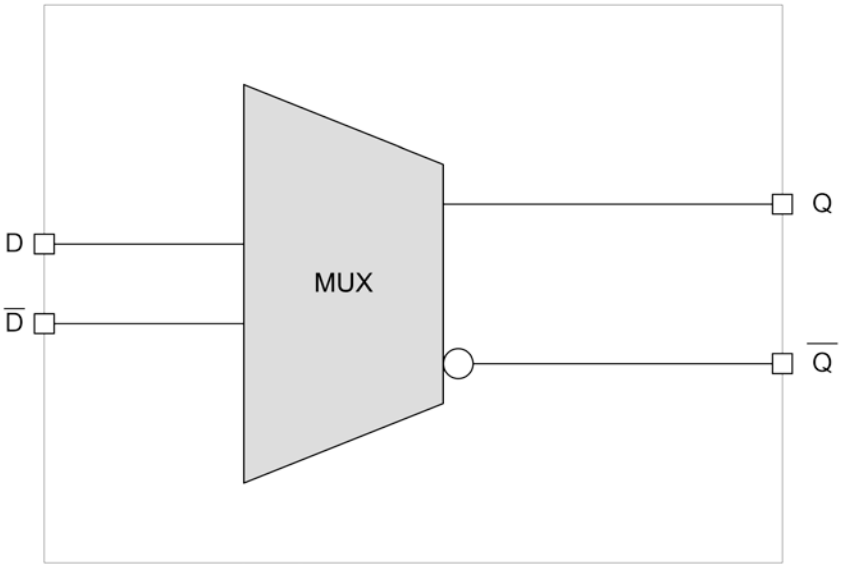
The AZ100LVEL58 is a 2:1 multiplexer. The device is pin and functionally equivalent to the AZ100EL58. With AC performance similar to the AZ100EL58 device, the LVEL58 is ideal for the low voltage applications that require the ultimate in AC performance. If desired, the select input can be directly driven from a CMOS output.

The AZ100LVEL58 is a direct replacement for the ON Semi MC100LVEL58.

FEATURES

- 440ps propagation delay
- Operating voltage of 3.0 to 5.5V
- Internal input pull-down resistors
- Direct replacement for ON Semi MC100LVEL58

BLOCK DIAGRAM



APPLICATIONS

- General applications

PACKAGE AVAILABILITY

- MLP8
- SOIC8
- MSOP8

Order Number	Package	Marking
AZ100LVEL58DG[1]	SOIC8	AZM100GLVEL58[2]
AZ100LVEL58TG[1]	MSOP8	AZHGLV58[2]
AZ100LVEL58N+[1]	MLP8	L5+[2]

[1] Tape & Reel - Add 'R1' at end of order number for 7in (1k parts), 'R2' (2.5k) for 13in

[2] See www.azmicrotek.com for date code format

PIN DESCRIPTION AND CONFIGURATION

Table 1 - Pin Description

Pin	Name	Type	Function
1	NC		
2	D0	Input	Data Input
3	D1	Input	Data Input
4	SEL	Input	Select Input
5	V_{EE}	Power	Negative Supply
6	$\overline{Q}$	Output	Data Output
7	Q	Output	Data Output
8	V_{CC}	Power	Positive Supply

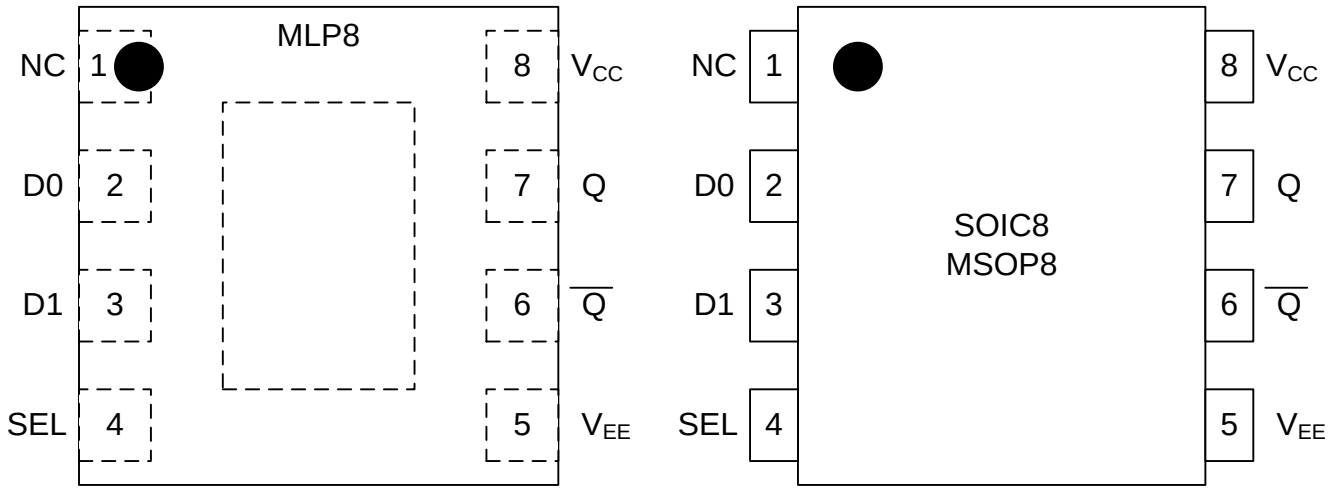


Figure 1 - Pin Configuration for MLP8 & SOIC8/MSOP8, respectively

ENGINEERING NOTES

Table 2 – Functionality Table

SEL	Q
HIGH	D0
LOW	D1

PERFORMANCE DATA

Table 3 – Absolute Maximum Ratings

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

Symbol	Characteristic	Condition	Rating	Unit
V_{CC}	PECL Power Supply	V_{EE} = 0V	0 to +8.0	V
V_I	PECL Input Voltage	V_{EE} = 0V	0 to +6.0	V
V_{EE}	ECL Power Supply	V_{CC} = 0V	-8.0 to 0	V
V_I	ECL Input Voltage	V_{CC} = 0V	-6.0 to 0	V
I_{OUT}	Output Current	Continuous	50	mA
		Surge	100	
T_A	Operating Temperature Range		-40 to +85	°C
T_{STG}	Storage Temperature Range		-65 to +150	°C
ESD_{HBM}	Human Body Model		2500	V
ESD_{MM}	Machine Model		200	V
ESD_{CDM}	Charged Device Model		2500	V

Table 4 – ECL DC Characteristics

ECL DC Characteristics (V_{EE} = -3.0V 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	-150			-150			-150			-150			µA
I_{EE}	Power Supply Current		21	28		21	28		21	28		23	30	mA

[1] Each output is terminated through a 50Ω resistor to V_{CC} -2V

Table 5 - LVPECL DC Characteristics

LVPECL DC Characteristics (V_{EE} = GND, 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]	2215	2295	2420	2275	2345	2420	2275	2345	2420	2275	2345	2420	mV
V_{OL}	Output LOW Voltage[1]	1470	1605	1745	1490	1595	1680	1490	1595	1680	1490	1595	1680	mV
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
I_{IH}	Input HIGH Current			150			150			150			150	µA
I_{IL}	Input LOW Current	-150			-150			-150			-150			µA
I_{EE}	Power Supply Current		21	28		21	28		21	28		23	30	mA

[1] Each output is terminated through a 50Ω resistor to V_{CC} -2V

Table 6 - PECL DC Characteristics

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]	3915	3995	4120	3975	4045	4120	3975	4045	4120	3975	4045	4120	mV
V_{OL}	Output LOW Voltage[1]	3170	3305	3445	3190	3295	3380	3190	3295	3380	3190	3295	3380	mV
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
I_{IH}	Input HIGH Current			150			150			150			150	µA
I_{IL}	Input LOW Current	-150			-150			-150			-150			µA
I_{EE}	Power Supply Current		27	33		27	33		27	33		31	37	mA

[1] Each output is terminated through a 50Ω resistor to V_{CC} -2V

Table 7 - AC Characteristics

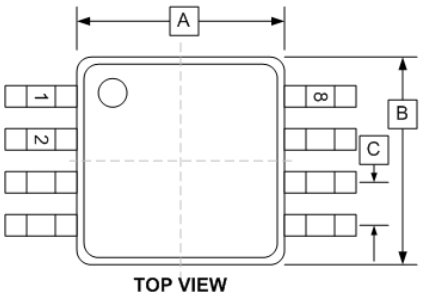
AC Characteristics (V_{EE} = -3.0V to -5.5V, V_{CC} = GND or V_{EE} = GND, V_{CC} = +3.0V to +5.0V)

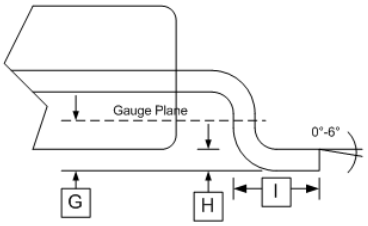
Symbol	Characteristic	-40 °C			0 °C			25 °C			85 °C			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
t_{PLH}/t_{PHL}	Propagation Delay to Output - D to Q	340	435	560				350	440	570	370	450	590	ps
	SEL to Q	540	455	570				360	460	580	380	470	600	ps
f_{max}	Max Toggle Freq								1.5					GHz
t_r/t_f	Output Rise/Fall Times Q (20%-80%)	100		260	100		260	100		260	100		260	ps

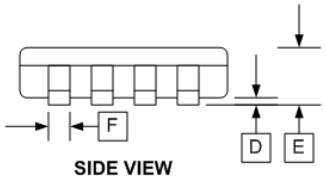
PACKAGE DIAGRAM

SOIC8
Green/RoHS compliant/Pb-Free
MSL=1

SOIC8 (D)



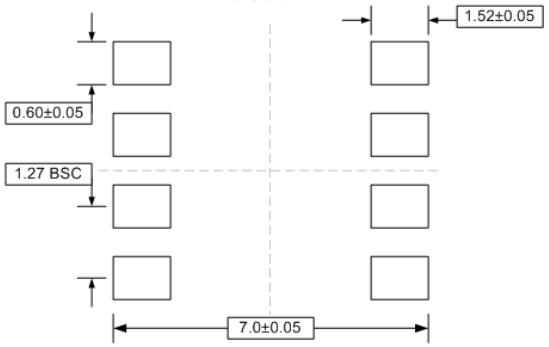




	INCHES	
DIM	MIN	MAX
A	0.189	0.196
B	0.150	0.157
C	0.050 BSC	
D	0.004	0.01
E	0.054	0.068
F	0.014	0.019
G	0.010	
H	0.0075	0.0098
I	0.016	0.034

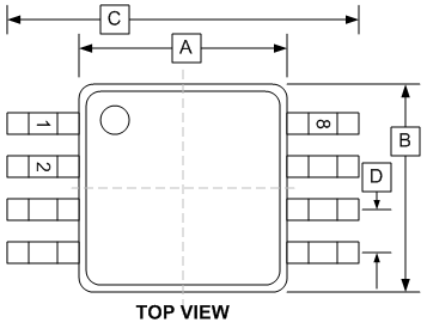
PCB LAND PATTERN/FOOTPRINT

Dimensions in mm

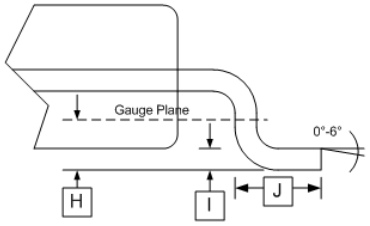


PACKAGE DIAGRAM

MSOP8
Green/RoHS compliant/Pb-Free
MSL=1



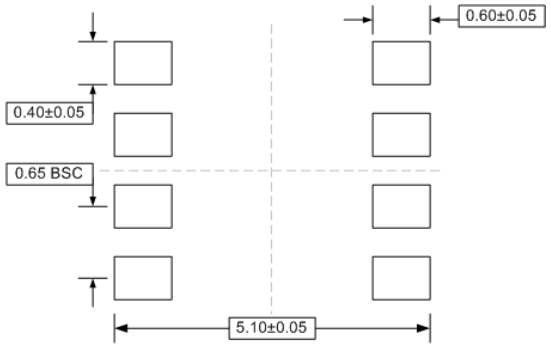
MSOP8 (T)



DIM	INCHES MIN	MAX
A	0.118±0.004	
B	0.118±0.004	
C	0.192±0.008	
D	0.0256 TYP	
E	0.004±0.002	
F	0.034±0.002	
G	0.009±0.014	
H	0.010	
I	0.006±0.002	
J	0.021±0.004	

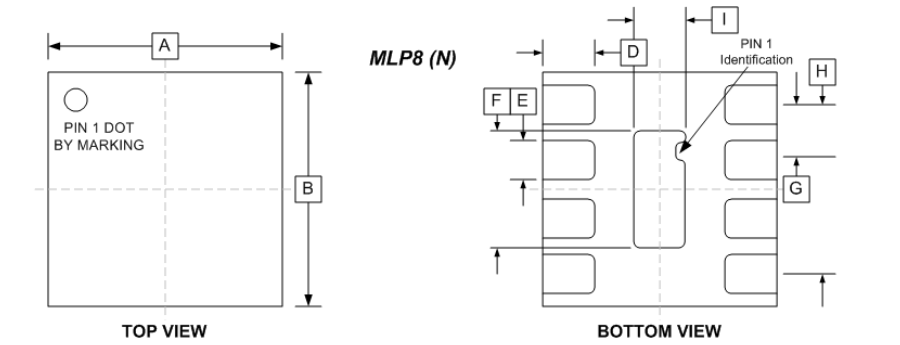
PCB LAND PATTERN/FOOTPRINT

Dimensions in mm

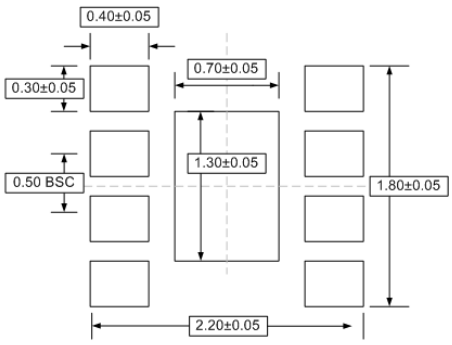


PACKAGE DIAGRAM

MLP8
Green/RoHS compliant/Pb-Free
MSL=1



	MILLIMETERS	
DIM	MIN	MAX
A	2.00±0.050	
B	2.00±0.050	
C	0.75±0.050	
C_1	0.00	0.05
C_2	0.203 Ref.	
D	0.35±0.050	
E	0.25±0.050	
F	1.20±0.050	
G	0.500 BSC	
H	1.500 REF	
I	0.60±0.050	



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