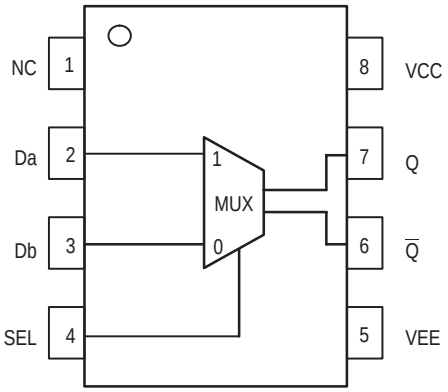
MC100LVEL58

2:1 Multiplexer

The MC100LVEL58 is a 2:1 multiplexer. The device is pin and functionally equivalent to the EL58 and works from a –3.3V supply. With AC performance similar to the EL58 device, the LVEL58 is ideal for low voltage applications which require the ultimate in AC performance.

- 440ps Typical Propagation Delays
- High Bandwidth Output Transitions
- PECL mode: 3.0V to 5.5V V_{CC} with V_{EE} = 0V
- ECL mode: 0V V_{CC} with V_{EE} = –3.0V to –5.5V
- 75kΩ Internal Input Pulldown Resistors
- >4000V ESD Protection
- Moisture Sensitivity Level 1, Indefinite Time Out of Drypack
  For Additional Information, See Application Note AND8003/D
- Flammability Rating: UL–94 code V–0 @ 1/8”,
  Oxygen Index 28 to 34
- Transistor Count: 729 devices

Logic Diagram and Pinout: 8–Lead SOIC (Top View)



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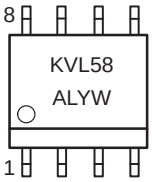
SO–8
D SUFFIX
CASE 751

MARKING DIAGRAM*



A = Assembly Location
L = Wafer Lot
Y = Year
W = Work Week

*For additional information, see Application Note AND8002/D

PIN NAMES

Pins	Function
Da, Db Q	Data Inputs Data Outputs

TRUTH TABLE

SEL	Data
H L	a b

ORDERING INFORMATION

Device	Package	Shipping
MC100LVEL58D	SO–8	98 Units / Rail
MC100LVEL58DR2	SO–8	2500 Units / Reel

ABSOLUTE MAXIMUM RATINGS[1]

Symbol	Characteristic	Rating	Unit
V_{EE}	Power Supply (V_{CC} = 0V)	–8.0 to 0	VDC
V_I	Input Voltage (V_{CC} = 0V)	0 to –6.0	VDC
I_{out}	Output Current Continuous Surge	50 100	mA
T_A	Operating Temperature Range	–40 to +85	°C
V_{EE}	Operating Range[1,2]	–5.7 to –3.0	V
θ_{JA}	Thermal Resistance (Junction–to–Ambient) Still Air 500lfpm	190 130	°C/W
θ_{JC}	Thermal Resistance (Junction–to–Case)	41 to 44 ± 5%	°C/W
T_{sol}	Solder Temperature (<2 to 3 Seconds: 245°C desired)	265	°C

1. Absolute maximum rating, beyond which, device life may be impaired, unless otherwise specified on an individual data sheet.
2. Parametric values specified at: 100EL Series: –4.20V to –5.50V
   10EL Series: –4.94V to –5.50V

MC100LVEL58
DC CHARACTERISTICS (V_{EE} = VEE(min) to VEE(max); V_{CC} = GND)

		–40°C			0°C			25°C			85°C			
Symbol	Characteristic	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Unit
I_{EE}	Power Supply Current		21	28		21	28		21	28		23	30	mA
V_{EE}	Power Supply Voltage	3.0		3.8	3.0		3.8	3.0		3.8	3.0		3.8	V
I_{IH}	Input HIGH Current			150			150			150			150	μA

MC100LVEL58
AC CHARACTERISTICS (V_{EE} = VEE(min) to VEE(max); V_{CC} = GND)

		–40°C			0°C			25°C			85°C			
Symbol	Characteristic	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Unit
t_{PLH} t_{PHL}	Propagation D Q Delay SEL Q	340 350	435 455	560 570	340 350	435 455	560 570	350 360	440 460	570 580	370 380	450 470	590 600	ps
t_r t_f	Output Rise/Fall Times Q (20% – 80%)	100		320	100		320	100		320	100		320	ps

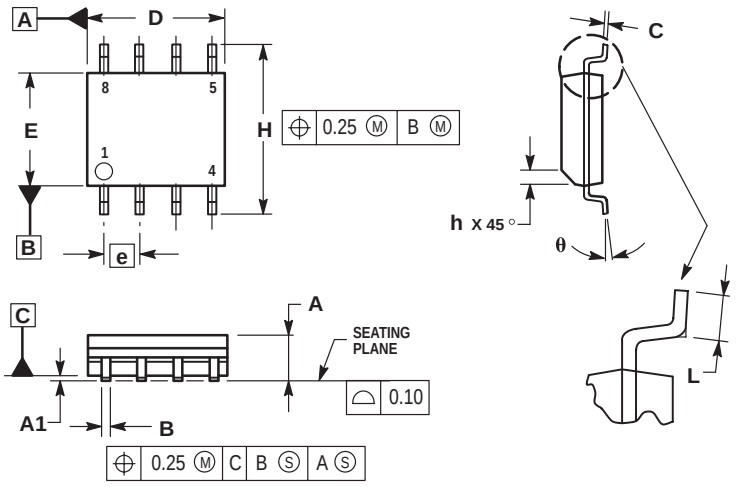
DC CHARACTERISTICS
(V_{EE} = V_{EE}(min) – V_{EE}(max); V_{CC} = GND[1]), All input and output voltage parameters vary 1:1 with V_{CC}

		–40°C			0°C to 85°C				
Symbol	Characteristic	Min	Typ	Max	Min	Typ	Max	Unit	Condition
V_{OH}	Output HIGH Voltage(2)	–1085	–1005	–880	–1025	–955	–880	mV	V_{IN} = V_{IH}(max)
V_{OL}	Output LOW Voltage(2)	–1830	–1695	–1555	–1810	–1705	–1620	mV	or V_{IL}(min)
V_{OHA}	Output HIGH Voltage(2)	–1095	—	—	–1035	—	—	mV	V_{IN} = V_{IH}(max)
V_{OLA}	Output LOW Voltage(2)	—	—	–1555	—	—	–1610	mV	or V_{IL}(min)
V_{IH}	Input HIGH Voltage	–1165	—	–880	–1165	—	–880	mV	
V_{IL}	Input LOW Voltage	–1810	—	–1475	–1810	—	–1475	mV	
I_{IL}	Input LOW Current	0.5	—	—	0.5	—	—	μA	V_{IN} = V_{IL}(max)

1. V_{CC} = 0V, V_{EE} = V_{EEmin} to V_{EEmax}, all other pins floating.
2. All loading with 50 ohms to V_{CC}–2.0 volts.

PACKAGE DIMENSIONS

SO–8
D SUFFIX
CASE 751–06
ISSUE T



NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. DIMENSIONS ARE IN MILLIMETER.
3. DIMENSION D AND E DO NOT INCLUDE MOLD PROTRUSION.
4. MAXIMUM MOLD PROTRUSION 0.15 PER SIDE.
5. DIMENSION B DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 TOTAL IN EXCESS OF THE B DIMENSION AT MAXIMUM MATERIAL CONDITION.

	MILLIMETERS	
DIM	MIN	MAX
A	1.35	1.75
A1	0.10	0.25
B	0.35	0.49
C	0.19	0.25
D	4.80	5.00
E	3.80	4.00
e	1.27 BSC	
H	5.80	6.20
h	0.25	0.50
L	0.40	1.25
θ	0°	7°

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