

# MC100LVEL32

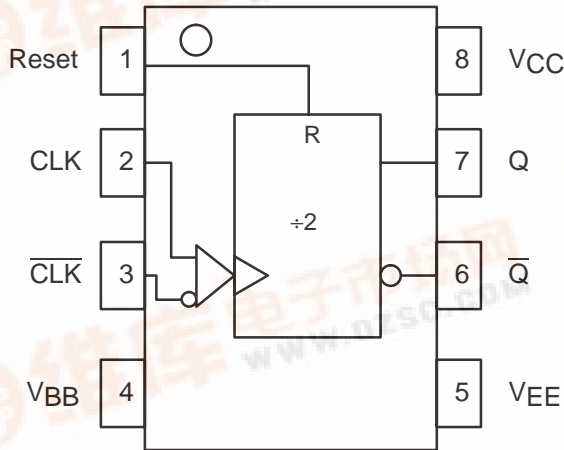
## ÷2 Divider

The MC100LVEL32 is an integrated ÷2 divider. The differential clock inputs and the V<sub>BB</sub> allow a differential, single-ended or AC coupled interface to the device. If used, the V<sub>BB</sub> output should be bypassed to ground with a 0.01µF capacitor. Also note that the V<sub>BB</sub> is designed to be used as an input bias on the LVEL32 only, the V<sub>BB</sub> output has limited current sink and source capability. The LVEL32 is functionally identical to the EL32, but operates from a low voltage supply.

The reset pin is asynchronous and is asserted on the rising edge. Upon power-up, the internal flip-flop will attain a random state; the reset allows for the synchronization of multiple EL32's in a system.

- 510ps Propagation Delay
- 3.0GHz Toggle Frequency
- High Bandwidth Output Transitions
- 75kΩ Internal Input Pulldown Resistors
- >1000V ESD Protection

### LOGIC DIAGRAM AND PINOUT ASSIGNMENT



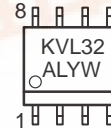
**ON Semiconductor**

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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 DESCRIPTION

PIN	FUNCTION
CLK	Clock Inputs
Reset	Asynch Reset
V <sub>BB</sub>	Ref Voltage Output
Q	Data Outputs

### ORDERING INFORMATION

Device	Package	Shipping
MC100LVEL32D	SO-8	98 Units/Rail
MC100LVEL32DR2	SO-8	2500 Tape & Reel



## MC100LVEL32

### DC CHARACTERISTICS ( $V_{EE} = V_{EE(\min)}$ to $V_{EE(\max)}$ ; $V_{CC} = \text{GND}$ )

Symbol	Characteristic	-40°C			0°C			25°C			85°C			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
$I_{EE}$	Power Supply Current		25			25			25			25		mA
$V_{EE}$	Power Supply Voltage		-3.0		-3.0	-3.3	-3.8	-3.0	-3.3	-3.8	-3.0	-3.3	-3.8	V
$V_{BB}$	Output Reference Voltage	-1.38		-1.26	-1.38		-1.26	-1.38		-1.26	-1.38		-1.26	V
$I_{IH}$	Input HIGH Current			150			150			150			150	$\mu\text{A}$

### AC CHARACTERISTICS ( $V_{EE} = V_{EE(\min)}$ to $V_{EE(\max)}$ ; $V_{CC} = \text{GND}$ )

Symbol	Characteristic	-40°C			0°C			25°C			85°C			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
$f_{\text{MAX}}$	Maximum Toggle Frequency		3.0			3.0			3.0			3.0		GHz
$t_{\text{PLH}}$ $t_{\text{PHL}}$	Propagation Delay CLK to Q (Diff) CLK to Q (S.E.) Reset to Q	350 300 340	500 500 540	530 580 540	360 310 350	500 500 540	540 590 550	370 320 350	510 510 540	550 600 550	410 360 380	540 540 550	590 640 580	ps
$V_{\text{PP}}$	Minimum Input Swing <sup>1</sup>	150			150			150			150			mV
$t_r$ $t_f$	Output Rise/Fall Times Q (20% – 80%)		225			225			225			225		ps

1. Minimum input swing for which AC parameters are guaranteed.

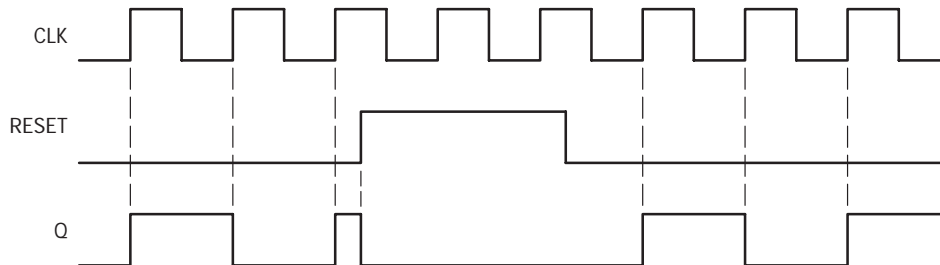
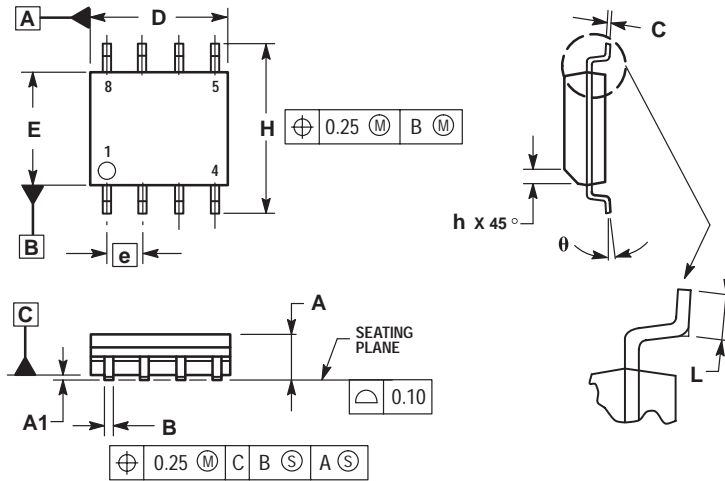


Figure 1. Timing Diagram

# MC100LVEL32

## PACKAGE DIMENSIONS

SO-8  
D SUFFIX  
PLASTIC SOIC PACKAGE  
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.

DIM	MILLIMETERS	
	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
$\theta$	0°	7°

# MC100LVEL32

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