

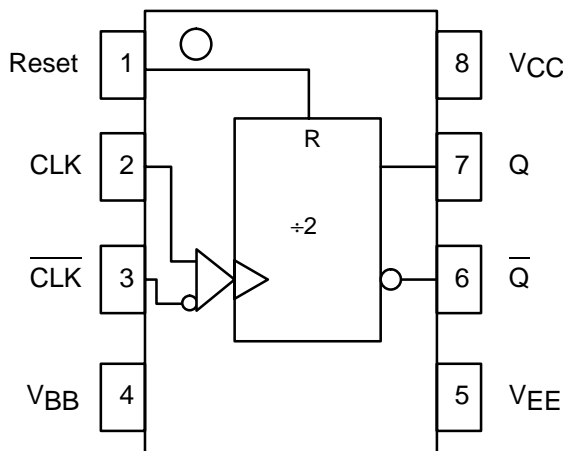
*Product Preview*  
**÷2 Divider**

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**



**MC100LVEL32**



**D SUFFIX**  
PLASTIC SOIC PACKAGE  
CASE 751-05

**PIN DESCRIPTION**

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

This document contains information on a product under development. Motorola reserves the right to change or discontinue this product without notice.



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

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

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 Reset to Q		500 540			500 540			510 540			540 550		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.

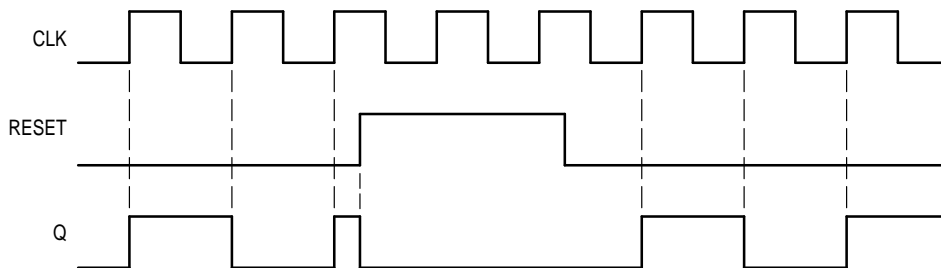


Figure 1. Timing Diagram

OUTLINE DIMENSIONS

D SUFFIX  
PLASTIC SOIC PACKAGE  
CASE 751-05  
ISSUE P



NOTES:

1. DIMENSIONS A AND B ARE DATUMS AND T IS A DATUM SURFACE.
2. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
3. DIMENSIONS ARE IN MILLIMETER.
4. DIMENSION A AND B DO NOT INCLUDE MOLD PROTRUSION.
5. MAXIMUM MOLD PROTRUSION 0.15 PER SIDE.
6. DIMENSION D DOES NOT INCLUDE MOLD PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.

DIM	MILLIMETERS	
	MIN	MAX
A	4.80	5.00
B	3.80	4.00
C	1.35	1.75
D	0.35	0.49
F	0.40	1.25
G	1.27 BSC	
J	0.18	0.25
K	0.10	0.25
M	0°	7°
P	5.80	6.20
R	0.25	0.50

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