

FREQUENCY STABILITY

OVER:

OPERATING TEMP. RANGE: See note 1

OVERALL STABILITY: $< \pm 300\text{ppm}^*$

INCLUDING:

- OVER OPERATING TEMPERATURE RANGE
- ADJUSTMENT @ 25°C
- AGING (24 HOURS @ 175°C)
- STABILITY OVER SUPPLY VOLTAGE $\pm 10\%$
- STABILITY OVER LOAD (MIN. TO MAX.)

POWER SUPPLY

SUPPLY VOLTAGE: $V_{dd} = 5V \pm 10\%^*$ (3.3V available)

INPUT CURRENT: $< 10\text{mA}$ ($f < 20\text{MHz}$)
 $< 30\text{mA}$ ($f > 20\text{MHz}$)^{*}

OUTPUT

OUTPUT SIGNAL: HC-MOS compatible ($f < 20\text{MHz}$)^{*}

AC-MOS compatible ($f > 20\text{MHz}$)^{*}

SYMMETRY: 40 / 60% (min.) @ $V_{dd} / 2^*$

RISE & FALL TIME: $t_r < 7\text{ns}$ $t_f < 7\text{ns}$ ($f < 20\text{MHz}$)^{*}

$t_r < 7\text{ns}$ $t_f < 7\text{ns}$ ($f > 20\text{MHz}$)^{*}

LEVEL "0" & "1": $< 0.4V$ $> V_{dd} - 0.5V$

START-UP TIME: $< 5\text{ms}$

FAN OUT (LOAD): 25pF max^*

ENVIRONMENT

OPERABLE TEMP. RANGE: -55 to $+175^\circ\text{C}$ (during 72 hours)

STORAGE TEMP. RANGE: -65 to $+125^\circ\text{C}$

VIBRATIONS: 10 to 2000Hz / 10g

SHOCKS: 5000g, 0.3ms, $\frac{1}{2}$ sine

PACKAGE: Ceramic

PACKAGE DIMENSIONS: $8.0 \times 3.7 \times 2.0\text{mm}$

(see packaging info)

PROCESSING: Reflow soldering $260^\circ\text{C} / 10\text{s max.}$

(see packaging info)

MISCELLANEOUS

* Customer's specification on request

Note 1: Operating Temperature Range



MCSO1E-D: -55 to $+175^\circ\text{C}$

Option 1: Enable / Disable (on request)

See application circuit on page 2 for details

Pin 1:	Pin 3 (Foot):
Open	Clock
H	Clock
L	High Z
Not available for $f < 500\text{kHz}$	

Marking Example

	
MCSO1E-D	E/D
33.000 MHz	07.12
○	○ (PIN 1)
Type	Option 1
Frequency	Date Code

Ordering Information Example

MCSO1	E - D	33MHz	E/D	xxx
Oscillator Type	Oscillator Version	Oscillator Output Frequency	Option 1:	Customer spec N°
MCSO1 = Miniature Surface Mount Clock Crystal Oscillator	E = Extensive Temp. range		E/D = Enable / Disable	
	Temperature Range			
	D = -55 to $+175^\circ\text{C}$			
	X = Custom spec.			

Date : Oct. 2005 Revision No. : 1.1 Revision Date : 05-07

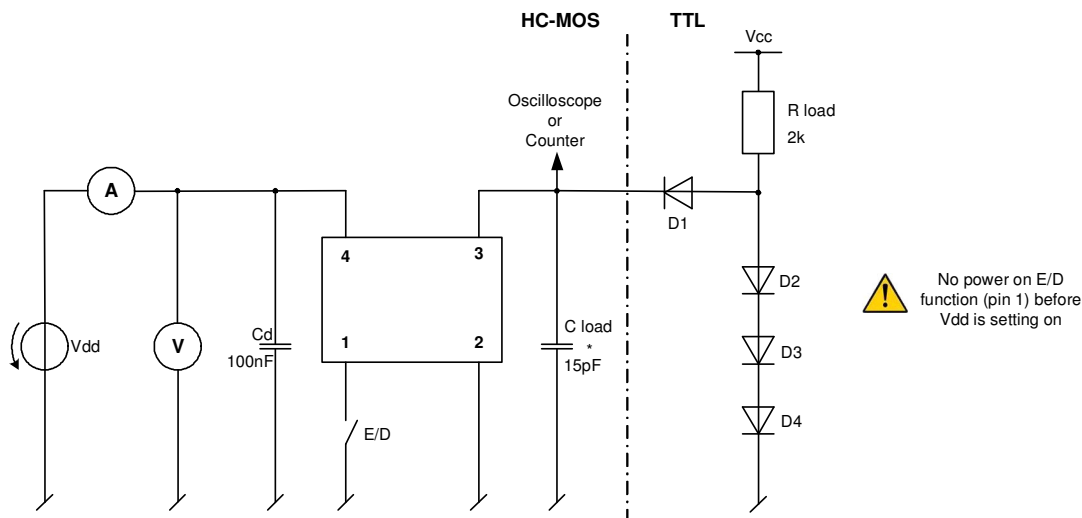
Page 1 / 2

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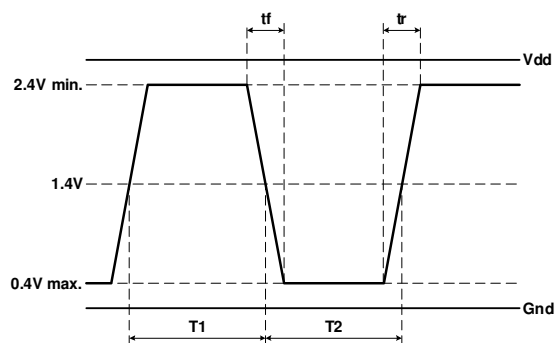
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Application and Test Circuit:

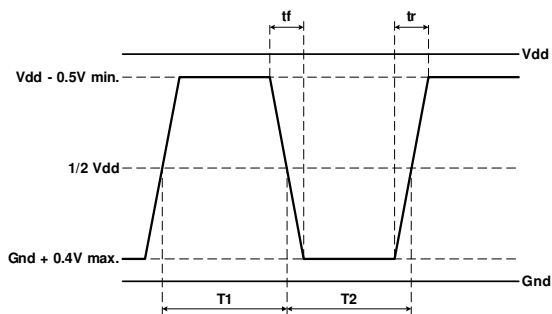


Waveform Output:

Waveshape TTL



Waveshape HC-MOS



$$Duty\ Cycle = 100 \times \frac{T1}{T1 + T2} [\%]$$

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