

FREQUENCY STABILITY

OVER:

OPERATING TEMP. RANGE: See note 1

OVERALL STABILITY: $< \pm 100\text{ppm}^*$

INCLUDING:

- OVER OPERATING TEMPERATURE RANGE
- ADJUSTMENT @ 25°C
- LONG TERM AGING (10 YEARS)
- STABILITY OVER SUPPLY VOLTAGE $\pm 5\%$
- STABILITY OVER LOAD (MIN. TO MAX.)

POWER SUPPLY

SUPPLY VOLTAGE: $V_{dd} = 3.3\text{V} \pm 10\%^*$

INPUT CURRENT: $< 10\text{mA}^*$

OUTPUT

OUTPUT SIGNAL: HC-MOS compatible *

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

RISE & FALL TIME: $t_r < 7\text{ns}$ $t_f < 7\text{ns}^*$

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

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

FAN OUT (LOAD): 10 TTL / LS *

ENVIRONMENT

OPERABLE TEMP. RANGE: -55 to $+125^\circ\text{C}$

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

MCSO1V-A: 0 to $+70^\circ\text{C}$

MCSO1V-B: -40 to $+85^\circ\text{C}$

MCSO1V-C: -55 to $+125^\circ\text{C}$

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

	E/D		Option 1
MCSO1V-B	05.44	Type	Frequency
20.000 MHz		Frequency	Date Code
O		O (PIN 1)	

Ordering Information Example

MCSO1	V	B	20MHz	E/D	xxx
Oscillator Type					Customer spec N°
MCSO1 = Miniature Surface Mount Clock Crystal Oscillator					
Oscillator Version					Option 1:
V = Low Power Voltage					E/D = Enable / Disable
Temperature Range					
A = 0 to $+70^\circ\text{C}$					
B = -40 to $+85^\circ\text{C}$					
C = -55 to $+125^\circ\text{C}$					
X = Custom spec.					
			Oscillator Output Frequency		

STANDARD FREQUENCIES [MHz]

10.0000	10.1500	10.2300	10.2400	11.0592	12.0000
12.2880	12.8000	13.0000	14.7456	16.0000	16.3840
18.4320	19.2000	19.6608	20.0000		& sub multiple

Date :	June 2003	Revision No. : 7	Revision Date : 11-05
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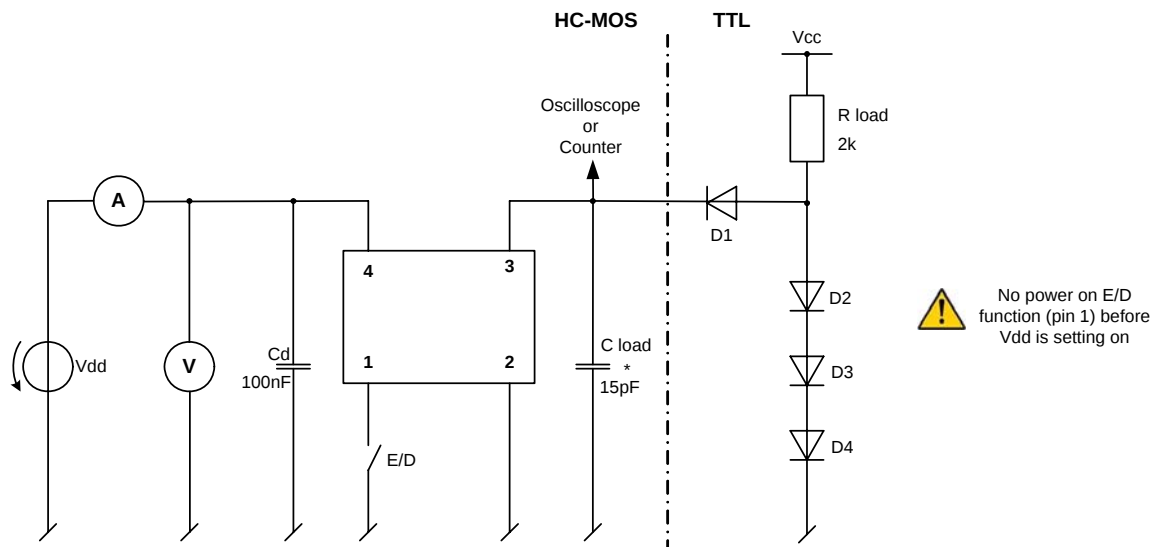
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In accordance with our policy of continuous development and improvement,
we reserve the right to modify the design or the specifications of our products without prior notice.

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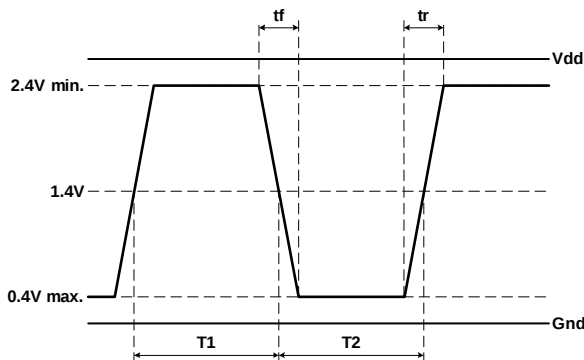
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Application and Test Circuit:

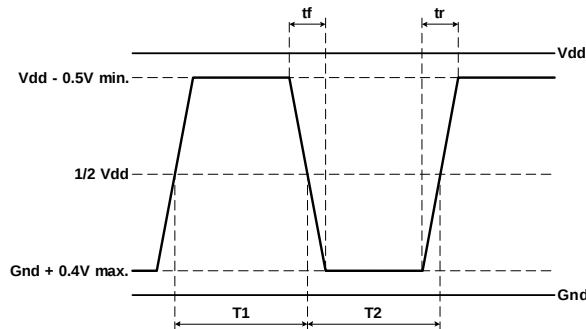


Waveform Output:

Waveshape TTL



Waveshape HC-MOS



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

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