

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 $\pm 10\%$
- STABILITY OVER LOAD (MIN. TO MAX.)

POWER SUPPLY

SUPPLY VOLTAGE: $V_{dd} = 5V \pm 10\%^*$
INPUT CURRENT: $< 15\text{mA}^*$

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": $< 0.4V$ $> V_{dd} - 0.5V$
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°C / 10s max.
(see packaging info)

MISCELLANEOUS

* Customer's specification on request

Note 1: Operating Temperature Range

MCSO1-A: 0 to $+70^\circ\text{C}$
MCSO1-B: -40 to $+85^\circ\text{C}$
MCSO1-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

Micro Crystal		Micro Crystal	
Type	Option 1	Type	Option 1
MCSO1-B	E/D	20.000 MHz	09.40
○		○ (PIN 1)	

Ordering Information Example

MCSO1		- B		20MHz		E/D		xxx	
Oscillator Type	MCSO1 = Miniature Surface Mount Clock Crystal Oscillator	Oscillator Version		Temperature Range		Oscillator Output Frequency		Customer spec N°	
								Option 1:	E/D = Enable / Disable

A = 0 to $+70^\circ\text{C}$
B = -40 to $+85^\circ\text{C}$
C = -55 to $+125^\circ\text{C}$
X = Custom spec.

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	

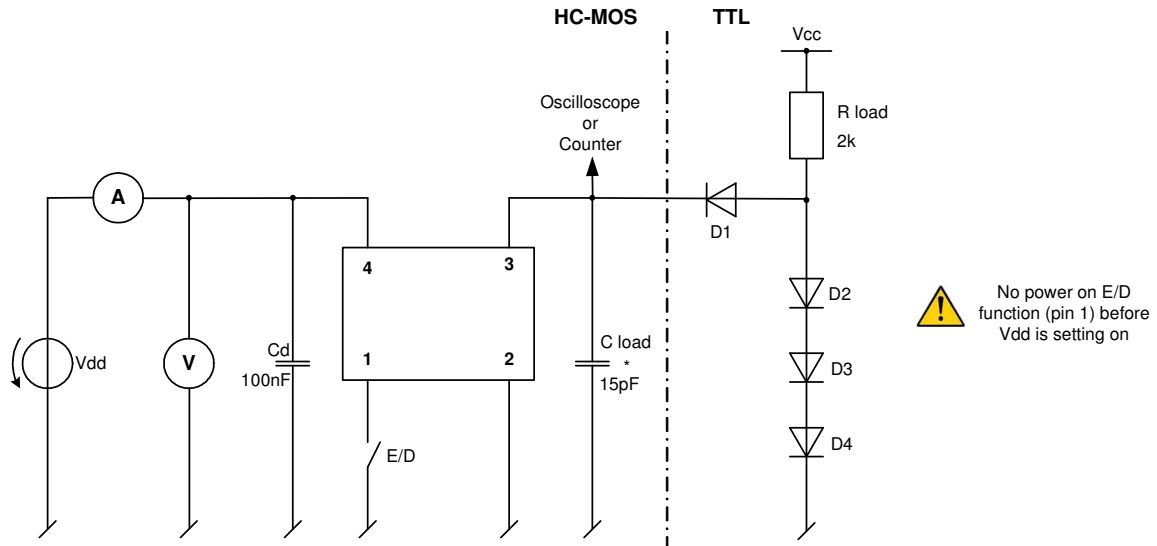
Date :	June 2003	Revision No. :	8	Revision Date :	10-09
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In accordance with our policy of continuous development and improvement,
we reserve the right to modify the design or the specifications of our products without prior notice.

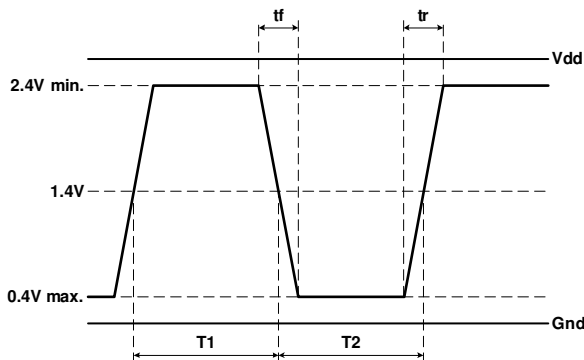
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Application and Test Circuit:

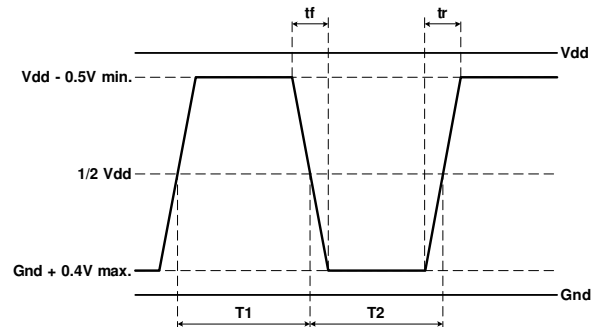


Waveform Output:

Waveshape TTL



Waveshape HC-MOS



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

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