

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: $< 30\text{mA}^*$

OUTPUT

OUTPUT SIGNAL: AC-MOS compatible *
SYMMETRY: 40 / 60% (min.) @ $V_{dd} / 2^*$
RISE & FALL TIME: $t_r < 3\text{ns}$ $t_f < 3\text{ns}^*$
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 *
JITTER: $< 1\text{ps}$

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

MCSO1FV-A: 0 to $+70^\circ\text{C}$
MCSO1FV-B: -40 to $+85^\circ\text{C}$
MCSO1FV-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

Marking Example

Micro Crystal		Micro Crystal	
MCSO1FV-B	E/D	Type	Option 1
160.000 MHz	09.40	Frequency	Date Code
○		○ (PIN 1)	

Ordering Information Example

MCSO1		FV -	B	160MHz	E/D	xxx
Oscillator Type		Oscillator Version		Customer spec N°		
MCSO1 = Miniature Surface Mount Clock Crystal Oscillator		F = Low Jitter V = Low Power Voltage		Option 1: E/D = Enable / Disable		
Temperature Range		Oscillator Output Frequency				
A = 0 to $+70^\circ\text{C}$ B = -40 to 85°C C = -55 to 125°C X = Custom spec.						

STANDARD FREQUENCIES [MHz]

Date :	June 2003	Revision No. : 4	Revision Date : 10-09
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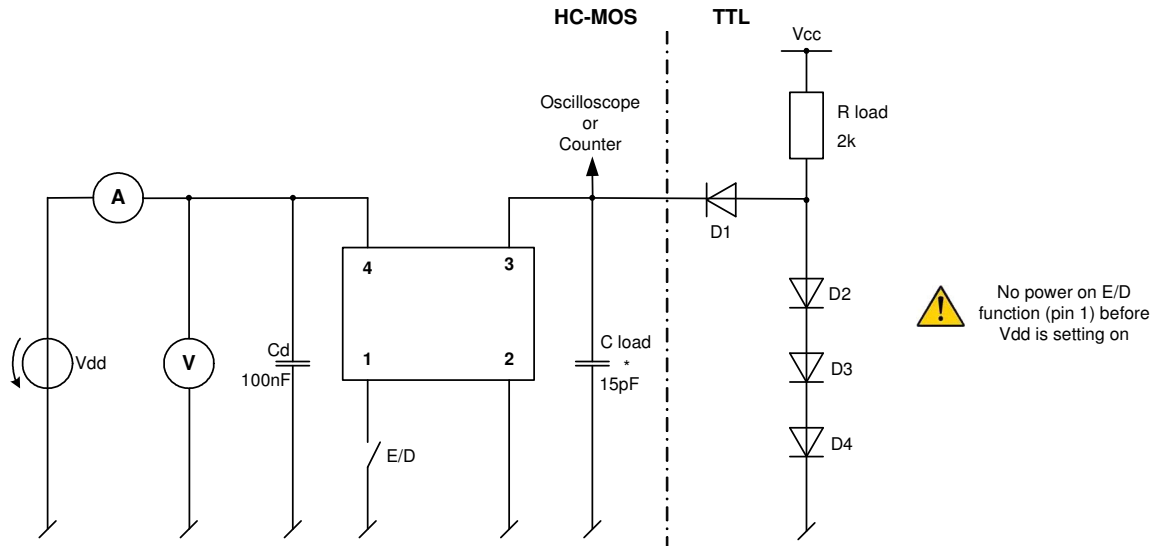
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In accordance with our policy of continuous development and improvement,
we reserve the right to modify the design or the specifications of our products without prior notice.

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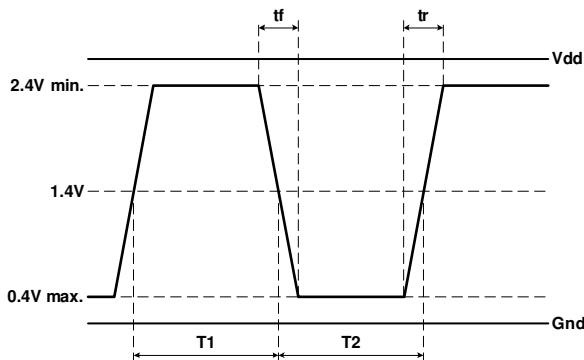
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Application and Test Circuit:

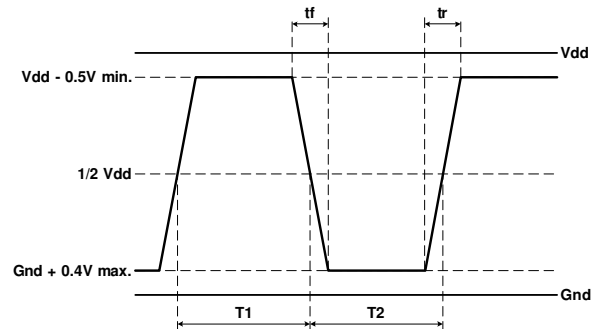


Waveform Output:

Waveshape TTL



Waveshape HC-MOS



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

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