

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: $V_{dd} = 3.3V \pm 5\%^*$

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": $< 0.4V$ $> V_{dd} - 0.5V$

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: 14.1 x 9.3 x 2.4mm

(see packaging info)

PROCESSING: Reflow soldering 260°C / 10s max.

(see packaging info)

MISCELLANEOUS

* Customer's specification on request

Note 1: Operating Temperature Range

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

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

MCSOV-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 $f < 500\text{kHz}$	

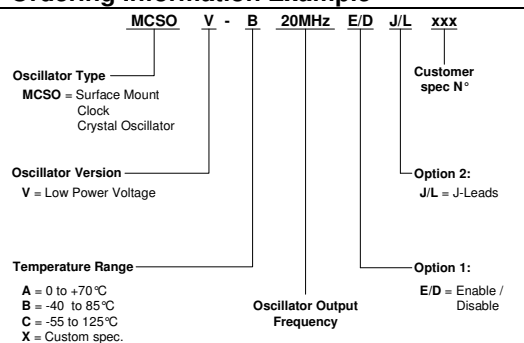
Option 2: J / Leads (on request)

With tinned J / Leads pins
Height: 3.8mm included J / Leads

Marking Example

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

Ordering Information Example



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

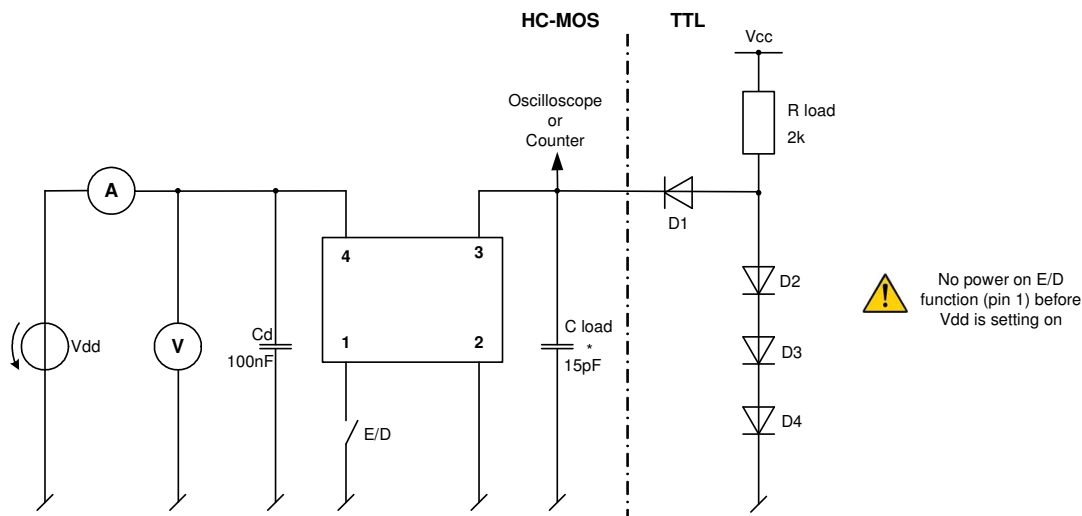
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In accordance with our policy of continuous development and improvement,
we reserve the right to modify the design or the specifications of our products without prior notice.

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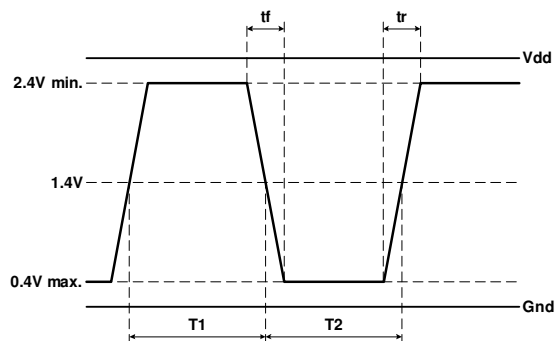
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Application and Test Circuit:

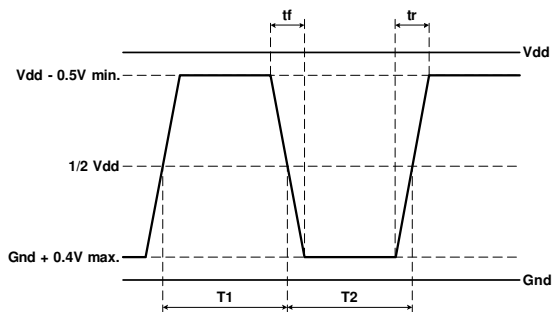


Waveform Output:

Waveshape TTL



Waveshape HC-MOS



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

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