

FREQUENCY STABILITY

OVER:

OPERATING TEMP. RANGE: See note 1
OVERALL STABILITY: $< \pm 50\text{ppm}^*$
INCLUDING:

- OVER OPERATING TEMPERATURE RANGE
- ADJUSTMENT @ 25°C
- LONG TERM AGING (1 YEARS)
- STABILITY OVER SUPPLY VOLTAGE $\pm 10\%$
- STABILITY OVER LOAD (MIN. TO MAX.)

POWER SUPPLY

SUPPLY VOLTAGE: $V_{dd} = 5V \pm 10\%^*$
INPUT CURRENT: $< 50\text{mA}^*$

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

MCSO1H-A: 0 to $+70^\circ\text{C}$
MCSO1H-B: -40 to $+85^\circ\text{C}$
MCSO1H-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 (Fout):
Open	Clock
H	Clock
L	High Z

Marking Example

Micro Crystal		Micro Crystal	
MCSO1H-B	E/D	Type	Option 1
160.000 MHz	09.40	Frequency	Date Code
○		○ (PIN 1)	

Ordering Information Example

MCSO1	HT	B	160MHz	E/D	xxx
Oscillator Type					Customer spec N°
MCSO1 = Miniature Surface Mount Clock Crystal Oscillator					
Oscillator Version					Option 1:
H = High Frequency					E/D = Enable / Disable
T = Tight Tolerance					
Temperature Range					
A = 0 to $+70^\circ\text{C}$					
B = -40 to 85°C					
C = -55 to 125°C					
X = Custom spec.					
			Oscillator Output Frequency		

STANDARD FREQUENCIES [MHz]

40.0000	40.6000	40.9600	44.2368	48.0000	49.1520
50.0000	50.7500	51.1500	51.2000	52.0000	55.2960
58.9824	60.0000	60.9000	61.3800	61.4400	64.0000
65.0000	65.5360	66.3552	72.0000	73.7280	76.8000
78.0000	80.0000	81.2000	81.8400	81.9200	88.4736
90.0000	96.0000	98.3040	100.0000	102.4000	104.0000
108.0000	110.5920	117.9640	120.0000	125.0000	128.0000
131.0720	132.7104	144.0000	150.0000	160.0000	

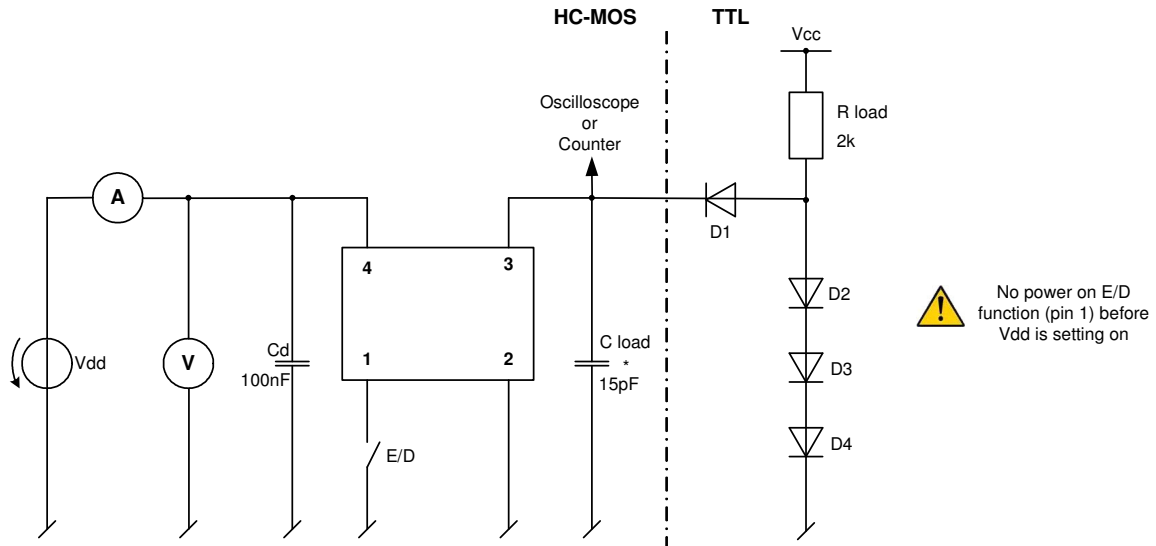
Date :	June 2003	Revision No. : 2	Revision Date : 06-10
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Page 1 / 2

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.

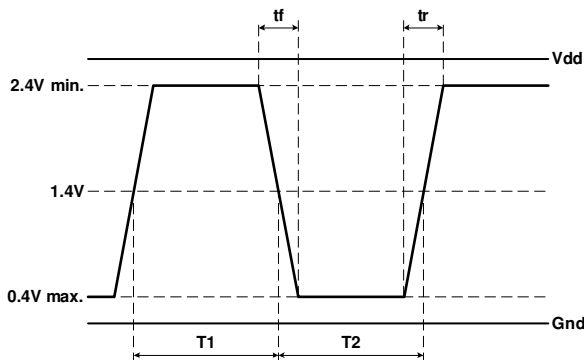
Headquarters:	Micro Crystal AG	Tel.	+41 32 655 82 82
	Mühlestrasse 14	Fax	+41 32 655 80 90
	CH-2540 Grenchen	Internet	www.microcrystal.ch
	Switzerland	Email	sales@microcrystal.ch

Application and Test Circuit:

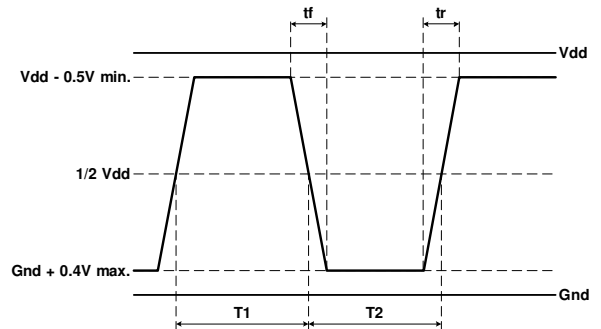


Waveform Output:

Waveshape TTL



Waveshape HC-MOS



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

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Page 2 / 2

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Headquarters: Micro Crystal AG
Mühlestrasse 14
CH-2540 Grenchen
Switzerland

Tel. +41 32 655 82 82
Fax +41 32 655 80 90
Internet www.microcrystal.ch
Email sales@microcrystal.ch