

## 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  $260^\circ\text{C} / 10\text{s max.}$   
(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 (Fout)::
Open	Clock
H	Clock
L	High Z
Not available for $f < 500\text{kHz}$	

## Marking Example

		
MCSO1-B	E/D	Type
20.000 MHz	05.44	Frequency
○		Option 1 Date Code ○ (PIN 1)

## Ordering Information Example

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

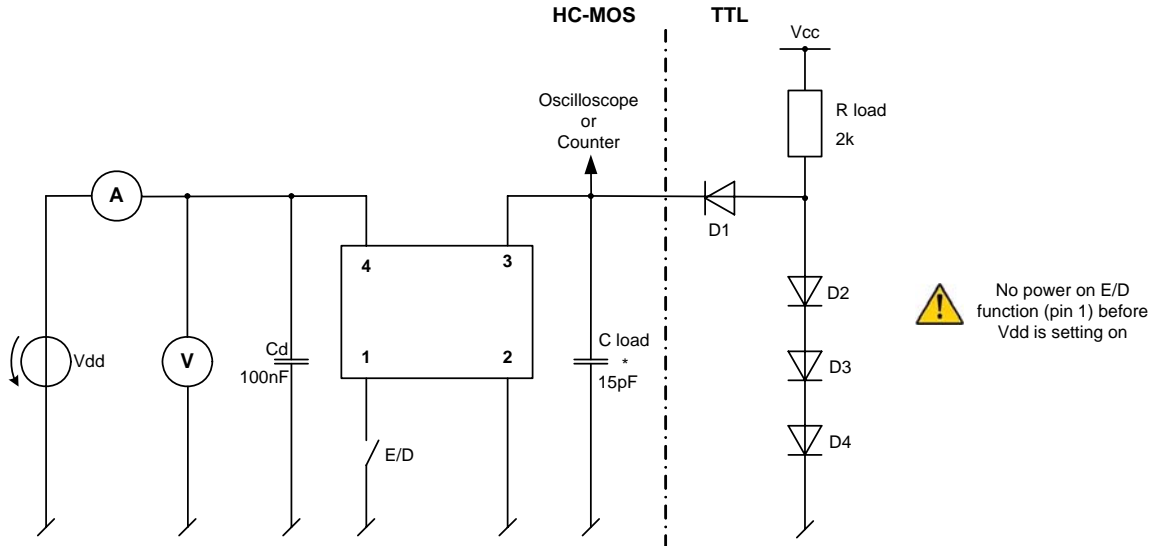
Date :	June 2003	Revision No. : 7	Revision Date : 11-05
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Page 1 / 2

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.

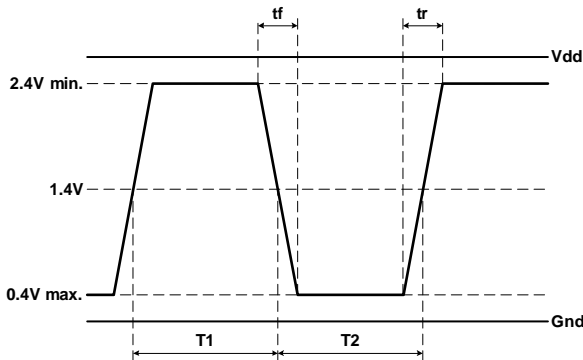
Headquarters:	Micro Crystal	Tel.	+41 32 655 82 82
	Div. of ETA SA	Fax	+41 32 655 80 90
	Mühlestrasse 14	Internet	www.microcrystal.ch
	CH-2540 Grenchen	Email	sales@microcrystal.ch
	Switzerland		

**Application and Test Circuit:**

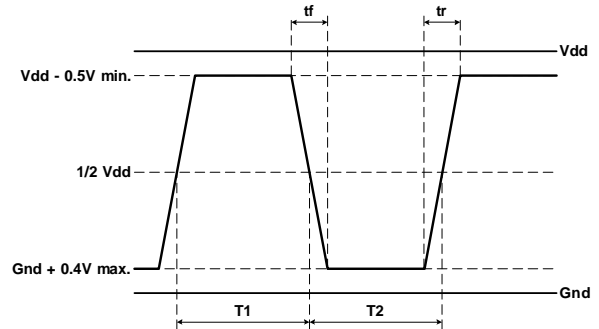


**Waveform Output:**

**Waveshape TTL**



**Waveshape HC-MOS**



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

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Headquarters:

Micro Crystal  
Div. of ETA SA  
Mühlestrasse 14  
CH-2540 Grenchen  
Switzerland

Tel. +41 32 655 82 82  
Fax +41 32 655 80 90  
Internet [www.microcrystal.ch](http://www.microcrystal.ch)  
Email [sales@microcrystal.ch](mailto:sales@microcrystal.ch)