

<b>FREQUENCY STABILITY</b>	
OVER:	
OPERATING TEMP. RANGE:	See note 1
OVERALL STABILITY:	< $\pm 300$ ppm *
INCLUDING:	
<ul style="list-style-type: none"> <li>OVER OPERATING TEMPERATURE RANGE</li> <li>ADJUSTMENT @ 25 °C</li> <li>AGING (24 HOURS @ 175 °C)</li> <li>STABILITY OVER SUPPLY VOLTAGE <math>\pm 10\%</math></li> <li>STABILITY OVER LOAD (MIN. TO MAX.)</li> </ul>	
<b>POWER SUPPLY</b>	
SUPPLY VOLTAGE:	Vdd = 5V $\pm 10\%$ or 3.3V (V)
INPUT CURRENT:	< 10mA (f < 20MHz) * < 30mA (f > 20MHz) *
<b>OUTPUT</b>	
OUTPUT SIGNAL:	HC-MOS compatible (f < 20MHz) * AC-MOS compatible (f > 20MHz) *
SYMMETRY:	40 / 60% (min.) @ Vdd / 2 *
RISE & FALL TIME:	tr < 7ns tf < 7ns (f < 20MHz) * tr < 7ns tf < 7ns (f > 20MHz) *
LEVEL "0" & "1":	< 0.4V > Vdd - 0.5V
START-UP TIME:	< 5ms
FAN OUT (LOAD):	25pF max *
<b>ENVIRONMENT</b>	
OPERABLE TEMP. RANGE:	-55 to +175 °C (during 72 hours)
STORAGE TEMP. RANGE:	-65 to +125 °C
VIBRATIONS:	10 to 2000Hz / 10g
SHOCKS:	5000g, 0.3ms, 1/2 sine
PACKAGE:	Ceramic
PACKAGE DIMENSIONS:	8.0 x 3.7 x 2.0mm (see packaging info)
PROCESSING:	Reflow soldering 260 °C / 10s max. (see packaging info)
<b>MISCELLANEOUS</b>	
* Customer's specification on request	

<b>Note 1: Operating Temperature Range</b>	
MCSO1E-D:	-55 to +175 °C

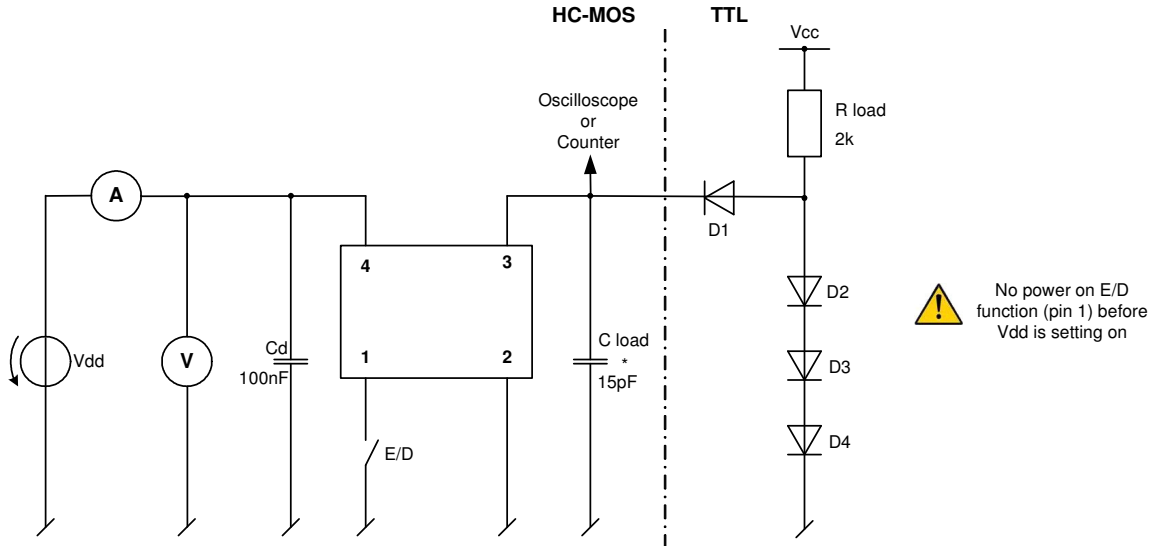
<b>Option 1: Enable / Disable (on request)</b>	
See application circuit on page 2 for details	
<b>Pin 1:</b>	<b>Pin 3 (Fout):</b>
Open	Clock
H	Clock
L	High Z
Not available for f < 500kHz	

<b>Marking Example</b>			
<b>Micro Crystal</b>		<b>Micro Crystal</b>	
MCSO1EV-D	E/D	Type	Option 1
33.000 MHz	09.12	Frequency	Date Code
○		○ (PIN 1)	

<b>Ordering Information Example</b>			
MCSO1 EV - D 33MHz E/D xxx			
Oscillator Type	MCSO1 = Miniature Surface Mount Clock Crystal Oscillator	Customer spec N°	
Oscillator Version	E = Extensive Temp. range V = Low Power Voltage 3.3V	Option 1: E/D = Enable / Disable	
Temperature Range	D = -55 to +175 °C X = Custom spec.	Oscillator Output Frequency	

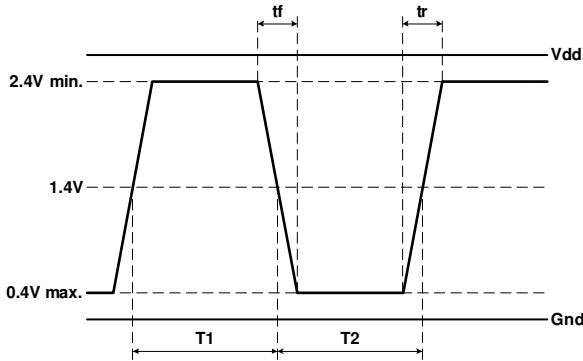
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**Application and Test Circuit:**

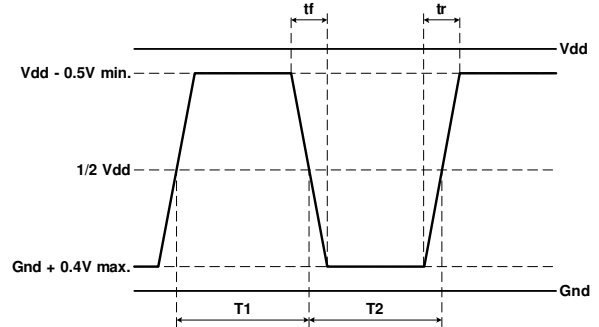


**Waveform Output:**

**Waveshape TTL**



**Waveshape HC-MOS**



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

Date :	October 2005	Revision No. : 3	Revision Date : 10-09
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