



# MCSO1CHV SMD Clock-Oscillator

Overall stability  $\pm 100\text{ppm}$

3.3V Power Supply

20 to 160MHz

**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:  $V_{dd} = 3.3V \pm 10\%^*$   
 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":  $< 0.4V$   $> V_{dd} - 0.5V$   
 START-UP TIME:  $< 5\text{ms}$   
 FAN OUT (LOAD): 10 TTL / LS \*

**ENVIRONMENT**  
 OPERABLE TEMP. RANGE: -55 to +125°C  
 STORAGE TEMP. RANGE: -65 to +125°C  
 VIBRATIONS: 10 to 2000Hz / 10g  
 SHOCKS: 5000g, 0.3ms, 1/2 sine  
 PACKAGE: Ceramic  
 PACKAGE DIMENSIONS: Max 8.2 x 4.0 x 2.7mm  
 (see packaging info)  
 PROCESSING: Reflow soldering 260°C / 10s max.  
 (see packaging info)

**MISCELLANEOUS**  
 LID : **Ceramic material**

\* Customer's specification on request

**Note 1: Operating Temperature Range**

MCSO1CHV-A:	0 to +70 °C
MCSO1CHV-B:	-40 to +85 °C
MCSO1CHV-C:	-55 to +125 °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**

<b>Micro Crystal</b>		<b>Micro Crystal</b>	
MCSO1CHV-B	E/D	Type	Option 1
160.000 MHz	11.14	Frequency	Date Code
○		○ (PIN 1)	

**Ordering Information Example**

MCSO1 CHV- B 160MHz E/D xxx

Oscillator Type ————  
 MCSO1 = Miniature Surface Mount Clock Crystal Oscillator

Oscillator Version ————  
 C = Ceramic Lid  
 H = High Frequency  
 V = Low Power Voltage

Temperature Range ————  
 A = 0 to +70°C  
 B = -40 to 85°C  
 C = -55 to 125°C  
 X = Custom spec.

Customer spec N°  
 Option 1:  
 E/D = Enable / Disable

Oscillator Output Frequency

**STANDARD FREQUENCIES [MHz]**

20.000	40.000	40.600	40.960	44.2368	48.000
49.152	50.000	50.750	51.150	51.200	52.000
55.296	58.9824	60.000	60.900	61.380	61.440
64.000	65.000	65.536	66.3552	72.000	73.728
76.800	78.000	80.000	81.200	81.840	81.920
88.4736	90.000	96.000	98.304	100.000	102.400
104.000	108.000	110.592	117.964	120.000	125.000
128.000	131.072	132.7104	144.000	150.000	160.000

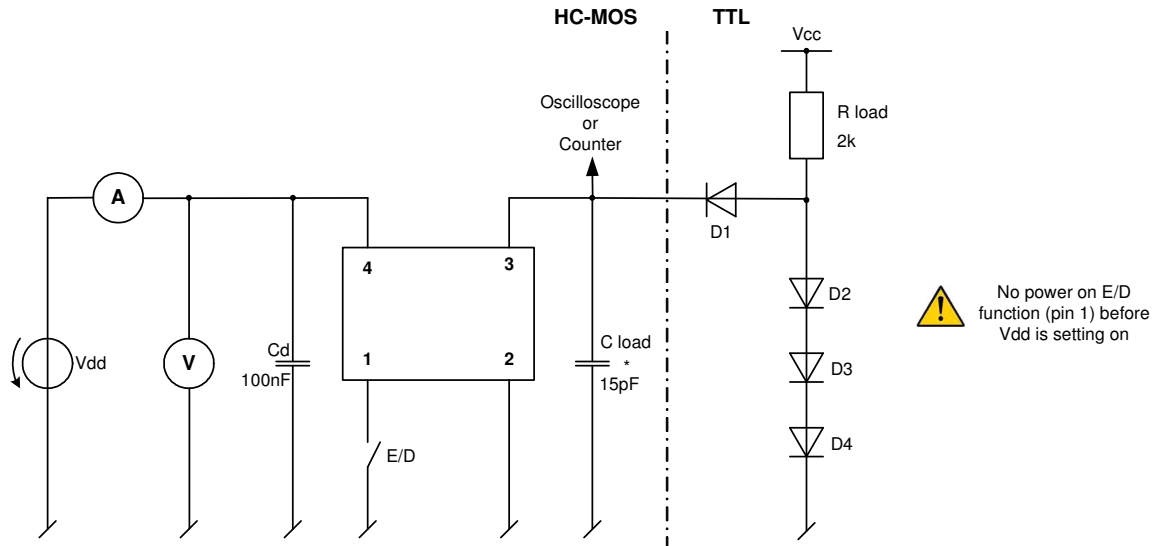
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**In accordance with our policy of continuous development and improvement, we reserve the right to modify the design or the specifications of our products without prior notice.**

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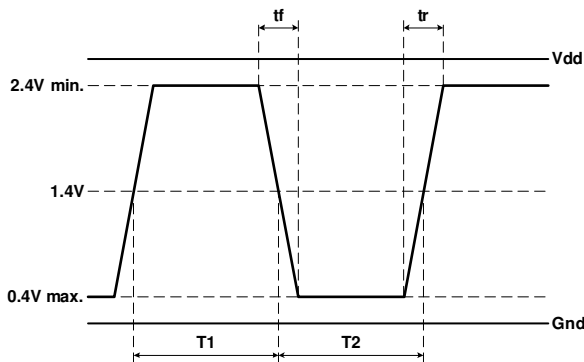
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**Application and Test Circuit:**

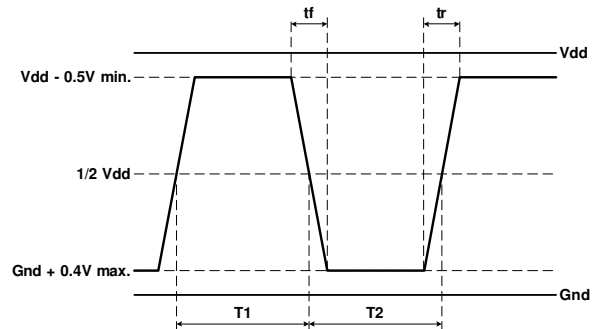


**Waveform Output:**

**Waveshape TTL**



**Waveshape HC-MOS**



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

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