MICRO CRYSTAL SWITZERLAND

MCSO

SMD Ceramic Clock-Oscillator

Overall stability ± 100ppm

5V Power Supply

Up to 20MHz

FREQUENCY STABILITY

OVER:

OPERATING TEMP. RANGE:	***See note 1***
OVERALL STABILITY:	*< ±100ppm **

INCLUDING:

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

POWER SUPPLY

SUPPLY VOLTAGE:	*Vdd = 5V ±10% **
INPUT CURRENT:	*< 15mA**

OUTPUT

OUTPUT SIGNAL:	*HC-MOS compatible **
SYMMETRY:	*40 / 60% (min.) @ Vdd / 2 **
RISE & FALL TIME:	*tr < 7ns tf < 7ns **
LEVEL "0" & "1":	*< 0.4V > Vdd – 0.5V*
START-UP TIME:	*< 5ms*
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, ½ 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

MCSO-A:	*0 to +70 °C*
MCSO-B:	*-40 to +85 °C*
MCSO-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

Not available for f < 500kHz

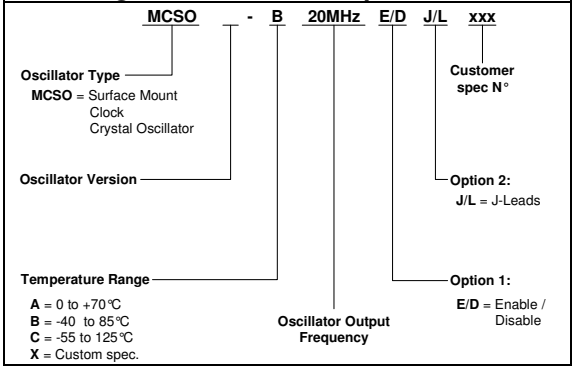
Option 2: J / Leads (on request)

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

Marking Example

Micro Crystal		Micro Crystal	
MCSO-B	E/D	*Type*	*Option 1*
20.000 MHz	09.42	*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*

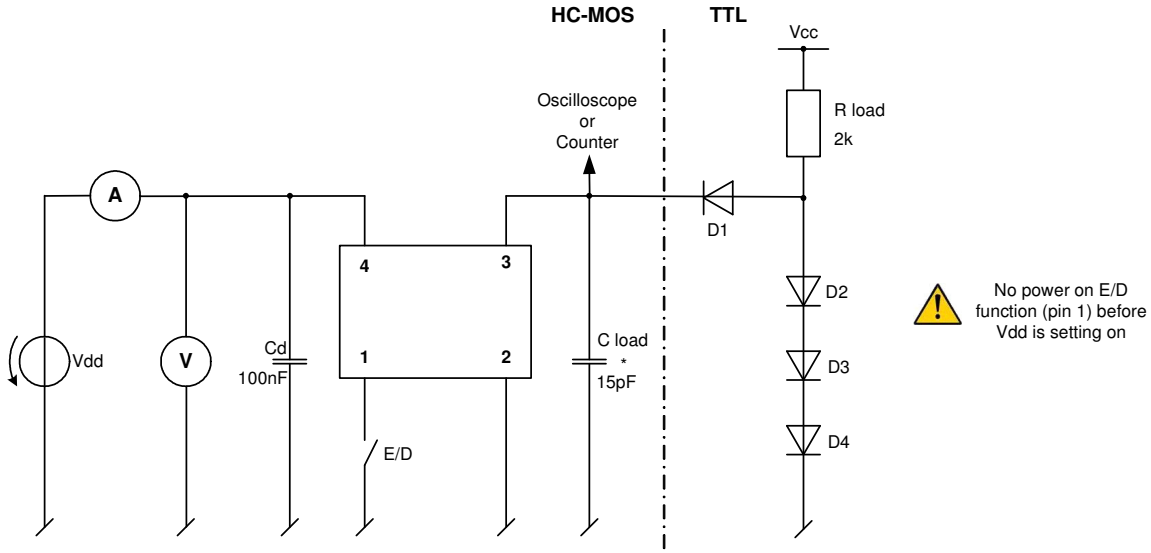
In accordance with our policy of continuous development and improvement, we reserve the right to modify the design or the specifications of our products without prior notice.

A COMPANY OF THE SWATCH GROUP

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

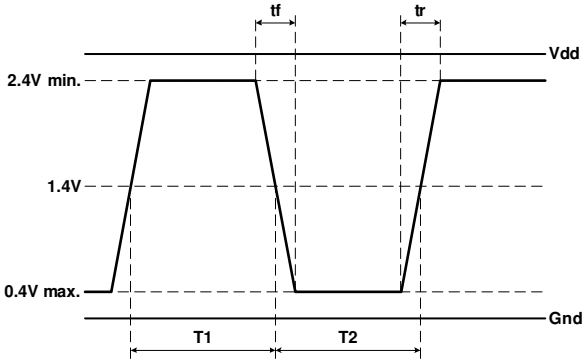
Tel. +41 32 655 82 82
Fax +41 32 655 80 90
Internet www.microcrystal.ch
Email sales@microcrystal.ch

Application and Test Circuit:

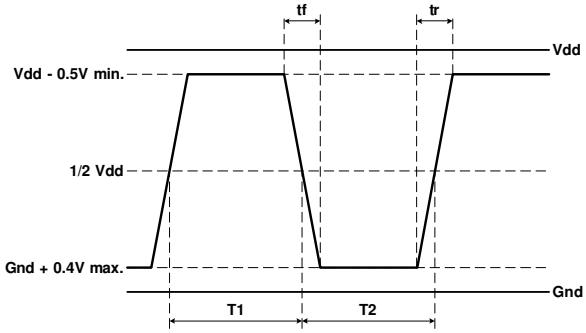


Waveform Output:

Waveshape TTL



Waveshape HC-MOS



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

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

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