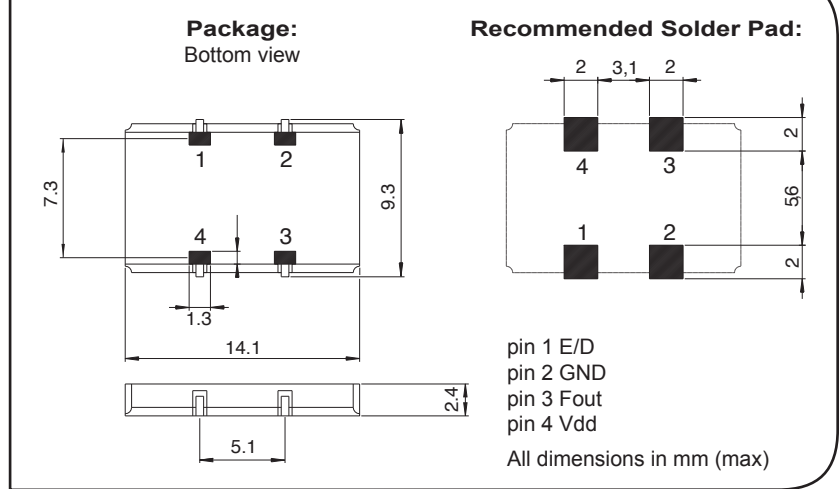


DIMENSIONS



SMT Clock oscillator in ceramic package
Fundamental quartz mode frequency
High shock and vibration resistance
Wide temperature range
Low aging
Ultra low MSL
Very fast start-up
Swiss made quality
Customer specification on request

DESCRIPTION:

This SMD oscillator in ceramic package has been specially designed for surface mount using infrared, vapor phase or epoxy techniques.

APPLICATIONS:

- Avionics
- Airbone equipments
- Remote control
- Security application
- Radio Transceiver
- Microprocessor clocks

The MCSO's are supplied on trays (50 pcs / tray)
 For pick-and-place equipment, the parts are available in 24mm tapes with 250 parts min
 500 parts max

ELECTRICAL CHARACTERISTICS AT +25°C

Frequency stability Over temperature range (see ordering info) Including: adjustment at +25°C long term aging 10 years over supply voltage ±5% over load min to max	$\Delta F/F$	$\leq \pm 100$	ppm
Frequency stability version T Over temperature range (see ordering info) Including: adjustment at +25°C long term aging 1 year over supply voltage ±5% over load min to max	$\Delta F/F$	$\leq \pm 50$	ppm
Supply voltage ± 5%	Vdd	2.5 / 3.3	V
Input current	Idd	see table 1	
Output signal		HC-MOS compatible	
Symmetry at Vdd/2		40 / 60	%
Rise & fall time ≤ 20 MHz (load 15pf 20% to 80%)		≤ 7	ns
Rise & fall time ≥ 20 MHz (load 15pf 10% to 90%)		≤ 3	ns
Level "0" & "1"		$<0.4 > V_{dd} - 0.5$	V
Start-up time (typ/max)	t	1/5	ms
Load min / max		3/47	pF
Jitter ≤ 20 MHz one sigma		< 2 rms	ps
Jitter > 20 MHz one sigma		< 10 rms	ps

**TABLE 1: Idd
(Without load)**

Frequency	F=< 10MHz	≤ 20MHz	>20 to 160MHz
W = Vdd = 2.5V	< 2mA	< 3mA	< 25mA
V = Vdd = 3.3V	< 4mA	< 5mA	< 30mA

STANDARD FREQUENCIES:

Frequency «MHz»						
3.6864	4	8	10	12	12.8	14.7456
16	20	24	40	48	120	160
Other frequencies from 10 KHz up to 225 MHz on request						

**ENVIRONMENTAL
CHARACTERISTICS:**

Storage temp. range	-55 to 125°C
Vibration resistance	10 to 2000Hz / 20g
Shocks resistance	5000g / 0.3ms / ½ sine

**TERMINATIONS AND
PROCESSING:**

Reflow soldering	+260°C / 10s max
Package	Ceramic 14 x 9mm x 2.4mm
Lids	Kovar
Termination option 2 on request	GJ/L: with Au terminations J/L J/L: with tinned Ag/Cu/Zn J/Leads pins Height 3.8mm included J/Leads
E/D option 1 on request Reaction time < 1µs	Pin 1 open → Pin 3 Clock H → Clock L → Low

- No power E/D function (pin 1) before Vdd is setting on
- E/D option not available for F < 500 KHz
- E/D option on request (very low consumption in disable mode).

**PRODUCT DESCRIPTION AND
ORDERING INFORMATION:**

MCSOF H V T - C 48MHz E/D GJ/L XXX

H > 20MHz
 blank ≤ 20MHz
W = Vdd 2.5V
V = Vdd 3.3V
T = ±50 ppm
 blank = ±100 ppm
A = 0 to +70°C
B = -40 to +85°C
C = -55 to +125°C
X = custom
 Frequency _____

option 1 E/D enable / disable
 option 2 blank Au plated J/L = J-leads GJ/L = Au J-Leads
 customer spec N°

A unique part number will be generated for each product specification: i.e:
 20xxxx-DA00 xxx pcs (in foam tray)
 200xxx-PP00 xxx pcs (in tape & reel, any quantity)

All specifications subject to change without notice.



Micro Crystal AG
 Mühlestrasse 14
 CH-2540 Grenchen
 Switzerland

Tel. +41 32 655 82 82
 Fax +41 32 655 82 83
 sales@microcrystal.com
 www.microcrystal.com