MICRO CRYSTAL SWITZERLAND

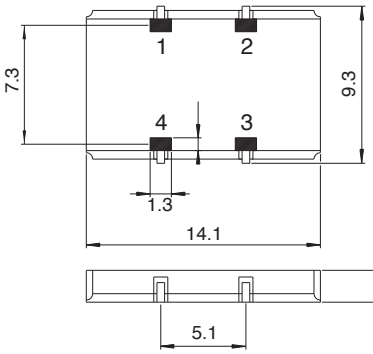
MCSO family package 14×9 mm

From 10KHz up to 225 MHz

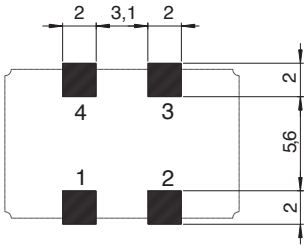
100% Leadfree, RoHScompliant:

DIMENSIONS

Package:
Bottom view



Recommended Solder Pad:



pin 1 E/D
pin 2 GND
pin 3 Fout
pin 4 Vdd

All dimensions in mm (max)

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	**ΔF/F**	**≤ ± 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	**ΔF/F**	**≤ ± 50**	**ppm**
Supply voltage ± 5%	Vdd	2.5 / 3.3 / 5	V
Input current	Idd	see table 1	
Output signal		HC-MOS compatible	
Symmetry at Vdd/2		40 / 60	%
Rise & fall time ≤ 20MHz (load 15pf 20% to 80%)		≤7	ns
Rise & fall time ≥ 20MHz (load 15pf 10% to 90%)		≤3	ns
Level "0" & "1"		<0.4>Vdd-0.5	V
Start-up time (typ/max)	t	1/5	ms
Load min / max		3/47	pF

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
blank = Vdd = 5V	< 6mA	< 7mA	< 40mA

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 9 x 2.4mm
Lids	Kovar
Terminations 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:

MCSO H V T - C 20MHz E/D GJ/L XXX

H > 20MHz
blank ≤ 20MHz

W = Vdd 2.5V
V = Vdd 3.3V
blank = Vdd 5V

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 plasted
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 SWITZERLAND

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