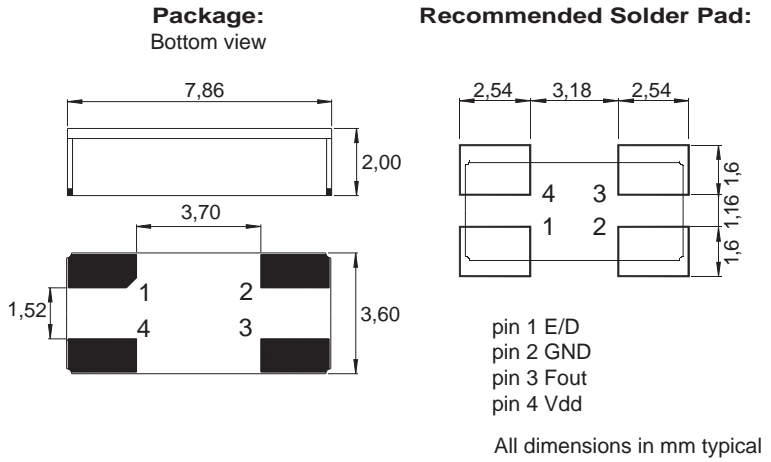




DIMENSIONS



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
Excellent solderability
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 MCSO1's are supplied on trays (91 pcs / tray)
 For pick-and-place equipment, the parts are available in 16mm tapes with 250 parts min
 1000 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 $\pm 5\%$ 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 $\pm 5\%$ over load min to max	$\Delta F/F$	$\leq \pm 50$	ppm
Supply voltage $\pm 5\%$ 1)* Version 1.2V available on request	Vdd	1.8 / 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 $\leq 20\text{MHz}$ For F=32.768 kHz rise & fall time $\leq 150\text{ns}$ (load 15pf 20% to 80%)		≤ 7	ns
Rise & fall time $\geq 20\text{MHz}$ (load 15pf 10% to 90%)		≤ 3	ns
Level "0" & "1"		$<0.4>V_{dd}-0.5$	V
Start-up time	t	<5	ms
Load min / max		3/47	pF

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

Frequency	F=32 kHz	F=< 10MHz	≤ 20MHz	>20 to 225MHz
W=Vdd = 2.5V	< 300µA	< 2mA	< 3mA	< 25mA
V=Vdd = 3.3V	< 1mA	< 4mA	< 5mA	< 30mA
blank=Vdd = 5V	< 2mA	< 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	-65 to +125°C
Vibration resistance	10 to 2000Hz / 20g
Shocks no resistance	5000g / 0.3ms / ½ sine

TERMINATIONS AND PROCESSING:

Reflow soldering	+260°C / 10s max
Package	Ceramic 8 x 4 x 2mm
Lids (standard)	Kovar
Lids (on request)	Ceramic Height 2.5mm type MCSO1C
Terminations option T3 on request	with tinned Ag/Cu/Zn
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:

MCSO1 C H V T - C 20MHz E/D T3 XXX

C = Ceramic lids
blank = Kovar lids

H > 20MHz
blank ≤ 20MHz

Z = Vdd 1.8V
W = Vdd 2.5V
V = Vdd 3.3V
blank = Vdd 5V

T = ±50ppm
blank = ±100ppm

A = 0 to 70°C
B = -40 to 85°C
C = -55 to 125°C
X = custom

option 1 E/D enable / disable

option 2 blank Au plated
T3 = tinned

customer spec N°

Frequency

A unique part number will be generated for each product specification: i.e:
20xxxx-EA00 xxx pcs (in ESD plastic tray)
200xxx-ML00 xxx pcs (in tape & reel, any quantity)

