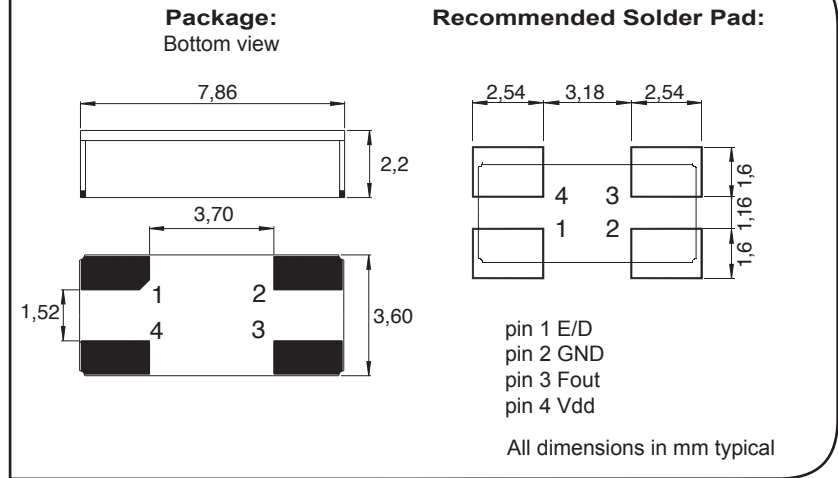




DIMENSIONS



SMT Clock oscillator in ceramic package
Fundamental quartz mode frequency
High shock and vibration resistance
Wide temperature range
Low aging
Ultra low internal 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 ±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% 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 ≤ 20MHz For F=32.768 kHz rise & fall time ≤ 150ns (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	t	<5	ms
Load min / max		3/47	pF

* 1) C = 47nF ceramic must be connected between GND & Vdd

**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 (survival)	10 to 2000Hz / 50g
Shocks resistance (survival)	5000g / 0.3ms / ½ sine

TERMINATIONS AND PROCESSING:

Reflow soldering	+260°C / 10s max
Package	Ceramic 8 x 4 x 2.2mm
Lids (standard)	Kovar
Lids (on request)	Ceramic
Terminations option T3 on request	with tinned Ag/Cu/Sn
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 on request (very low consumption in disable mode).

PRODUCT DESCRIPTION AND ORDERING INFORMATION:

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

blank = Kovar lids							
C = Ceramic lids							
H > 20MHz						option 1 E/D enable / disable	
blank ≤ 20MHz							
Z = Vdd 1.8V						option 2 blank Au plated T3 = tinned	
W = Vdd 2.5V							
V = Vdd 3.3V							
blank = Vdd 5V							
T = ±50ppm						customer spec N°	
blank = ±100ppm							
A = 0 to 70°C							
B = -40 to 85°C							
C = -55 to 125°C							
X = custom							
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)

All specifications subject to change without notice.



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