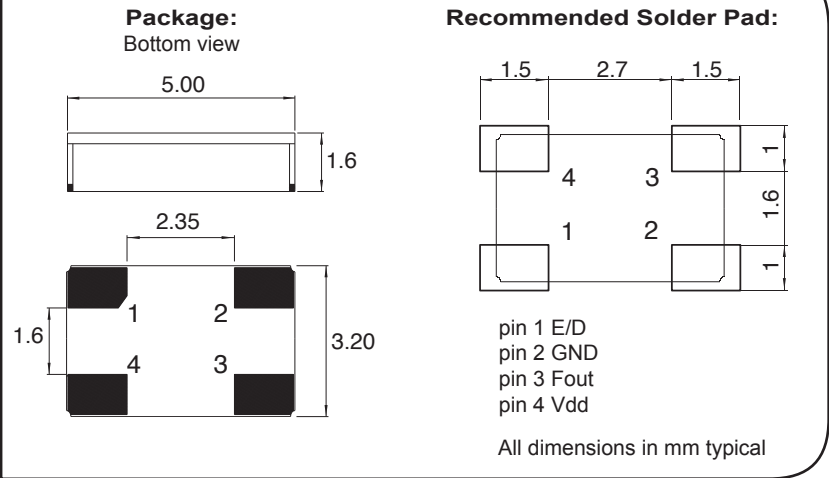


DIMENSIONS



- 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 MCSO2's are supplied on trays (128 pcs / tray)
For pick-and-place equipment, the parts are available in 12mm tapes with 250 parts min
1000 parts min

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	V
Input current	Idd	see table 1	
Output signal		HC-MOS compatible	
Symmetry at Vdd/2		40 / 60	%
Rise & fall time ≤ 20 MHz For F=32.768 kHz rise & fall time ≤ 150 ns (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	t	< 5	ms
Load min / max		3/47	pF
Jitter ≤ 20 MHz one sigma		< 2 rms	ps
Jitter > 20 MHz one sigma		< 10 rms	ps

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

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

Frequency	Fz 32 kHz	F=< 10MHz	≤ 20MHz	>20 to 225MHz
W= Vdd = 2.5V	< 300μA	< 2mA	< 3mA	< 25mA
V= Vdd = 3.3V	< 1mA	< 4mA	< 5mA	< 30mA

STANDARD FREQUENCIES:

Frequency «MHz»						
3.6864	4	8	10	12	12.8	14.7456
16	20	24	40	48	120	
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 5 x 3.2 x 1.6
Lids	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:

MCSO2F H V T - C 48MHz E/D T3 XXX

H	> 20MHz												
blank	≤ 20MHz												
Z	= Vdd 1.8V												
W	= Vdd 2.5V												
V	= Vdd 3.3V												
T	= ±50ppm												
blank	= ±100ppm												
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 T3 = tinned

customer spec N°

A unique part number will be generated for each product specification
 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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