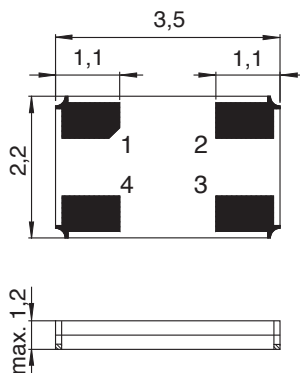


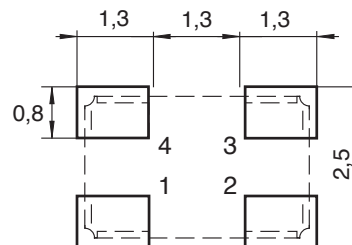
**100% Leadfree, RoHScompliant:**

## DIMENSIONS

**Package:**  
Bottom view



**Recommended Solder Pad:**



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

All dimensions in mm typical

**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
- Airborne equipments
- Remote control
- Security application
- Radio Transceiver
- Microprocessor clocks

The MCSO6's are supplied on trays (208 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

<b>Frequency stability</b> 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
<b>Frequency stability version T</b> 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)*	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 For F=32.768 kHz rise & fall time $\leq 150$ ns (load 15pf 20% to 80%)		$\leq 7$	ns
Level "0" & "1"		$< 0.4 > V_{dd} - 0.5$	V
Start-up time	t	$< 5$	ms
Load min / max		3/47	pF
Jitter $\leq 20$ 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	F=32 kHz	F=< 10MHz	≤ 20MHz	>20 to 155MHz
W=Vdd = 2.5V	< 300µA	< 2mA	< 3mA	< 25mA
V=Vdd = 3.3V	< 1mA	< 4mA	< 5mA	< 30mA

**STANDARD FREQUENCIES:**

Frequency «MHz»						
4	8	10	12	16	20	24
40	50	60				
Other frequencies from 10 kHz up to 155 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 3.5 x 2.2 x 1.2mm
Lids	Ceramic
Terminations option T3 on request	with tinned Ag/Cu/Zn
Reaction time < 1µs E/D option 1 on request	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:**

MCSO6F		V	T	- C	48MHz	E/D	T3	XXX
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								
<p>A unique part number will be generated for each product specification</p> <p>20xxxx-EA00                      xxx pcs (in ESD plastic tray)</p> <p>200xxx-ML00                     xxx pcs (in tape &amp; reel, any quantity)</p>								

All specifications subject to change without notice.



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