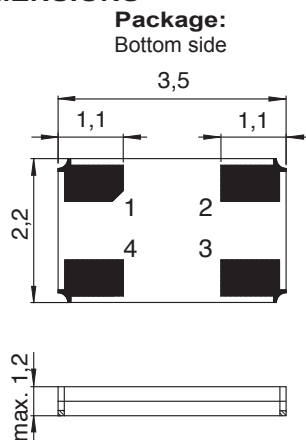
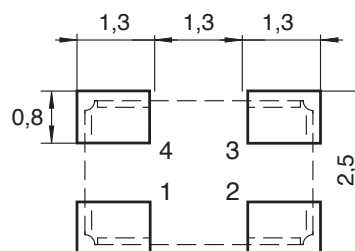


100% Leadfree, RoHScompliant:

DIMENSIONS



Recommended Solder Pad:



pin 1 ED
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:

- Downhole and Well drilling equipments
- Avionics
- Airbone equipments
- Geothermal equipments

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

Frequency stability Over temperature range C = -55 to +125°C (see ordering info) Including 2)*	$\Delta F/F$	$\leq \pm 100$	ppm
Frequency stability Over temperature range E = -55 to +150°C (see ordering info) Including 2)*	$\Delta F/F$	$\leq \pm 150$	ppm
Frequency stability Over temperature range D = -55 to +175°C (see ordering info) Including 2)*	$\Delta F/F$	$\leq \pm 300$	ppm
Frequency stability Over temperature range G = -55 to +210°C (see ordering info) Including 2)*	$\Delta F/F$	$\leq \pm 400$	ppm
Supply voltage $\pm 5\%$ 1)*	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 For F=32.768 kHz rise & fall time ≤ 150 ns (load 15pf 20% to 80%)		≤ 7	ns
Level "0" & "1"		$<0.4>V_{dd}-0.5$	V
Start-up time	t	<5	ms
Load min / max		3/47	pF

* 1) C = 47nF ceramic must be connected between GND & Vdd
 Operable over 2.3 to 5.5V

* 2) adjustment at +25°C, long term aging 1 year
 over supply voltage $\pm 5\%$ and over load min to max

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

Frequency	F= 32 kHz	F=< 10MHz	≤ 20MHz	> 20MHz
W =Vdd = 2.5V	< 300μA	< 2mA	< 3mA	< 15mA
V =Vdd = 3.3V	< 1mA	< 4mA	< 5mA	< 20mA
blank =Vdd = 5V	< 2mA	< 6mA	< 7mA	< 30mA

STANDARD FREQUENCIES:

Frequency «MHz»						
4	8	10	12	16	20	24
40	50	60				
Other frequencies from 10 kHz MHz to 60 MHz on request						

**ENVIRONMENTAL
CHARACTERISTICS:**

Storage temp. range	-65 to +125°C
Vibration resistance	10 to 2000Hz / 40g
Shocks resistance	10000g / 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 (not available on G temperature range)	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:**

MCSO6E		V - D	20MHz	E/D	T3	XXX
W	= Vdd 2.5V					
V	= Vdd 3.3V					
blank	= Vdd 5V					
C	= -55 to 125°C					
E	= -55 to 150°C					
D	= -55 to 175°C					
G	= -55 to 210°C					
X	= custom					
Frequency						
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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