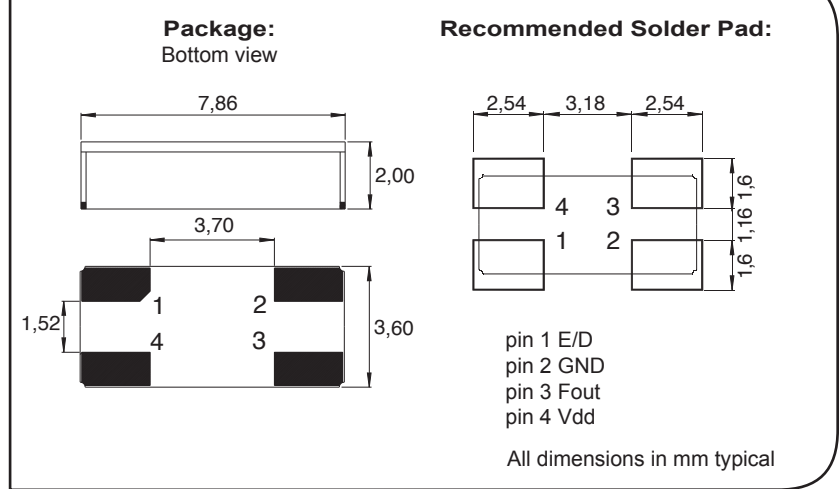




DIMENSIONS



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 ±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 1.8V available on request | 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 ≤ 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 |
| Jitter ≤ 20MHz one sigma | | < 2rms | ps |
| Jitter > 20MHz one sigma | | < 10rms | ps |

TABLE 1: I_{dd}
(Without load)

| Frequency | F=32 kHz | F=< 10MHz | ≤ 20MHz | >20 to 160MHz |
|--------------------------|----------|-----------|---------|---------------|
| W=V _{dd} = 2.5V | < 300μA | < 2mA | < 3mA | < 25mA |
| V=V _{dd} = 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 | 160 |
| Other frequencies from 10 kHz up to 225 MHz on request | | | | | | |

ENVIRONMENTAL CHARACTERISTICS:

| | |
|----------------------|------------------------|
| Storage temp. range | -55 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 MCSO1FC |
| 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 V_{dd} 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:

MCSO1F C H V T - C 48MHz E/D T3 XXX

C = Ceramic lids
blank = Kovar lids

H > 20MHz
blank ≤ 20MHz

W = V_{dd} 2.5V
V = V_{dd} 3.3V

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 foam tray)
200xxx-ML00 xxx pcs (in tape & reel, any quantity)

All specifications subject to change without notice.



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