## HM INTERNATIONAL
Frequency Technology

## EUROPEAN CRYSTAL ORGANIZATION
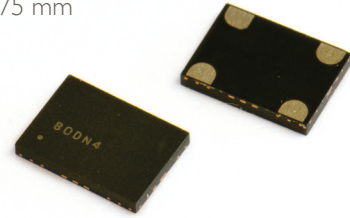Frequency Technology

## KLOVE ELECTRONICS
Frequency Technology

## MX5C  MEMS OSCILLATOR

### FEATURES

- Silicon MEMS resonator based oscillator
- Low power oscillator
- Very high shock and vibration resistance
- Fast delivery
- 500 million hours MTBF

5.0 x 3.2 x 0.75 mm



| Item | Specification | | | | | | |
|---|---|---|---|---|---|---|---|
| Frequency Range | 1.0 - 110.0 MHz | | | | 115.0 - 137.0 MHz | | |
| Output Logic | CMOS | | | | | | |
| Overall Frequency Stability * | ± 20 ppm ~ ± 100 ppm ( see options ) | | | | | | |
| Operating Temperature Range | -20° ~ +70°C  commercial application<br>-40° ~ +85°C  industrial application | | | | | | |
| Supply Voltage Vdd | +1.8V ±10% | +2.5V ±10% | +2.8V ±10% | +3.0V ±10% | +3.3V ±10% | +1.8V to 3.3V ±10% | +2.5V to 3.3V ±10% |
| Supply Current | 4 mA ~ 15 mA | 4 mA ~ 15 mA | 4 mA ~ 15 mA | 4.5 mA ~ 20 mA | 4.5 mA ~ 20 mA | 4.5 mA ~ 20 mA | 4.5 mA ~ 20 mA |
| Output Level | VOH ≥ 0.9 Vdd | | | | VOL ≤ 0.1 Vdd | | |
| Output Load | 15 pF<br>other load capacitance possible , please consult us. | | | | | | |
| Symmetry | 45 / 55 % | | | | | | |
| Rise / Fall time   Fr/Ff | 3 ns max | | | | | | |
| Tri-state Enable (See options) | pin #1 = high or open<br>pin #1 = low | | | | pin #3 ==> oscillation<br>pin #3 ==> high impedance | | |
| Tri-state Power Down ( See options ) | pin #1 = high or open<br>pin #1 = low | | | | pin #3 ==> oscillation<br>pin #3 ==> low output | | |
| Standby current max. | 5 µA max ( for Power Down function ) | | | | | | |
| Start-up Time | 5 ms max. | | | | | | |
| RMS Jitter (12 kHz to 20 MHz band ) | 2.5 ps max. | | | | | | |
| Packing Unit | 1000pcs / reel | | | | | | |
| Marking | Lot code only | | | | | | |
| Shock Resistance | up to 50000 G | | | | | | |

( * ) Includes initial tolerance @+25°C , stability over operating temperature , stability vs. load change , stability vs. supply change  and  one year aging

Customer specifications on request

# HM INTERNATIONAL
Frequency Technology

# EUROPEAN CRYSTAL ORGANIZATION
Frequency Technology

# KLOVE ELECTRONICS
Frequency Technology

## OPTIONS & ORDERING INFORMATION

| MX5C | | | | | | MHz |
|------|---|---|---|---|---|---|
| | Supply Voltage * | Operating Temp. * | Overall Stability * | Tri-state Function | Output Load * | Frequency in MHz |
| | **18** = +1.8V | **F** = -20° / +70°C | **20** = ±20 ppm | **E** = Tri-state Enable | **blanc** = 15 pF | Please specify the frequency in MHz |
| | **25** = +2.5V | **K** = -40° / +85°C | **25** = ±25 ppm | **B** = Tri-state Power Down | **H** = >15 pF , consult us | |
| | **28** = +2.8V | | **30** = ±30 ppm | **F** = None | | |
| | **30** = +3.0V | | **50** = ±50 ppm | | | |
| | **33** = +3.3V | | **100** = ±100 ppm | | | |
| | **1V3** = +1.8V to +3.3V | | | | | |
| | **2V3** = +2.5V to +3.3V | | | | | |

\* Note : Not all combinations are possible , please consult us.

## OUTLINE DIMENSIONS (MM)

**Package Size – Dimensions (Unit: mm)**
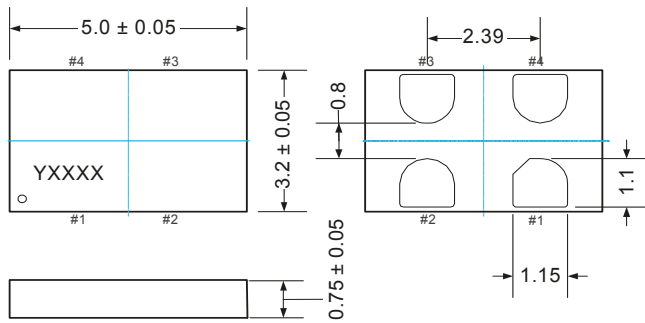


**Recommended Land Pattern (Unit: mm)**
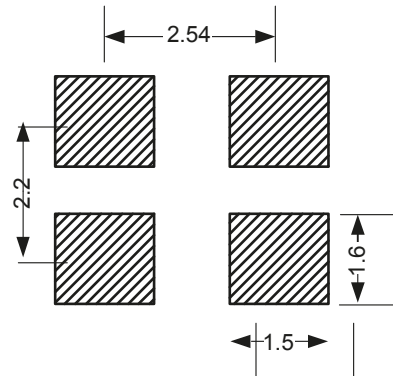


### Pin Connections

| | |
|---|---|
| #1 : E/D or NC | |
| #2 : GND | |
| #3: Output | |
| #4 :Vdd | |