# LOW PHASE NOISE MINIATURE OCXO WITH LOW G-SENSITIVITY MV389

**Preliminary Information**

***Features:***

- ***Small package: 25.8x25.8x12.7 mm***
- ***Low phase noise: up to -173 dBc/Hz***
- ***Long term stability: up to±3x10$^{-8}$/year***
- ***G-sensitivity: up to <3x10$^{-10}$/g***
- ***Standard frequency: 10.0 MHz***

## ORDERING GUIDE: MV389 – C 5 F – 10MHz – 1 -4E-10/G

| Availability of certain stability vs. operating temperature range | | 10<br>±1x10$^{-8}$ | 5<br>±5x10$^{-9}$ |
|---|---|---|---|
| A | 0…+55ºC | A | A |
| B | -10…+60ºC | A | C |
| C | -20…+70ºC | A | NA |
| D | -40…+70ºC | A | NA |
| EX* | -40…+85 ºC | A | NA |

* only for 5V power supply

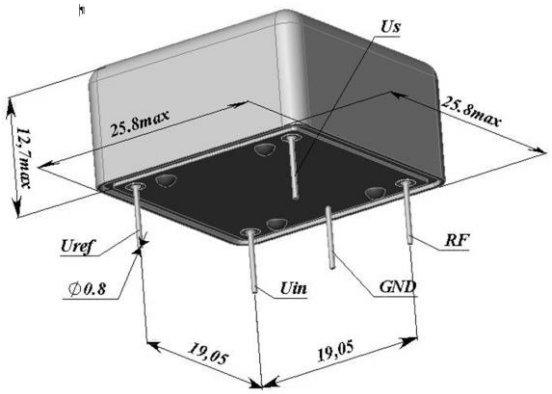
A – available, C – consult factory, NA – not available

For other temperature ranges see designation at the end of Data Sheet.

| Availability of certain aging values for certain frequencies | | Standard frequencies<br>10.0 MHz |
|---|---|---|
| G | ±1x10$^{-7}$/year | A |
| F | ±5x10$^{-8}$/year | A |
| E | ±3x10$^{-8}$/year | C |

| Phase noise, dBc/Hz, for 10MHz, SIN | 1<br>( 12 V only) | 2 | 3 |
|---|---|---|---|
| 1 Hz | <-95 | <-100 | <-105 |
| 10 Hz | <-125 | <-130 | <-135 |
| 100 Hz | <-158 | <-155 | <-155 |
| 1000 Hz | <-168 | <-160 | <-160 |
| 10000 Hz | <-173 | <-165 | <-165 |

## Package drawing:




| | | |
|---|---|---|
| Short term stability (Allan deviation) per 1 sec, for 10 MHz<br>Option (for option 3 of phase noise) | < 5x10$^{-12}$<br>< 2x10$^{-12}$ | |
| G-sensitivity<br>Option<br>Option<br>Option (consult factory) | < 1x10$^{-9}$/g<br>< 5x10$^{-10}$/g<br>< 4x10$^{-10}$/g<br><3x10$^{-10}$/g | |
| Frequency stability vs. load changes (±5%) for 12 V power supply | < ±1.5x10$^{-9}$ | |
| Frequency stability vs. power supply changes (±5%) | < ±1.5x10$^{-9}$ | |
| Warm-up time within accuracy of <±2x10$^{-8}$ @ 25 ºC | < 5 min | |
| Power supply (Us) | 12V±5% | 5V±5% |
| Steady state current consumption @ 25ºC | < 170 mA | < 400 mA |
| Peak current consumption during warm-up | < 550 mA | < 1300 mA |
| Frequency pulling range | > ±4.0x10$^{-7}$ | > ±3.0x10$^{-7}$ |
| Control voltage range (Uin) | 0…5 V | 0…4.1 V |
| Reference voltage (Uref) | +5 V | +4.1 V |
| Output | SIN | |
| Level | >300 mV<br>> 600 mV (for 12V and phase noise option 1) | |
| Load | 50 Ohm±5% | |
| Harmonics | > 30 dBc | |

| Vibrations: | |
|---|---|
| Frequency range | 10-500 Hz |
| Acceleration | 5 g |

| Shock: | |
|---|---|
| Acceleration | 75 g |
| Duration | 3±1 ms |

| Humidity @ 25 ºC | 98% |
|---|---|
| Storage temperature range | -55…+70ºC |

## Additional notes:

- **Please consult factory for daily aging values. Normally typical correspondence of daily to aging per year is as following: ±1x10$^{-7}$/year – ±1x10$^{-9}$/day; ±5x10$^{-8}$/year – ±5x10$^{-10}$/day; ±3x10$^{-8}$/year – ±3x10$^{-10}$/day**
- **For non standard operating temperature ranges please use the following two letters designations (first letter for the lower limit, second letter for the upper limit), ºC:**

| A | B | C | D | E | F | G | H | J | K | L | M | N | P | Q | R | S | T | U | W | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -60 | -55 | -50 | -45 | -40 | -30 | -20 | -10 | 0 | +10 | +30 | +40 | +45 | +50 | +55 | +60 | +65 | +70 | +75 | +80 | +85 |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