

# MCSO2EV

## 3.3V Low Frequency Oscillator for Extreme Environments

- Suitable for Avionics, Down-hole, Geothermal etc
- Extreme temperature ranges up to 210°C
- High stability & low ageing under extremes
- High shock & vibration resistance
- Optional tinned pads (Ag/Cu/Zn)



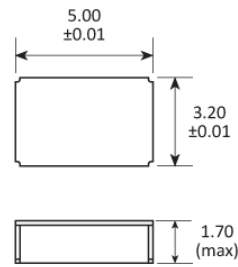
### CONFIGURABLE OPTIONS

| Parameter                                              | Option Code |
|--------------------------------------------------------|-------------|
| Frequency                                              |             |
| Frequency stability (max)*                             |             |
| * see note below                                       |             |
| Any                                                    |             |
| ±100ppm over -55 to +125°C                             | C           |
| ±150ppm over -55 to +150°C                             | E           |
| ±300ppm over -55 to +175°C                             | D           |
| ±400ppm over -55 to +210°C                             | G           |
| Enable / disable function                              |             |
| Any                                                    |             |
| None (pad 1 NC)                                        |             |
| Active (control via pad 1, not available under 500kHz) | E           |
| Terminations                                           |             |
| Any                                                    |             |
| Gold plated pads                                       |             |
| Tinned Ag/Cu/Zn                                        | T           |

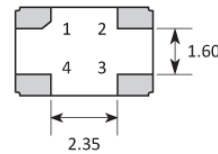
## SPECIFICATIONS

|                                   |                                                                                                                             |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Frequency range                   | 10.0kHz ~ 20MHz                                                                                                             |
| Dimensions                        | 5.0 x 3.2 x 1.7mm                                                                                                           |
| Supply voltage (V <sub>DD</sub> ) | +3.3V (±5%)                                                                                                                 |
| Storage temperature range         | -65 to +125 °C                                                                                                              |
| Supply current                    | 32kHz : 1mA<br>≤10MHz : 4mA<br>>10 ~ 20MHz : 5mA                                                                            |
| Driving ability                   | CMOS                                                                                                                        |
| Load                              | 3pF min, 47pF max                                                                                                           |
| Logic levels                      | '0' level = +0.4V max<br>'1' level = V <sub>DD</sub> -0.5V min                                                              |
| Start up time                     | 5ms max                                                                                                                     |
| Waveform symmetry                 | 40:60 max @ 50%V <sub>DD</sub>                                                                                              |
| Rise / fall time                  | 7ns max (≤20MHz, 15pF, 20~80%V <sub>p-p</sub> )<br>3ns max (>20MHz, 15pF, 10~90%V <sub>p-p</sub> )<br>150ns max @ 32.768kHz |
| Shock resistance                  | 10,000g, 0.3ms, ½ sine                                                                                                      |
| Vibration resistance              | 80g rms 10.0 ~ 2,000Hz                                                                                                      |
| Soldering condition               | 260 °C, 10 sec max                                                                                                          |

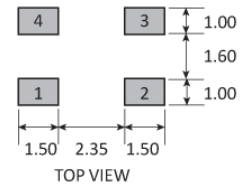
## PACKAGE DRAWING



| PAD | CONNECTION                      |
|-----|---------------------------------|
| 1   | Not connected or Enable/Disable |
| 2   | Ground                          |
| 3   | Output                          |
| 4   | Supply                          |



### SOLDER PAD LAYOUT



A 47nF ceramic capacitor must be connected between GND and V<sub>DD</sub>

Dimensions in mm

## ORDERING INFORMATION

To request a quotation for the MCSO2EV please use the configurable options form to choose the options you require and then submit your configured product to our team. Our expert advisers are always happy to help with your requirements and can be contacted on +44 1460 256 100 or at [sales@golledge.com](mailto:sales@golledge.com).

Following product selection you will be issued with a seven character Golledge part number. Your Golledge part number is the internationally accepted Golledge manufacturing part number (MPN) that should be used for all project documentation, including bills of materials (BoMs) and purchase orders.

If you have any queries regarding any of our documentation our dedicated sales team will be happy to help.

## HANDLING & STORAGE



Human Body Model (HBM) 1A (250V to <500V)



Moisture Sensitivity Level (MSL): 1 (or not applicable)

## ENABLE / DISABLE FUNCTION

| Input (pad 1) | Output (pad 3) |
|---------------|----------------|
| Open          | Enabled        |
| '1' level     | Enabled        |
| '0' level     | No clock       |

Reaction time <1 $\mu$ s

## CONSTRUCTION

Ceramic base and lid

## COMPLIANCE

---



Lead-free (< 0.1% by weight)



RoHS compliant with no exemptions. [See our](#)

[declaration](#)



REACH compliant. [See our statement](#)



Free of conflict minerals. [See our declaration](#)



Free of Halogens. [See our declaration](#)



Free of Ozone-depleting substances. [See our](#)

[declaration](#)