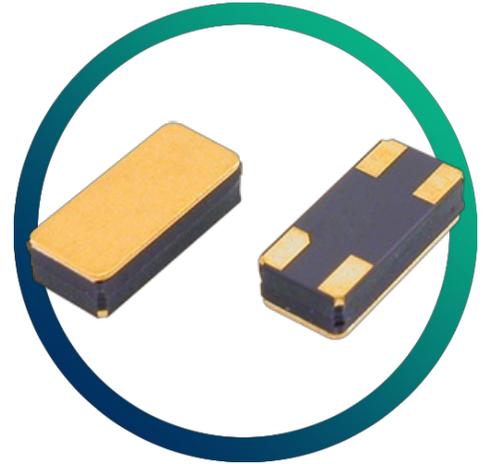


# MCSO1EL

## 5V Low Frequency CMOS Oscillator for Extreme Environments



- Suitable for Avionics, Down-hole, Geothermal etc
- Extreme temperature ranges up to 200°C
- High stability & low ageing under extremes
- High shock & vibration resistance
- Optional tinned pads (Ag/Cu/Zn)

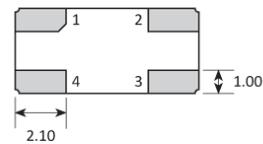
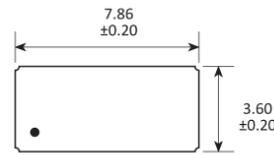
### CONFIGURABLE OPTIONS

Parameter	Option Code
<b>Frequency</b>	
32.768kHz	
<b>Frequency stability</b>	
* see note below	
<b>Any</b>	
±100ppm max over -55 to +125°C	C
±150ppm max over -55 to +150°C	E
±300ppm max over -55 to +175°C	D
±400ppm max over -55 to +210°C	G
<b>Enable / disable function</b>	
<b>Any</b>	
None (pad 1 NC)	
Tristate (control via pad 1)	E
<b>Terminations</b>	
<b>Any</b>	
Gold plated pads	
Tinned pads* (Ag/Cu/Zn)	T
* not available with stability option G	

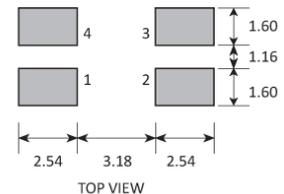
## SPECIFICATIONS

Frequency range	32.768kHz (std) 10.0 ~ 50.0kHz
Dimensions	7.86 x 3.60 x 2.20mm
Supply voltage ( $V_{DD}$ )	+5.0V ( $\pm 5\%$ )
Storage temperature range	-65 to +125 °C
Supply current	120 $\mu$ A max @ 10pF load
Driving ability	CMOS
Load	3pF min, 27pF max
Logic levels	'0' level = +0.4V max '1' level = $V_{DD}$ -0.5V min
Start up time	5ms max
Waveform symmetry	40:60 max @ 50% $V_{DD}$
Rise / fall time	25ns max (15pF, 20%~80%)
Standby current	5 $\mu$ A max
Shock resistance	10,000g, 0.3ms, $\frac{1}{2}$ sine
Vibration resistance	40g rms 10.0 ~ 2,000Hz
Soldering condition	260 °C, 10 sec max

## PACKAGE DRAWING



PAD	CONNECTION
1	Not Connected
2	Ground
3	Output
4	Supply



A 47nF ceramic capacitor must be connected between GND and  $V_{DD}$

Dimensions in mm

## ORDERING INFORMATION

To request a quotation for the MCSO1EL 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.

## ENABLE / DISABLE FUNCTION

Input (pad 1)	Output (pad 3)
Open	Enabled
'1' level	Enabled
'0' level	High Impedance

---

## HANDLING & STORAGE

---



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



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

---

## CONSTRUCTION

---

Ceramic base with kovar lid

---

## COMPLIANCE

---



Lead-free (< 0.1% by weight)



RoHS compliant with 7(c)-1 exemption. [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](#)