

## Oven Controlled Crystal Oscillator (OCXO)

# OG1409CAN

- Output frequency : 20.0MHz
- Supply voltage : 3.3V Typ.
- Frequency / temperature characteristics :  $\pm 50 \times 10^{-9}$  Max. / -40 °C to +85 °C
- External dimensions : 14.6 × 9.7 × 6.5 mm
- Features : Low profile full SMD package
- : Very fast warm-up and accurate stability
- : IPC/JEDEC J-STD-020D reflow able
- : SC-Cut Crystal unit

Please contact us for detailed specifications



Product Number (Please contact us)  
X1G004641xxxxxx

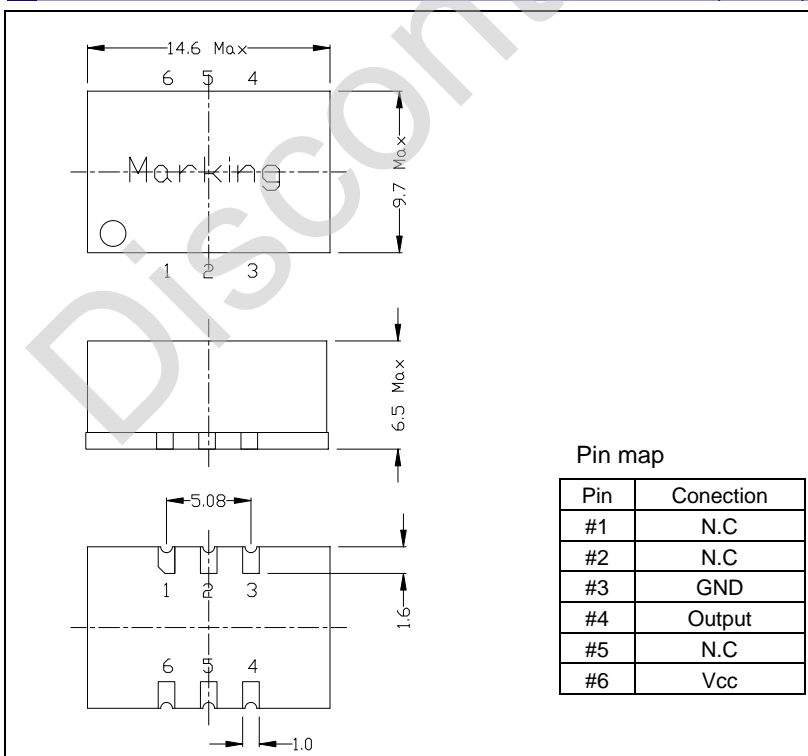


### Specifications (characteristics)

Item	Symbol	Specifications	Conditions / Remarks	
Output frequency range	$f_o$	20.000 MHz		
Supply voltage	V <sub>cc</sub>	3.3 V $\pm$ 0.165 V		
Storage temperature range	T <sub>stg</sub>	-40 °C to +85 °C		
Operating temperature range	T <sub>use</sub>	-40 °C to +85 °C		
Frequency tolerance	Initial tolerance	$\pm 0.5 \times 10^{-6}$ Max.	at +25 °C, V <sub>cc</sub> =3.3V	
	Reflow shift	$\pm 0.5 \times 10^{-6}$ Max.	1time reflow, 24h after reflow at +25 °C	
	Frequency / temperature	$f_o$ -T <sub>c</sub>	$\pm 50 \times 10^{-9}$ Max.	-40 °C to +85 °C f <sub>ref</sub> : (f <sub>max</sub> + f <sub>min</sub> ) / 2
	Frequency / voltage	$f_o$ -V <sub>cc</sub>	$\pm 10 \times 10^{-9}$ Max.	V <sub>cc</sub> =3.3 V $\pm$ 5%
	Frequency aging	f <sub>age</sub>	$\pm 4 \times 10^{-9}$ / day Max.	Temp.=const., V <sub>cc</sub> =3.3V f <sub>ref</sub> ; 30days after power on
	Over all	$F_{tol}$	$\pm 4.6 \times 10^{-6}$ Max.	10years at +25°C / V <sub>cc</sub> $\pm$ 5%
Warm-up			$\pm 100 \times 10^{-9}$ / 3 min. Min.	f <sub>ref</sub> = after 1 hour power on at +25 °C
Power consumption	Warm-up	P <sub>w</sub>	3.0W Max.	at -40 °C , V <sub>cc</sub> = 3.3V
	Steady state		0.7W Max.	at +25 °C still air , V <sub>cc</sub> = 3.3V
RF Output / Output load condition		LVCMOS / 15pF $\pm$ 5%	20pF Max. 1k $\Omega$ Min. fanout 1	
Rise and fall-time	Tr/Tf	8 ns Max. / 15pF	10% - 90% Output level	
Symmetry	SYM	45% to 55%		
Output voltage	V <sub>OH</sub> /V <sub>OL</sub>	V <sub>OH</sub> =2.4Vmin / V <sub>OL</sub> =0.4Vmax		
Phase noise	1Hz		-70 dBc/Hz typ.	
	10Hz		-100 dBc/Hz typ.	
	100Hz		-130 dBc/Hz typ.	
	1kHz		-140 dBc/Hz typ.	
	10kHz		-145 dBc/Hz typ.	
Power source		150 $\mu$ ~ 2ms	0 %V <sub>cc</sub> → 90 %V <sub>cc</sub>	

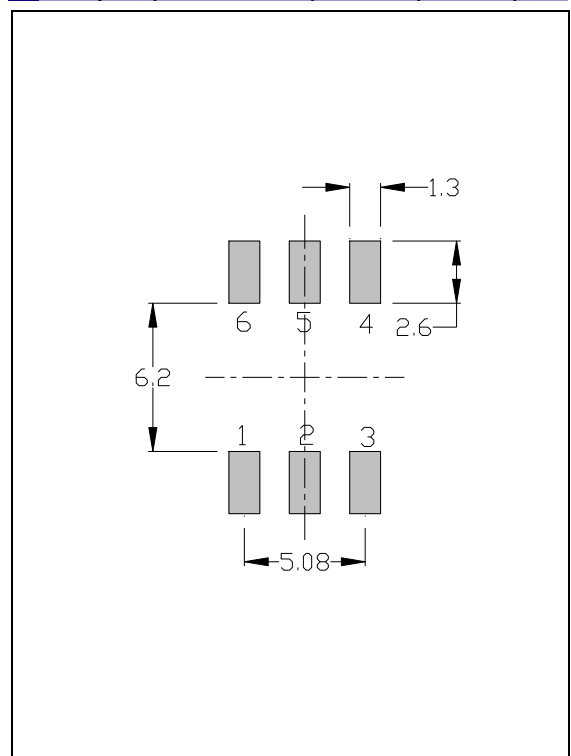
### External dimensions

(Unit:mm)



### Footprint (Recommended)

(Unit: mm)



## PROMOTION OF ENVIRONMENTAL MANAGEMENT SYSTEM CONFORMING TO INTERNATIONAL STANDARDS

At Seiko Epson, all environmental initiatives operate under the Plan-Do-Check-Action (PDCA) cycle designed to achieve continuous improvements. The environmental management system (EMS) operates under the ISO 14001 environmental management standard.

All of our major manufacturing and non-manufacturing sites, in Japan and overseas, completed the acquisition of ISO 14001 certification.

ISO 14000 is an international standard for environmental management that was established by the International Standards Organization in 1996 against the background of growing concern regarding global warming, destruction of the ozone layer, and global deforestation.





## WORKING FOR HIGH QUALITY

In order provide high quality and reliable products and services than meet customer needs,

Seiko Epson made early efforts towards obtaining ISO9000 series certification and has acquired ISO9001 for all business establishments in Japan and abroad. We have also acquired ISO/TS 16949 certification that is requested strongly by major automotive manufacturers as standard.

ISO/TS16949 is the international standard that added the sector-specific supplemental requirements for automotive industry based on ISO9001.

### ► Explanation of the mark that are using it for the catalog

	► Pb free.
	► Complies with EU RoHS directive. *About the products without the Pb-free mark. Contains Pb in products exempted by EU RoHS directive. (Contains Pb in sealing glass, high melting temperature type solder or other.)
	► Designed for automotive applications such as Car Multimedia, Body Electronics, Remote Keyless Entry etc.
	► Designed for automotive applications related to driving safety (Engine Control Unit, Air Bag, ESC etc ).

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