

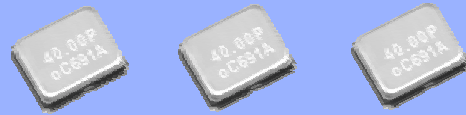


# CRYSTAL OSCILLATOR

Low Profile • High stability SPXO

## SG-211 series

- Frequency range : 4.750 MHz to 48.000 MHz
- Supply voltage : 2.5 V Typ. / 3.3 V Typ.
- Current consumption : 3.5 mA Max.  
(SDC 2.5 V No load condition 48 MHz)
- Function : Standby( $\overline{ST}$ )
- Thickness : 0.7 mm Typ.



Actual size



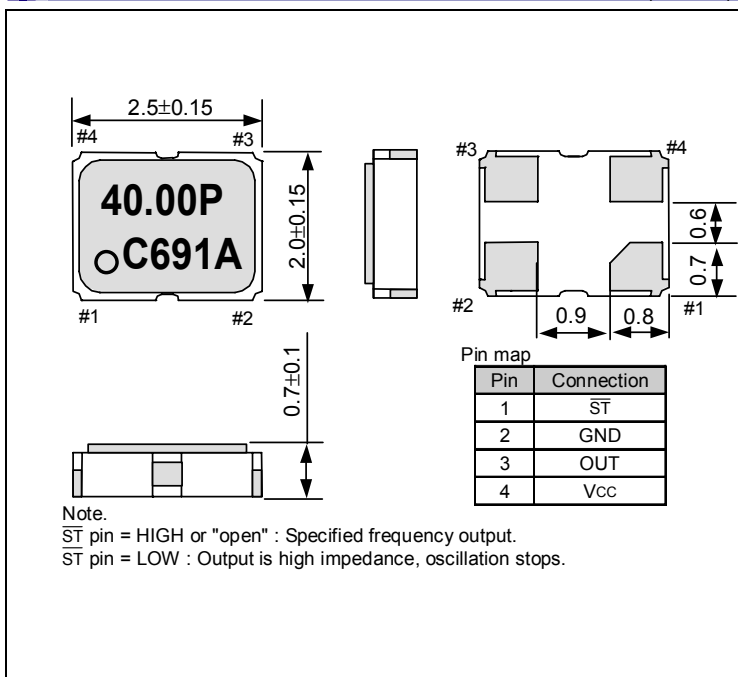
### Specifications (characteristics)

Item	Symbol	Specifications		Remarks
		SG-211SDC	SG-211SCC	
Output frequency range	$f_0$	4.750 MHz to 48.000 MHz		
Supply voltage	$V_{CC}$	2.5 V Typ. 2.25 V to 2.7 V	3.3 V Typ. 2.7 V to 3.63 V	
Temperature range	Storage temperature	-40 °C to +125 °C		Store as bare product after unpacking
	Operating temperature	-40 °C to +85 °C		
Frequency tolerance *	$f_{tol}(osc)$	D: $\pm 20 \times 10^{-6}$ H: $\pm 20 \times 10^{-6}$ , T: $\pm 15 \times 10^{-6}$		-20 °C to +70 °C -40 °C to +85 °C $V_{CC} \pm 10\%$
Current consumption	$I_{CC}$	2.5 mA Max.	3.5 mA Max.	No load condition, 4.75 MHz $\leq f_0 \leq 32$ MHz
		3.0 mA Max.	4.0 mA Max.	No load condition, 32 MHz $< f_0 \leq 40$ MHz
		3.5 mA Max.	4.5 mA Max.	No load condition, 40 MHz $< f_0 \leq 48$ MHz
Stand-by current	$I_{std}$	5.0 $\mu$ A Max.		$\overline{ST} = GND$
Symmetry	SYM	45 % to 55 %		50 % $V_{CC}$ level, $L_{CMOS} \leq 15$ pF
High output voltage	$V_{OH}$	90 % $V_{CC}$ Min.		$I_{OH} = -4$ mA
Low output voltage	$V_{OL}$	10 % $V_{CC}$ Max.		$I_{OL} = 4$ mA
Output load condition (CMOS)	$L_{CMOS}$	15 pF Max.		
Output enable / disable input voltage	$V_{IH}$	70 % $V_{CC}$ Min.		$\overline{ST}$ terminal
	$V_{IL}$	30 % $V_{CC}$ Max.		
Output rise and fall time	$t_r / t_f$	4.5 ns Max.		20 % $V_{CC}$ to 80 % $V_{CC}$ level, $L_{CMOS} = 15$ pF
Oscillation start up time	$t_{osc}$	5 ms Max.		$t=0$ at 90 % $V_{CC}$
Frequency aging	$f_{aging}$	This is included frequency tolerance		+25 °C, First year, $V_{CC} = 2.5$ V, 3.3 V

\* Please contact us for inquiries regarding available frequency tolerance.

### External dimensions

(Unit:mm)



### Footprint (Recommended)

(Unit:mm)

