

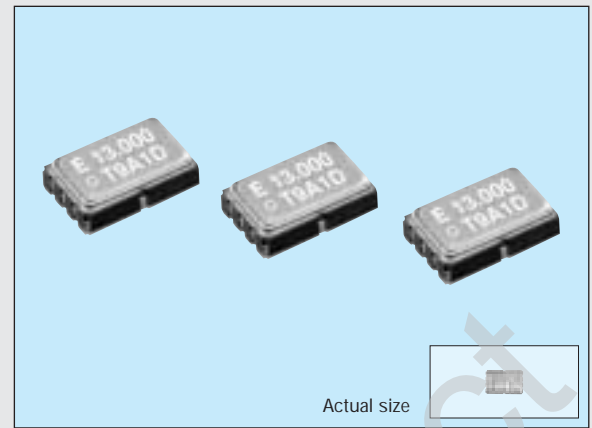
TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR

# TG-2820CB

Product number (please refer to page 2)

**Q3702CB0x xxx x00**

- Developed for cellular phone.
- Reflowable and high density mounting type ultra small size SMD. (5.0x3.2x1.5 mm)
- Using the heat-resisting type AT cut quartz crystal. allows almost the same temperature soldering as universal SMD IC.
- Operating supply voltage : 2.8 V.



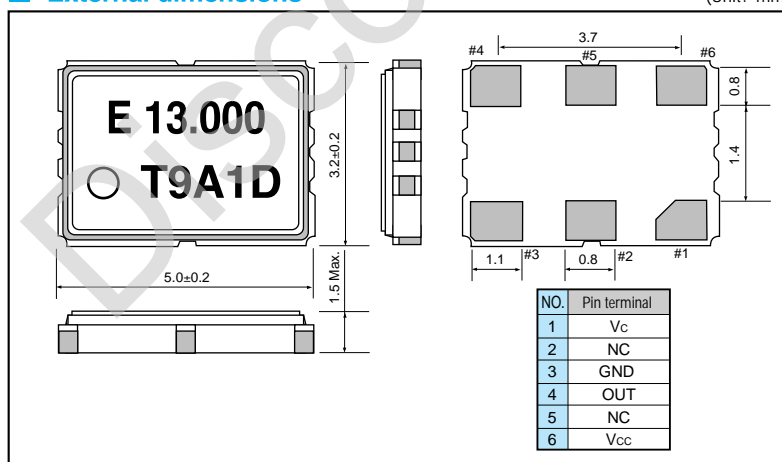
## Specifications

Item	Symbol	Specifications	Remarks
Output frequency range	$f_0$	12.5000 MHz to 19.8000 MHz Standard : 12.8000, 13.0000, 16.8000, 19.2000, 19.6800, 19.8000MHz	
Power source voltage	Max. supply voltage	$V_{CC-GND}$	-0.3 V to +6.0 V
	Operating voltage	$V_{CC}$	2.8 V $\pm$ 0.14 V
Temperature range	Storage temperature	$T_{STG}$	-40 °C to +85 °C
	Operating temperature	$T_{OPR}$	-30 °C to +80 °C
Frequency tolerance	$\Delta f_0$	$\pm 1.5 \times 10^{-6}$ Max.	$V_C=1.4$ V, +25 °C $\pm 2$ °C
Frequency stability vs. temperature	$\Delta f_T$	$\pm 2.5 \times 10^{-6}$ Max.	-30 °C to +80 °C (reference at +25 °C)
Frequency stability vs. load	$\Delta f_L$	$\pm 0.2 \times 10^{-6}$ Max.	10 k $\Omega$ //10 pF $\pm 10\%$
Frequency stability vs. supply voltage	$\Delta f_V$	$\pm 0.3 \times 10^{-6}$ Max.	2.8 V $\pm 5\%$
Aging	$f_a$	$\pm 1 \times 10^{-6}$ Max.	$T_a=+25$ °C, first year
Current consumption	$I_{CC}$	1.5 mA Max.	$V_{CC}=2.8$ V, 10 k $\Omega$ //10 pF
Input resistance	$Z_{IN}$	800 k $\Omega$ Min.	$V_C-GND(DC)$ , $V_C=1.4$ V
Frequency control range	$\Delta f_C$	$\pm 7 \times 10^{-6}$ Min.	$V_C=1.4$ V $\pm 1.0$ V
Frequency change polarity		Positive polarity	
Duty	Duty	30 % to 70 %	GND level (DC cut)
Output level	$V_{OUT}$	0.8 V Min.	Peak to peak
Output load	$R_L$	9 k $\Omega$ to 11 k $\Omega$	DC cut capacitor = 0.01 $\mu$ F
	$C_L$	9 pF to 11 pF	

Note: Please contact us for inquiries about specifications other than the above.

## External dimensions

(Unit: mm)



## Recommended soldering pattern

(Unit: mm)

