

TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR

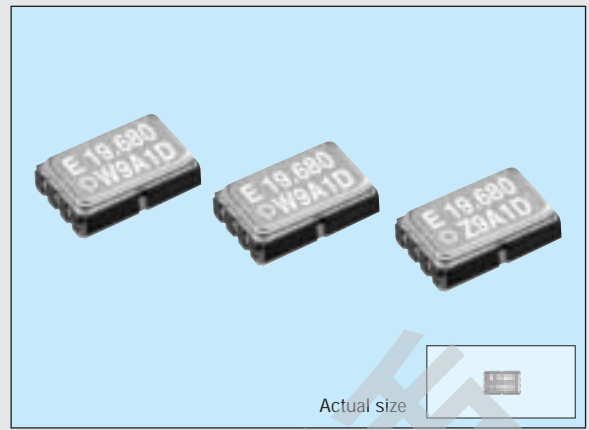
TG-2824CB / 2825CB

Products number (please refer to page 2)

Q3703CB0xxxxx00

Q3704CB0xxxxx00

- Developed for CDMA cellular phone (Low noise level: -120 dBc/Hz Typ. at 100 Hz offset, $f_0 = 19.68$ MHz)
- Power saving function (standby function) built-in. (TG-2824CB)
- 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.



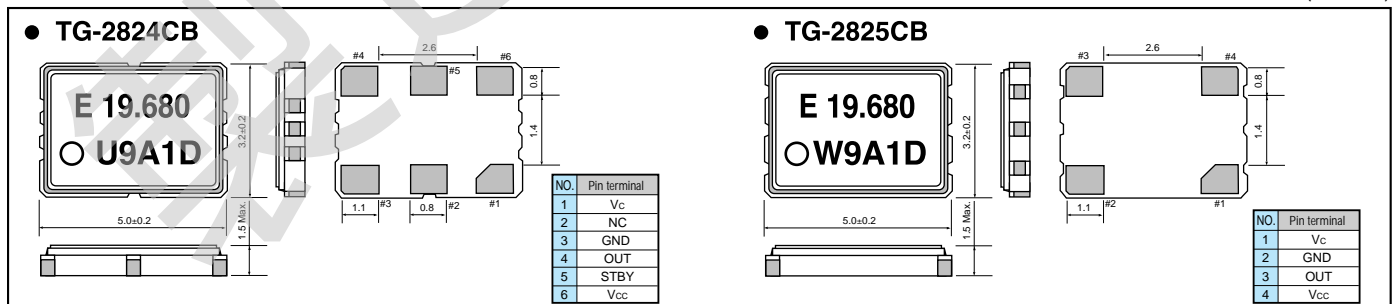
Specifications

Item	Symbol	Specifications		Remarks
		TG-2824CB	TG-2825CB	
Output frequency range	f_0	12.5000 MHz to 19.8000 MHz Standard : 19.2000, 19.6800, 19.8000 MHz		12.5 MHz $\leq f_0 \leq$ 19 MHz : Please contact us for inquiries about frequency control range
Power source voltage	Max. supply voltage	V_{CC-GND}	-0.3 V to +6.0 V	
	Operating voltage	V_{CC}	2.8 V ± 0.14 V	
Temperature range	Storage temperature	T_{STG}	-40 °C to +85 °C	Stored as bare product after unpacking
	Operating temperature	T_{OPR}	-30 °C to +80 °C	
Frequency tolerance	Δf_0		$\pm 1.5 \times 10^{-6}$ Max.	$V_C = 1.4$ V, +25 °C ± 2 °C
Frequency stability vs. temperature	Δf_T		$\pm 2.0 \times 10^{-6}$ Max.	-30 °C to +80 °C (reference at +25 °C)
Frequency stability vs. load	Δf_L		$\pm 0.2 \times 10^{-6}$ Max.	10 k Ω /10 pF $\pm 10\%$
Frequency stability vs. supply voltage	Δf_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
Supply current	I_{CC}		1.8 mA Max.	$V_{CC} = 2.8$ V, 10 k Ω /10 pF 19.68 MHz, STBY = V_{CC}
			50 μ A Max.	$V_{CC} = 2.8$ V, 10 k Ω /10 pF 19.68 MHz, STBY = GND (DC cut)
Input resistance	Z_{IN}		800 k Ω Min.	$V_C = GND(DC)$, $V_C = 1.4$ V
Frequency control range	Δf_C		$\pm 5.5 \times 10^{-4}$ to $\pm 11 \times 10^{-4}$	$V_C = 1.4$ V ± 1.0 V, 19 MHz $< f_0 \leq$ 19.8 MHz 12.5 MHz $\leq f_0 \leq$ 19 MHz : No voltage control function
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 Ω to 11 k Ω	DC cut capacitor = 0.01 μ F
	C_L		9 pF to 11 pF	

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

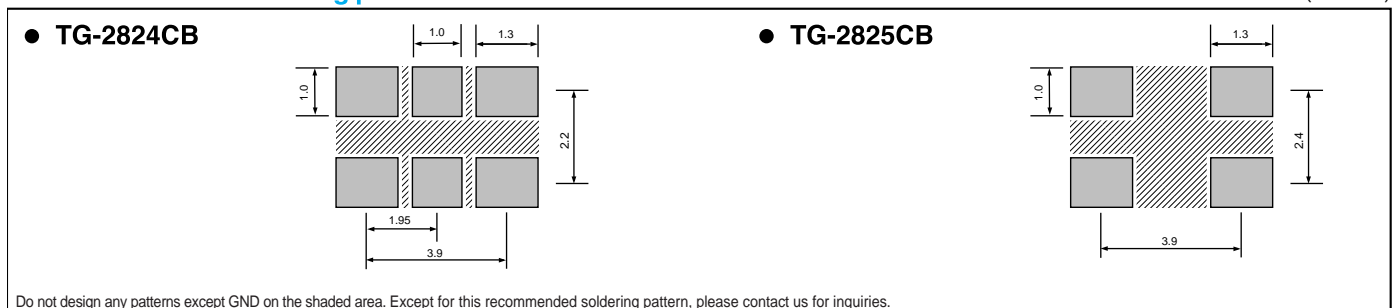
External dimensions

(Unit: mm)



Recommended soldering pattern

(Unit: mm)



Do not design any patterns except GND on the shaded area. Except for this recommended soldering pattern, please contact us for inquiries.