

TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR

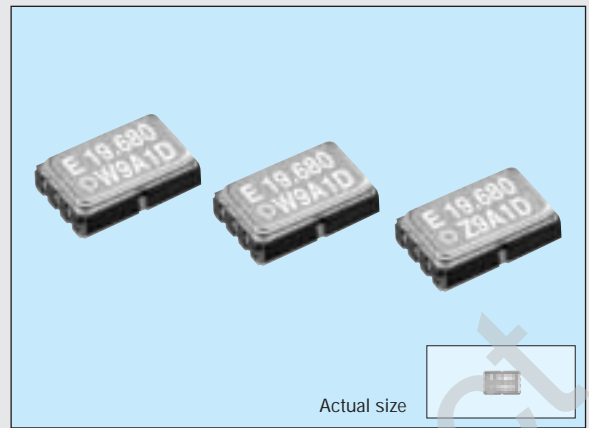
# TG-2824CB / 2825CB

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, fo = 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.



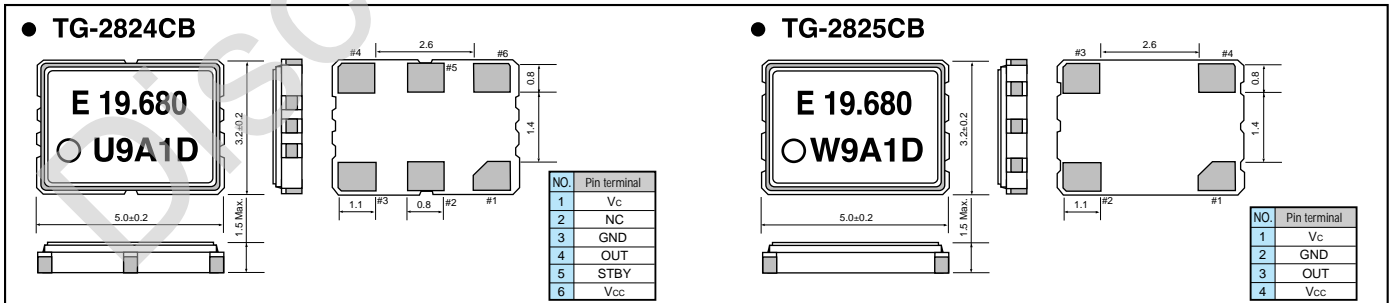
## Specifications

Item	Symbol	Specifications		Remarks
		TG-2824CB	TG-2825CB	
Output frequency range	fo	12.5000 MHz to 19.8000 MHz Standard : 19.2000, 19.6800, 19.8000 MHz		12.5 MHz ≤ fo ≤ 19 MHz : Please contact us for inquiries about frequency control range
Power source voltage	Max. supply voltage	Vcc-GND	-0.3 V to +6.0 V	
	Operating voltage	Vcc	2.8 V ±0.14 V	
Temperature range	Storage temperature	TSTG	-40 °C to +85 °C	Stored as bare product after unpacking
	Operating temperature	TOPR	-30 °C to +80 °C	
Frequency tolerance	Δfo		±1.5 x 10 <sup>-6</sup> Max.	Vc=1.4 V, +25 °C ±2 °C
Frequency stability vs. temperature	Δfr		±2.0 x 10 <sup>-6</sup> Max.	-30 °C to +80 °C (reference at +25 °C)
Frequency stability vs. load	Δfl		±0.2 x 10 <sup>-6</sup> Max.	10 kΩ//10 pF ± 10%
Frequency stability vs. supply voltage	Δfv		±0.3 x 10 <sup>-6</sup> Max.	2.8 V ±5 %
Aging	fa		±1 x 10 <sup>-6</sup> Max.	Ta=+25 °C, first year
Supply current	Icc		1.8 mA Max.	Vcc=2.8 V, 10 kΩ//10 pF 19.68 MHz, STBY=Vcc
			50 μA Max.	Vcc=2.8 V, 10 kΩ//10 pF 19.68 MHz, STBY=GND (DC cut)
Input resistance	ZIN		800 kΩ Min.	Vc-GND(DC), Vc=1.4 V
Frequency control range	Δfc		±5.5 x 10 <sup>-4</sup> to ±11 x 10 <sup>-4</sup>	Vc=1.4 V ±1.0 V, 19 MHz < fo ≤ 19.8 MHz 12.5 MHz ≤ fo ≤ 19 MHz : No voltage control function
Frequency change polarity			Positive polarity	
Duty	Duty		30 % to 70 %	GND level (DC cut)
Output level	VOUT		0.8 V Min.	Peak to peak
Output load	RL		9 kΩ to 11 kΩ	DC cut capacitor = 0.01 μF
	CL		9 pF to 11 pF	

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

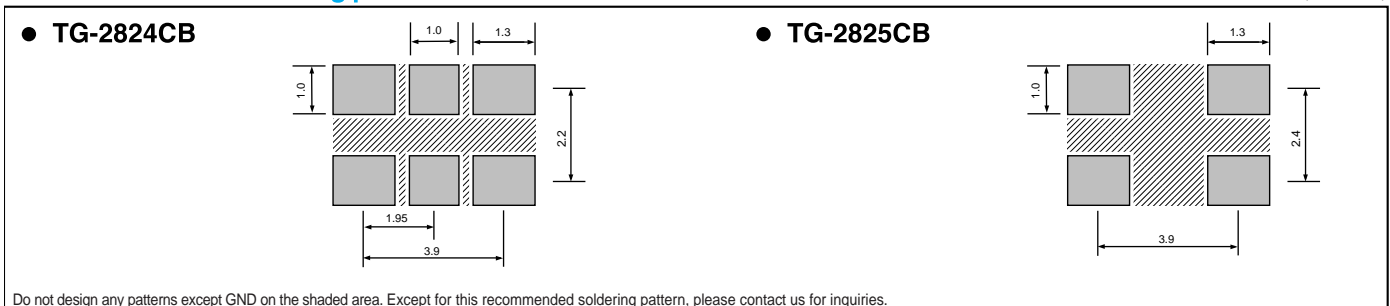
## External dimensions

(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.