

Temperature Compensated Crystal Oscillator (TCXO)

# TG-5005CE 26MHz

- Reflowable and high density mounting type ultra small size SMD (3.2×2.5×0.9 mm).
- Using the heat-resisting type AT cut quartz crystal allows almost the same temperature soldering as universal SMD IC
- Operating supply voltage : 2.8V.

**■ Specifications**

1. Absolute maximum ratings

Parameter	Symbol	Value	Unit	Note
Supply voltage	V <sub>CC-GND</sub>	-0.3 to 6.0	V	
Storage temperature range	T <sub>stg</sub>	-40 to +85	°C	

2. Operating range

Parameter	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
Supply voltage	V <sub>CC</sub>	2.50	2.80	3.60	V	
Operating temperature range 1	T <sub>use</sub>	-30	+25	+85	°C	
Operating temperature range 2		-40	+25	+85	°C	
Output load	Load <sub>R</sub>	9	10	11	kΩ	
	Load <sub>C</sub>	9	10	11	pF	
DC-cut capacitor	C <sub>C</sub>	0.01μ			F	

DC-cut capacitor is not included in our TCXO. Please insert DC-cut capacitor in output line.

3. Frequency characteristics

- 1) Output frequency 26.000000 MHz
- 2) Frequency characteristics

(V<sub>CC</sub>=2.8 V, Load=10kOhm//10pF(DC cut), T<sub>use</sub> =+25 °C)

Parameter	Symbol	Value	Unit	Note
Frequency tolerance	f <sub>tol</sub>	+/- 2.0×10 <sup>-6</sup> Max.	-	T <sub>use</sub> =+25 °C +/-2 °C Reflow cycles : 2 times.*1
Frequency / temperature characteristics	fo-Tc	+/- 0.5×10 <sup>-6</sup> Max.	-	T <sub>use</sub> =-30 °C to +85 °C Based on frequency at +25 °C
		+/- 2.5×10 <sup>-6</sup> Max.	-	T <sub>use</sub> =-40 °C to +85 °C Based on frequency at +25 °C
Frequency slope vs. Temp.	-	± 0.1×10 <sup>-6</sup> /°C Max.	-	T <sub>use</sub> =-20 °C to +70 °C
		± 0.2×10 <sup>-6</sup> /°C Max.	-	T <sub>use</sub> =-30 °C to +85 °C
		± 0.5×10 <sup>-6</sup> /°C Max.	-	T <sub>use</sub> =-40 °C to -85 °C
Static temperature hysteresis	-	± 0.6×10 <sup>-6</sup> /°C Max.	-	Frequency change after reciprocal temperature ramped over the operating temperature range 1. Frequency measured before and after at 25 °C

Frequency / Load coefficient	fo-Load	+/- 0.1×10 <sup>-6</sup> Max.	-	Load :10 kΩ//10 pF +/-10 % each
Frequency / voltage coefficient	fo-Vcc	+/- 0.2×10 <sup>-6</sup> Max.	-	V <sub>CC</sub> =2.8 V +/- 5%
G sensitivity	-	3.0×10 <sup>-9</sup> /G Max.	-	All 3 axes,random vibration,30Hz to 500Hz
Frequency ageing	f_age	+/- 1.0×10 <sup>-6</sup> Max.	-	T_use =+25 °C First year
		+/- 2.0×10 <sup>-6</sup> Max.		T_use =+25 °C 2 years
		+/- 4.0×10 <sup>-6</sup> Max.		T_use =+25 °C 10 years

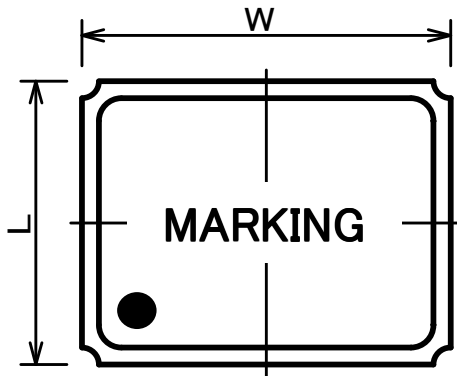
\*1 Measurement of frequency deviation is made 1h after reflow soldering.

#### 4.Electrical characteristics

(V<sub>CC</sub>=2.8 V,Load=10kOhm//10pF(DC cut), T<sub>use</sub> =+25 °C)

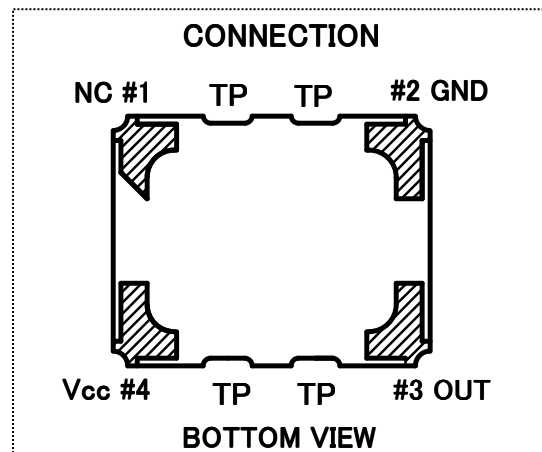
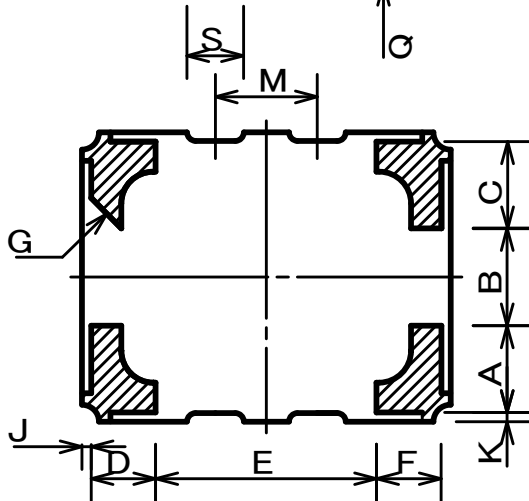
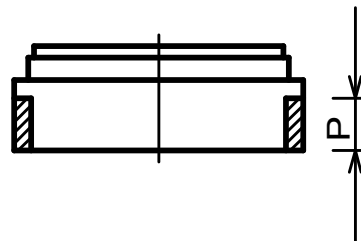
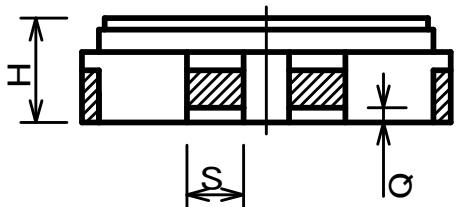
Parameter	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
Current consumption	I <sub>cc</sub>			1.5	mA	
Output level	V <sub>pp</sub>	0.8			Vp-p	Peak to peak voltage
SSB Phase noise	L(f)			-57	dBc/Hz	Offset:1 Hz
				-88		Offset:10 Hz
				-112		Offset:100 Hz
				-130		Offset:1 kHz
				-140		Offset:10 kHz

•OUTLINE DRAWING



Marking  
TBD

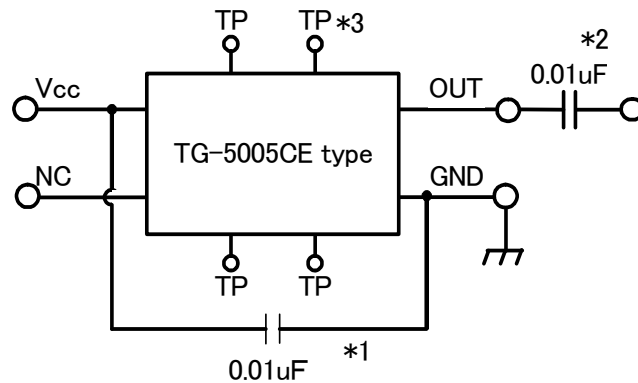
Material  
Ceramics(base)  
Au coated nickel(terminal)  
Fe-Ni-Co(lid)



(unit : mm)

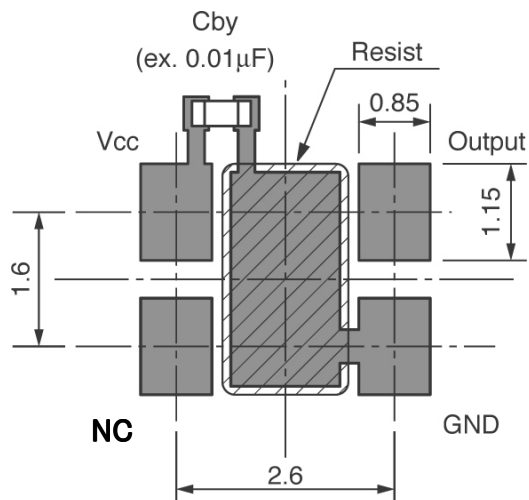
DIM.	MIN.	TYP.	MAX.	DIM.	MIN.	TYP.	MAX.
W	3.00	3.20	3.40	F	—	0.57	—
L	2.30	2.50	2.70	G	—	C 0.27	—
H	0.80	0.90	1.00	J	—	0.08	—
A	—	0.765	—	K	—	0.08	—
B	0.76	0.86	0.96	M	0.80	0.90	1.00
C	—	0.765	—	P	0.41	0.46	0.51
D	—	0.57	—	Q	—	0.13	—
E	1.85	1.95	2.05	S	0.40	0.50	0.60

• CONNECTION



- \*1 Please connect capacitor(recommendation:0.01  $\mu$  F) between "Vcc" and "GND" terminal.
- \*2 Please connect capacitor(recommendation:0.01  $\mu$  F) between "OUT" terminal and load.
- \*3 Do not connect "TP" terminal.
- \*4 This product has one chip LSI. Do not supply over +6V or negative voltage under -0.3V to "Vcc" terminal. Do not supply over Vcc+0.3V or negative voltage under -0.3V to "NC" terminal. Do not supply any voltages to "OUT" terminal.
- \*5 Do not supply any voltages in any way which differs from the above connection figure.
- \*6 Please make the NC pin GND connection or OPEN connection.

• Recommended soldering pattern



Except for this recommended soldering pattern, please contact us for inquiries.

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