

Temperature Compensated Crystal Oscillator (TCXO )

# TG-5035CE 16.367667 MHz

- TG-5005CE-29G 16.367667MHz upper compatible.
- 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 : 3.3 V.

**■ Specifications**

1. Absolute maximum ratings

Parameter	Symbol	Value	Unit	Note
Supply voltage	V <sub>CC-GND</sub>	-0.3 to 4.5	V	
Storage temperature range	T <sub>STG</sub>	-40 to +85	°C	

2. Operating range

Parameter	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
Power voltage	V <sub>CC</sub>	3.135	3.3	3.465	V	V <sub>CC</sub> =3.3V +/- 5 %
Power voltage	GND	0.0	0.0	0.0	V	
Operating temperature range	T <sub>use</sub>	-30	+25	+85	°C	
Output load	Load_R	9	10	11	kΩ	
	Load_C	9	10	11	pF	
	DC-cut capacitor	C <sub>C</sub>	0.01			μF

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

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### 3. Frequency characteristics

1) Output frequency 16.367 667 MHz

#### 2) Frequency characteristics

(Condition :  $V_{CC}=3.3$  V,  $GND=0.0$  V, Load  $10k\Omega//10pF$ (DC cut),  $T_{use}=+25^{\circ}C$ )

Parameter	Symbol	Value	Unit	Note
Frequency tolerance	F_tol	+/- $0.5 \times 10^{-6}$ Max.	-	$T_{use}=+25^{\circ}C$ +/- $2^{\circ}C$ Before reflow soldering
Reflow soldering tolerance	-	+/- $0.9 \times 10^{-6}$ Max.	-	$T_{use}=+25^{\circ}C$ +/- $2^{\circ}C$ Reflow cycles : 2 times.*1
Frequency / temperature coefficient	Fo-Tc	+/- $0.5 \times 10^{-6}$ Max.	-	$T_{use}=-30^{\circ}C$ to $+85^{\circ}C$ Based on frequency at $+25^{\circ}C$
Frequency slope vs. Temp.	-	+/- $0.1 \times 10^{-6}$ Max.	$^{\circ}C$	$-20^{\circ}C$ to $+70^{\circ}C$
Frequency / Load coefficient	Fo-Load	+/- $0.1 \times 10^{-6}$ Max.	-	Load : $10k\Omega//10 pF$ +/- $10\%$ each
Frequency / voltage coefficient	Fo-Vcc	+/- $0.1 \times 10^{-6}$ Max.	-	$V_{CC}=3.3$ V +/- $5\%$
Frequency aging	F_aging	+/- $1.0 \times 10^{-6}$ Max.	-	$T_{use}=+25^{\circ}C$ First year

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

### 4. Electrical characteristics

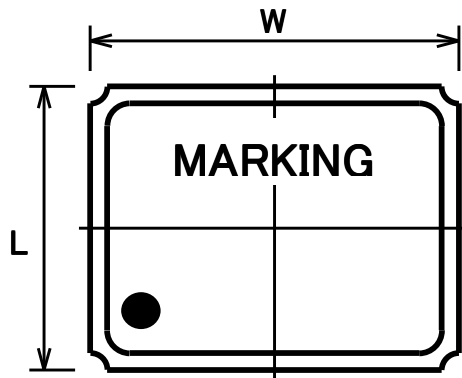
(Condition :  $V_{CC}=3.3$  V,  $GND=0.0$  V, Load  $10k\Omega//10pF$ (DC cut),  $T_{use}=+25^{\circ}C$ )

Parameter	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
Current consumption	Icc			2.0	mA	
Output level	Vpp	0.8			V	Peak to peak voltage
SSB Phase noise	L(f)			-52	dBc/Hz	Offset:1 Hz
				-78		Offset:10 Hz
				-106		Offset:100Hz
				-128		Offset:1 kHz
				-148		Offset:10 kHz
				-150		Offset:100 kHz

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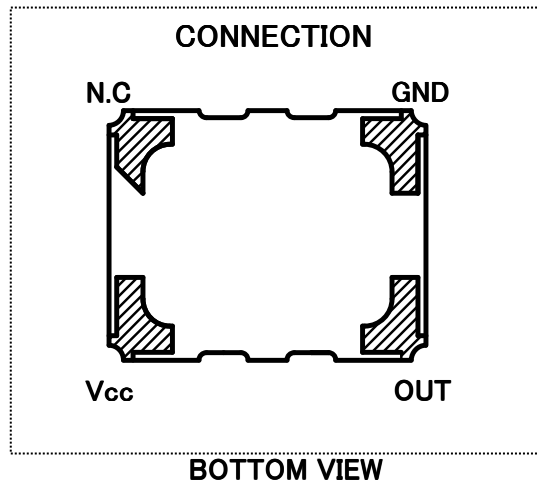
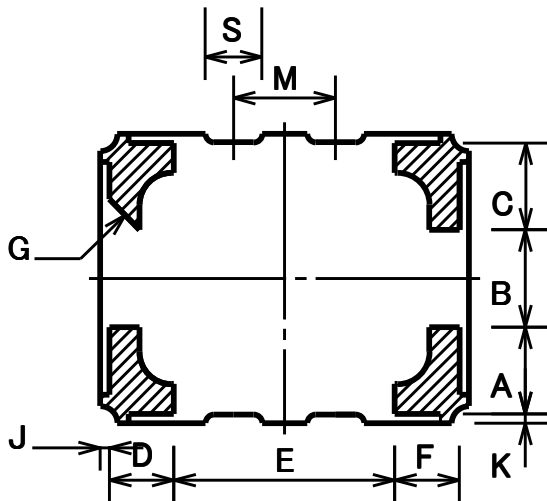
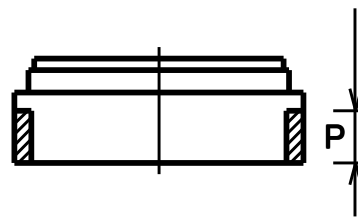
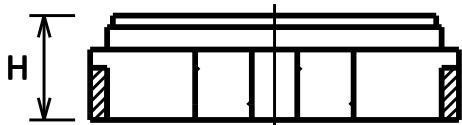
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5. OUTLINE DRAWING



Marking  
TBD

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



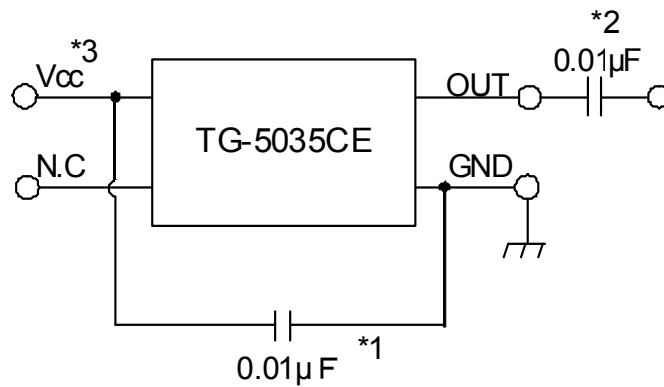
(unit : mm)

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	—	S	0.40	0.50	0.60
E	1.85	1.95	2.05				

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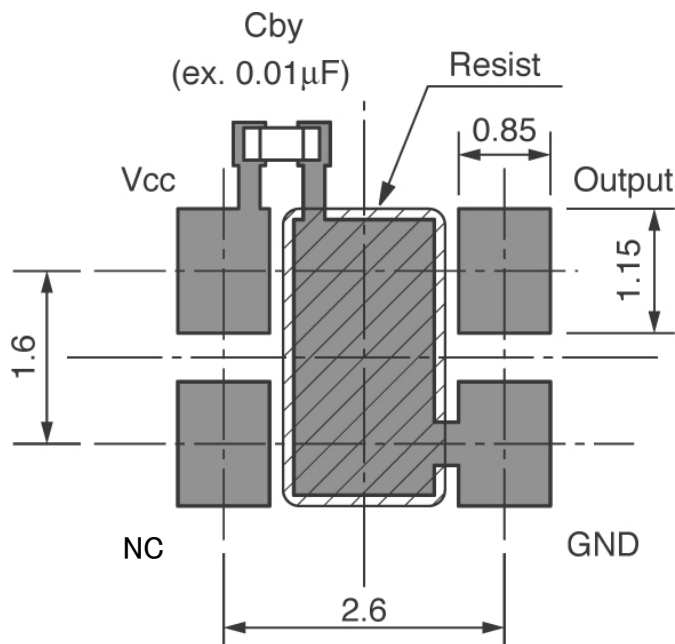
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## 6. CONNECTION



- \*1 Please connect capacitor(recommendation:0.01µF) between "Vcc" and "GND" terminal.
- \*2 Please connect capacitor(recommendation:0.01µF) between "OUT" terminal and load.
- \*3 This product has one chip LSI. Do not supply over +4.5V or negative voltage under -0.3V to "Vcc" terminal. Do not supply over Vcc+0.3V or negative voltage under -0.3V to "Vc" terminal. Do not open "Vc" terminal. Do not supply any voltages to "OUT" terminal.
- \*4 Do not supply any voltages in any way which differs from the above connection figure.

## 7. Recommended soldering pattern



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

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