

### Features

- Frequency range : 10MHz to 70MHz
- Ultra compact and thin
- SMD seam sealing ceramic package
- Supply voltage : 1.8V & 3.3V
- Clipped Sinewave output
- Low power consumption
- Voltage control function available
- External dimensions (mm)  
L : 1.6 x W : 1.2 x H : 0.6
- RoHS compliant & Pb free

### Applications

- Mobile communications
- GNSS
- Smartphone, Mobile phone
- Wearables
- IoT devices
- Portable radio communications

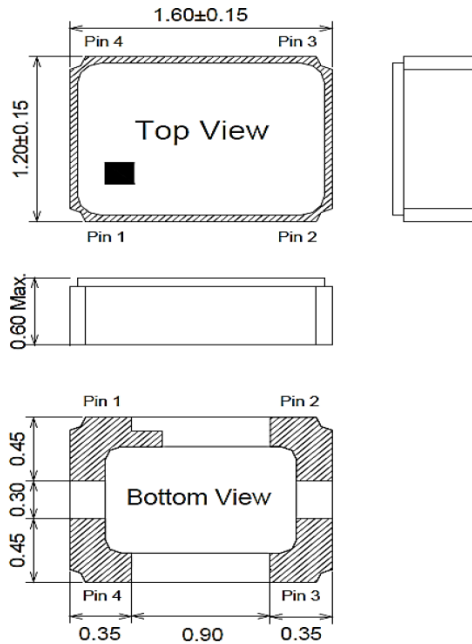
### Electrical Characteristics

Item	QTT161	Conditions	
Nominal Frequency Range ( $F_0$ )	10MHz ~ 70MHz		
Frequency Tolerance ( $F_{tol}$ )	$\pm 2.0$ ppm Max.	Note [1]	
Frequency Stability	vs Temperature	$\pm 0.5$ ppm, $\pm 2.0$ ppm	Note [2]
	vs Load	$\pm 0.2$ ppm Max.	Load $\pm 10\%$
	vs Supply Voltage	$\pm 0.2$ ppm Max.	$V_{DD} \pm 5\%$
Operating Temperature Range ( $T_{OTR}$ )	$-30^\circ\text{C} \sim +85^\circ\text{C}$		
Supply Voltage ( $V_{DD}$ )	1.8V, 3.3V		
Current Consumption ( $I_{DD}$ )	2.0 mA Max.		
Output Type	Clipped Sinewave		
Output Load	10k $\Omega$ // 10pF		
Output Level	0.8 V(p-p) Min.	Note [3]	
Start-up Time	5 ms Max.		
Auto Frequency Control (AFC) Range	$\pm 7$ ppm ~ $\pm 16$ ppm	VCTCXO, optional, Note [4]	
Phase Noise	-135 dBc/Hz Typ.	at 1kHz offset	
Aging ( $F_{aging}$ )	$\pm 1$ ppm Max.	at 25°C, first year	
Storage Temperature Range ( $T_{STR}$ )	$-55^\circ\text{C} \sim +125^\circ\text{C}$		

#### Notes:

- [1] Refer to nominal frequency after 2 times of reflow at 25°C.  
 [2] Refer to frequency at 25°C $\pm$ 2°C.  
 [3] Decoupling capacitor is required in external circuit.  
 [4] If supply voltage  $V_{DD} = 3.3\text{V}$ , control voltage  $V_{con} = 0.5 * V_{DD} \pm 1.0\text{V}$ .  
 If supply voltage  $V_{DD} = 1.8\text{V}$ , control voltage  $V_{con} = 0.5 * V_{DD} \pm 0.8\text{V}$ .

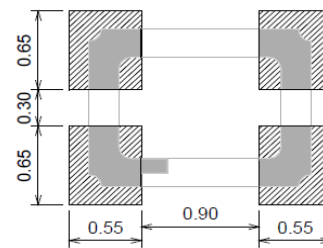
### Dimensions



### Pin function

Pin	Function	
	TCXO	VCTCXO
1	GND or NC	AFC
2	GND	
3	OUTPUT	
4	V <sub>DD</sub>	

### Recommended pad layout



(Unit: mm)

### Ordering Information

**QTT161 - 26.000M B G - T**

**Frequency in Hz**

Please contact us for available frequencies

**Supply Voltage**

B	3.3 V
D	1.8 V

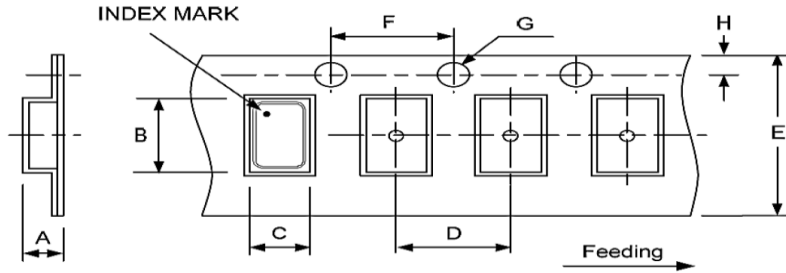
**Packaging Method**

T	Tape & Reel
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**Frequency Stability (over Temp.)**

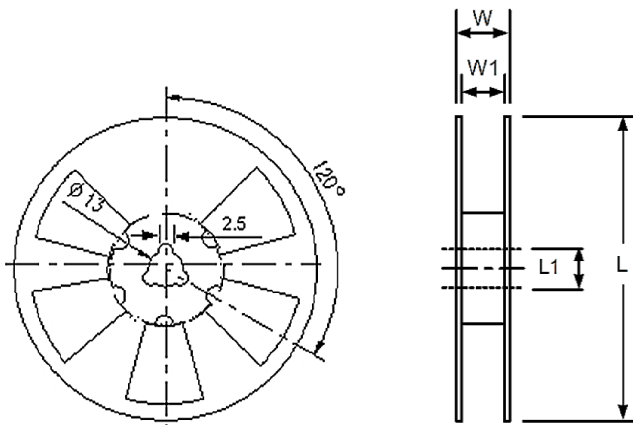
N	± 2.0 ppm (-30°C ~ +85°C), TCXO
S	± 2.0 ppm (-30°C ~ +85°C), VCTCXO
G	± 0.5 ppm (-30°C ~ +85°C), TCXO
V	± 0.5 ppm (-30°C ~ +85°C), VCTCXO

### Packing



DIMENSIONS	A	B	C	D	E	F	G	H
		0.80	1.80	1.40	4.00	8.00	4.00	1.55

(Unit: mm)



DIMENSIONS	L	L1	W	W1
		178	13	11.5

(Unit: mm)

### Reflow Profile

Solder melting point : 220°C, 60 sec. Min., 200 sec. Max.

Peak temperature : 260°C, 10 sec. Min., 30 sec. Max.

