

RoHS Compliant

### Features

- High stability and high reliability
- 2.7 to 5.5V drive available
- Clipped sine wave or CMOS level output
- Low phase noise
- Disable Function

### Applications

- Femtocell, Stratum3
- SONET/ SDH/ Ethernet

### How to Order

#### For Femtocell (Standard Spec.)

Frequency Tolerance (vs Temp.) :  $\pm 0.1 \times 10^{-6} / -10^{\circ}\text{C}$  to  $70^{\circ}\text{C}$

KT5032F 20000 A G T 33 T xx  
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

#### For Stratum3 (Standard Spec.)

Frequency Tolerance (vs Temp.) :  $\pm 0.28 \times 10^{-6} / -40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$

KT5032F 20000 K A W 33 T xx  
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Series	⑤ Upper Operating Temp.
② Output Frequency	<b>T</b> +70°C
③ Frequency Tolerance	<b>W</b> +85°C
<b>A</b> $\pm 0.1 \times 10^{-6}$	⑥ Supply Voltage
<b>K</b> $\pm 0.28 \times 10^{-6}$	<b>33</b> 3.3V
④ Lower Operating Temp.	⑦ Voltage Control Range
<b>A</b> -40°C	<b>T</b> TCXO
<b>G</b> -10°C	<b>Other*</b> VCTCXO
<b>J</b> 0°C	

\* Customer Spec.

⑧ Option Code

Packaging (Tape & Reel 1000 pcs./ reel)

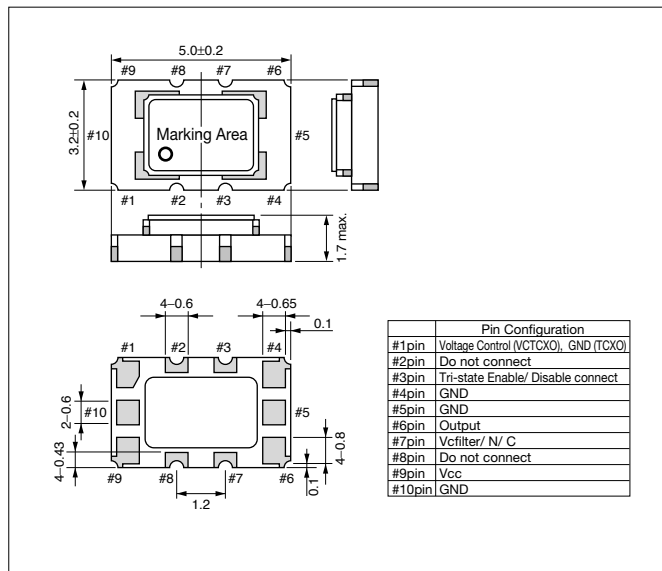
### Specifications

Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	fo	Standard Frequency: 10, 12.8, 19.2, 19.44, 20, 20.48, 24.576, 26, 30.72	10	40	MHz
Frequency Tolerance	f <sub>tol</sub>	vs Temperature (-10 to +70°C) $[\pm(f_{\text{max}}-f_{\text{min}})/ 2f_0]$	-0.1	+0.1	$\times 10^{-6}$
		vs Temperature (-40 to +85°C) $[\pm(f_{\text{max}}-f_{\text{min}})/ 2f_0]$	-0.28	+0.28	
Supply Voltage	V <sub>CC</sub>		+2.7	+5.5	V
Current Consumption	I <sub>CC</sub>	20MHz CMOS output	—	5	mA
Frequency Aging	f <sub>age</sub>	20years aging @40°C Including temp characteristics, initial tolerance, rated power supply voltage change and load change.	-4.6	+4.6	$\times 10^{-6}$
Voltage Control Range	f <sub>cont</sub>	Positive *100k ohm min	$\pm 5$	$\pm 20$	$\times 10^{-6}$
Output Level	V <sub>pp</sub>	Clipped Sine*, Load: 10k ohm // 10pF	0.8	—	Vp-p
Low Level Output Voltage	V <sub>OL</sub>	CMOS, Load: 15pF I <sub>OL</sub> =4mA	—	10% V <sub>CC</sub>	V
High Level Output Voltage	V <sub>OH</sub>	CMOS, Load: 15pF I <sub>OH</sub> =-4mA	90% V <sub>CC</sub>	—	V
Rise / Fall Time (10%V <sub>CC</sub> to 90%V <sub>CC</sub> )	tr/ tf	CMOS, Load: 15pF	—	5	ns
Symmetry	SYM	50% V <sub>CC</sub>	45	55	%
Phase Noise @20MHz	—	- 90 (@10Hz offset) -120 (@100Hz offset) -140 (@1kHz offset) -150 (@10kHz offset) -150 (@100kHz offset)			dBc/ Hz

\* : A DC-cut capacitor is not embedded in this crystal oscillator. In case of clipped sine output, connect a DC-cut capacitor ( $\geq 1\text{nF}$ ) to the line-out terminal of the oscillator.

### Dimensions

(Unit: mm)



### Recommended Land Pattern

(Unit: mm)

