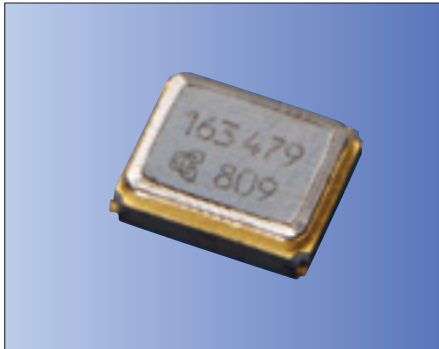


Temperature Compensated Crystal Oscillators (TCXO) Surface Mount Type TCXO (LSI Type) KT2016 Series



2.0×1.6mm



RoHS Compliant

Features

- Ultra-miniature SMD type (2.0×1.6×0.8mm)
- AFC function available
- Freq. temp. chrst. : ±2.0×10⁻⁶/ -30 to +85°C
- 1.7 to 3.6V drive available
- Reflow compatible

Applications

- 3G (CDMA, W-CDMA, TD-SCDMA), GPRS, GSM, Wi-Fi, WiMAX

How to Order

KT2016A 26000 D C W 28 T xx
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Series	⑥ Supply Voltage
② Output Frequency	28 2.8V 30 3.0V
③ Freq. Temp. Chrst.	⑦ Voltage Control Range
B ±1.0×10 ⁻⁶	T TCXO
C ±1.5×10 ⁻⁶	Other* VCTCXO
D ±2.0×10 ⁻⁶	* Customer Spec.
④ Lower Operating Temp.	⑧ Option Code
C -30°C	
E -20°C	
G -10°C	
⑤ Upper Operating Temp.	
W +85°C	
V +80°C	
U +75°C	

Packaging (Tape & Reel 4000 pcs./ reel)

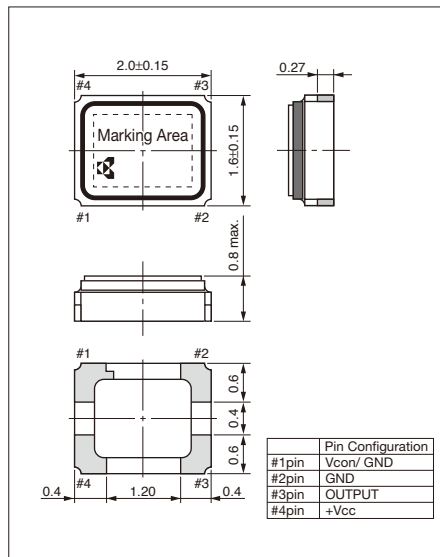
Specifications

Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	f _o	Standard Frequency: 13, 19.2, 26, 38.4, 52	13	52	MHz
Frequency Tolerance	f _{tol}	vs Temperature	-2	+2	×10 ⁻⁶
		vs Load	-0.1	+0.1	
		vs Voltage	-0.2	+0.2	
Frequency Aging	f _{age}	Per Year	-1	+1	×10 ⁻⁶
Storage Temperature Range	T _{stg}		-40	+85	°C
Operating Temperature Range	T _{use}		-30	+85	°C
Voltage Control Range	f _{cont}	Positive	±8	±15	×10 ⁻⁶
Supply Voltage	V _{CC}		1.7	3.6	V
Output Level	V _{pp}	Clipped Sine*, Load: 10k ohm // 10pF	0.8	—	Vp-p
Current Consumption	I _{CC}		—	2	mA
Harmonics	—		—	-5	dBc

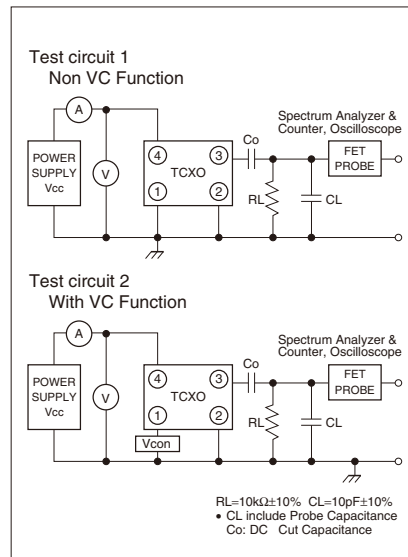
* : A DC-cut capacitor is not embedded in this crystal oscillator. Connect a DC-cut capacitor (≥1nF) to the line-out terminal of the oscillator.

Dimensions

(Unit: mm)

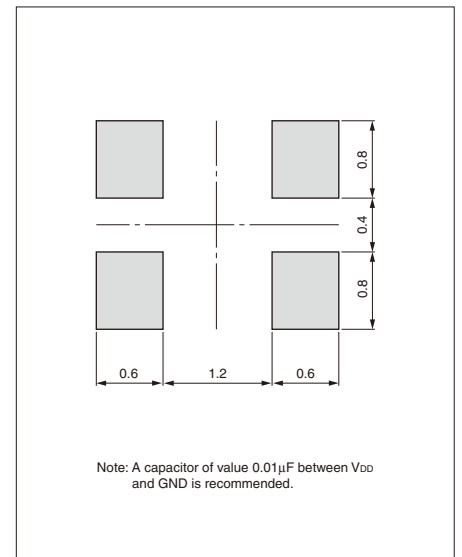


Test Circuit



Recommended Land Pattern

(Unit: mm)





RoHS Compliant

Features

- Miniature SMD type (2.5×2.0×0.8mm)
- AFC function available
- Freq. temp. chrst. : $\pm 2.0 \times 10^{-6}/ -30$ to $+85^\circ\text{C}$
- 1.7 to 3.6V drive available
- Reflow compatible

Applications

- 3G (CDMA, W-CDMA, TD-SCDMA), GPRS, GSM, Wi-Fi, WiMAX

How to Order

KT2520F 26000 D C W 28 T xx
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Series	⑥ Supply Voltage
② Output Frequency	28 2.8V 30 3.0V
③ Freq. Temp. Chrst.	⑦ Voltage Control Range
B $\pm 1.0 \times 10^{-6}$	T TCXO
C $\pm 1.5 \times 10^{-6}$	Other* VCTCXO
D $\pm 2.0 \times 10^{-6}$	* Customer Spec.
④ Lower Operating Temp.	⑧ Option Code
C -30°C	
E -20°C	
G -10°C	
⑤ Upper Operating Temp.	
W $+85^\circ\text{C}$	
V $+80^\circ\text{C}$	
U $+75^\circ\text{C}$	

Packaging (Tape & Reel 3000 pcs./ reel)

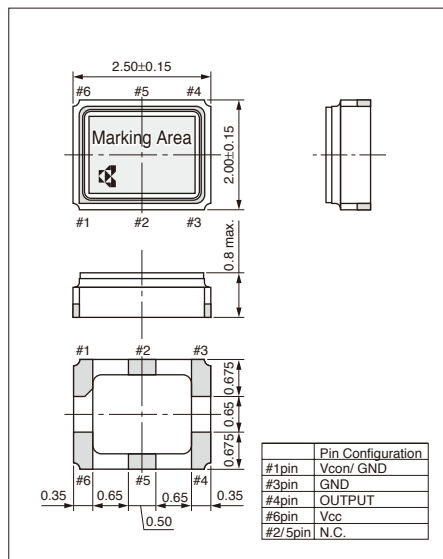
Specifications

Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	fo	Standard Frequency: 13, 19.2, 26, 38.4, 52	13	52	MHz
Frequency Tolerance	f _{tol}	vs Temperature	-2	+2	$\times 10^{-6}$
		vs Load	-0.1	+0.1	
		vs Voltage	-0.2	+0.2	
Frequency Aging	f _{age}	Per Year	-1	+1	$\times 10^{-6}$
Storage Temperature Range	T _{stg}		-40	+85	$^\circ\text{C}$
Operating Temperature Range	T _{use}		-30	+85	$^\circ\text{C}$
Voltage Control Range	f _{cont}	Positive	± 8	± 15	$\times 10^{-6}$
Supply Voltage	V _{CC}		1.7	3.6	V
Output Level	V _{pp}	Clipped Sine*, Load: 10k ohm // 10pF	0.8	—	Vp-p
Current Consumption	I _{CC}		—	2	mA
Harmonics	—		—	-5	dBc

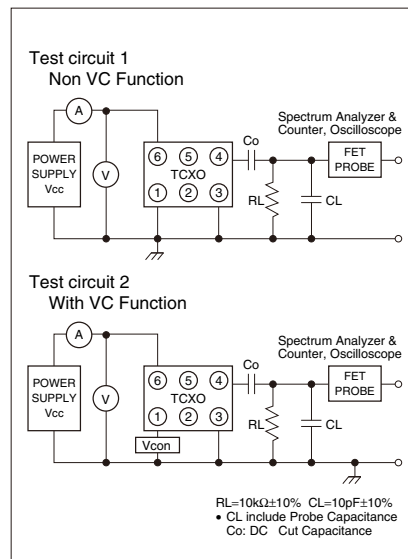
* : A DC-cut capacitor is not embedded in this crystal oscillator. Connect a DC-cut capacitor ($\geq 1\text{nF}$) to the line-out terminal of the oscillator.

Dimensions

(Unit: mm)

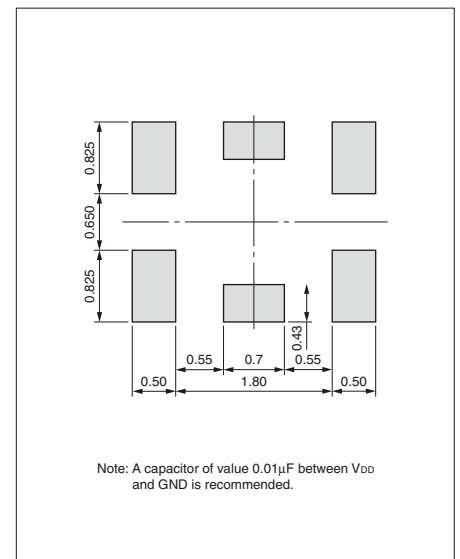


Test Circuit



Recommended Land Pattern

(Unit: mm)



Temperature Compensated Crystal Oscillators (TCXO) Surface Mount Type TCXO (LSI Type) KT3225 Series



3.2x2.5mm



RoHS Compliant

Features

- Miniature SMD type (3.2x2.5x1.0mm)
- Reflow compatible
- AFC function available
- 2.3 to 3.6V drive available
- Freq. temp. chrst. : $\pm 2.0 \times 10^{-6} / -30$ to $+85^\circ\text{C}$

Applications

- 3G (CDMA, W-CDMA, TD-SCDMA), GPRS, GSM, Wi-Fi, WiMAX
- Low power radio communications

How to Order

KT3225P 26000 D C W 28 T xx
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Series	⑥ Supply Voltage
② Output Frequency	28 2.8V 30 3.0V
③ Freq. Temp. Chrst.	⑦ Voltage Control Range
B $\pm 1.0 \times 10^{-6}$	T TCXO
C $\pm 1.5 \times 10^{-6}$	Other* VCTCXO
D $\pm 2.0 \times 10^{-6}$	* Customer Spec.
④ Lower Operating Temp.	⑧ Option Code
C -30°C	
E -20°C	
G -10°C	
⑤ Upper Operating Temp.	
W $+85^\circ\text{C}$	
V $+80^\circ\text{C}$	
U $+75^\circ\text{C}$	

Packaging (Tape & Reel 3000 pcs./ reel)

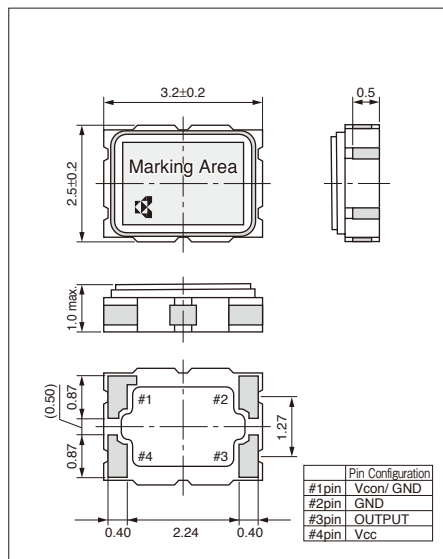
Specifications

Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	fo	Standard Frequency: 13, 19.2, 26, 38.4, 40, 52	13	52	MHz
Frequency Tolerance	f _{tol}	vs Temperature	-2	+2	$\times 10^{-6}$
		vs Load	-0.1	+0.1	
		vs Voltage	-0.2	+0.2	
Frequency Aging	f _{age}	Per Year	-1	+1	$\times 10^{-6}$
Storage Temperature Range	T _{stg}		-40	+85	$^\circ\text{C}$
Operating Temperature Range	T _{use}		-30	+85	$^\circ\text{C}$
Voltage Control Range	f _{cont}	Positive	± 8	± 15	$\times 10^{-6}$
Supply Voltage	V _{CC}		2.3	3.6	V
Output Level	V _{pp}	Clipped Sine*, Load: 10k ohm // 10pF	0.8	—	Vp-p
Current Consumption	I _{CC}		—	2	mA
Harmonics	—		—	-5	dBc

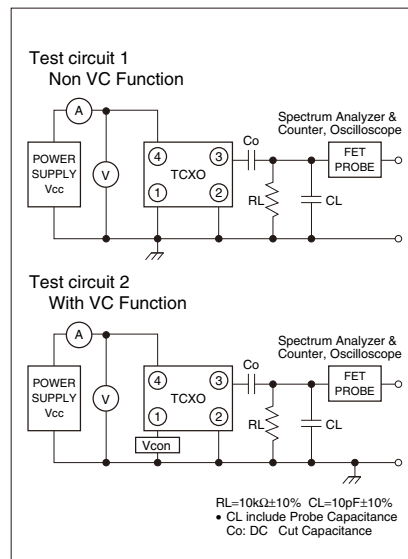
* : A DC-cut capacitor is not embedded in this crystal oscillator. Connect a DC-cut capacitor ($\geq 1\text{nF}$) to the line-out terminal of the oscillator.

Dimensions

(Unit: mm)

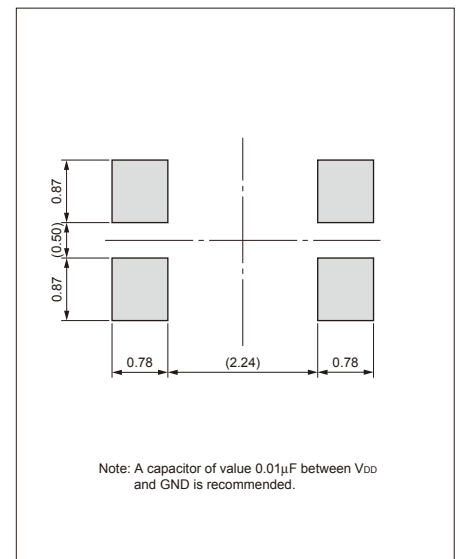


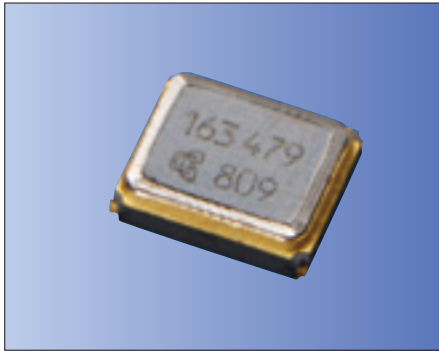
Test Circuit



Recommended Land Pattern

(Unit: mm)





RoHS Compliant

Features

- Ultra-miniature SMD type (2.0×1.6×0.8mm)
- Freq. temp. chrst. : $\pm 0.5 \times 10^{-6} / -30$ to $+85^\circ\text{C}$
- 1.7 to 3.6V drive available
- Reflow compatible
- Disable Function (Option)

Applications

- GPS Unit

How to Order

KT2016A 26000 A C W 28 T xx
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Series	⑥ Supply Voltage
② Output Frequency	18 1.8V 28 2.8V
③ Freq. Temp. Chrst.	⑦ Voltage Control Range
A $\pm 0.5 \times 10^{-6}$	T TCXO
④ Lower Operating Temp.	⑧ Option Code
C -30°C	
E -20°C	
G -10°C	
⑤ Upper Operating Temp.	
W $+85^\circ\text{C}$	
V $+80^\circ\text{C}$	
U $+75^\circ\text{C}$	

Packaging (Tape & Reel 4000 pcs./ reel)

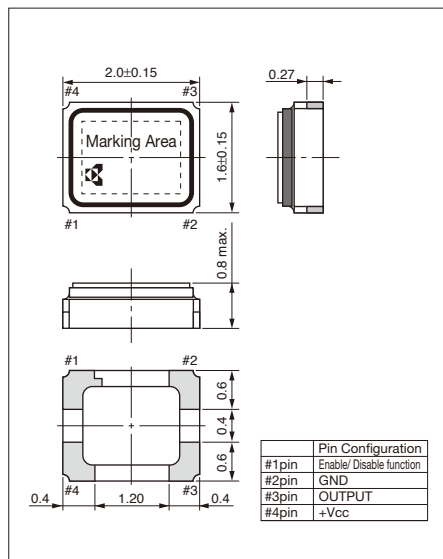
Specifications

Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	fo	Standard Frequency: 16.368, 16.369, 19.2, 26, 27.456, 33.6	—	—	MHz
Frequency Tolerance	f _{tol}	vs Temperature	-0.5	+0.5	$\times 10^{-6}$
		vs Load	-0.1	+0.1	
		vs Voltage	-0.2	+0.2	
Frequency Aging	f _{age}	Per Year	-1	+1	$\times 10^{-6}$
Storage Temperature Range	T _{stg}		-40	+85	$^\circ\text{C}$
Operating Temperature Range	T _{use}		-30	+85	$^\circ\text{C}$
Supply Voltage	V _{CC}		1.7	3.6	V
Output Level	V _{pp}	Clipped Sine*, Load: 10k ohm // 10pF	0.8	—	Vp-p
Current Consumption	I _{CC}		—	2	mA
Harmonics	—		—	-5	dBc

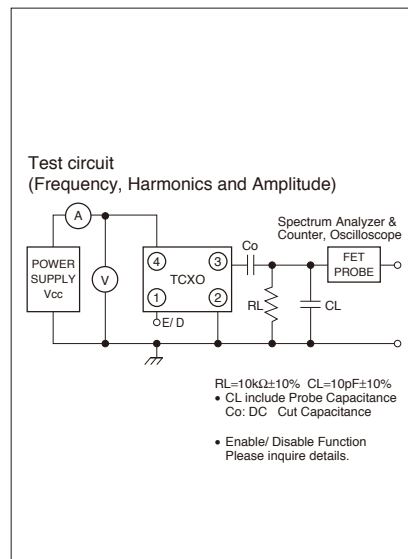
* : A DC-cut capacitor is not embedded in this crystal oscillator. Connect a DC-cut capacitor ($\geq 1\text{nF}$) to the line-out terminal of the oscillator.

Dimensions

(Unit: mm)

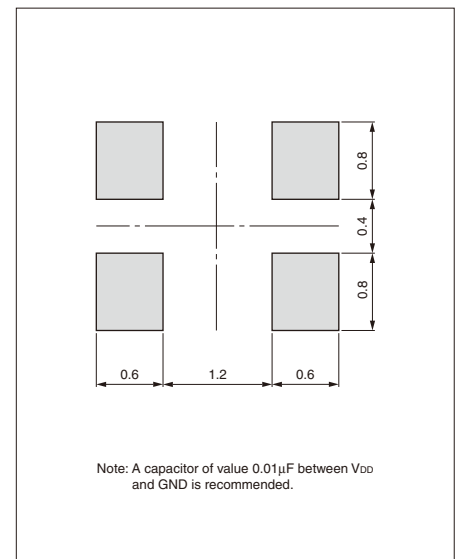


Test Circuit



Recommended Land Pattern

(Unit: mm)





RoHS Compliant

Features

- Miniature SMD type (2.5×2.0×0.8mm)
- Freq. temp. chrst. : $\pm 0.5 \times 10^{-6} / -30$ to $+85^\circ\text{C}$
- 1.7 to 3.6V drive available
- Reflow compatible
- Temperature sensor output (Option)
- Disable Function (Option)
- Lower Operating Temp. -40°C (Option)

Applications

- GPS Units

How to Order

KT2520F 26000 A C W 18 T xx
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① Series
 - ② Output Frequency
 - ③ Freq. Temp. Chrst.
 - ④ Lower Operating Temp.
 - ⑤ Upper Operating Temp.
 - ⑥ Supply Voltage
 - ⑦ Voltage Control Range
 - ⑧ Option Code
- | | |
|---|--------------------------|
| A | $\pm 0.5 \times 10^{-6}$ |
| C | -30°C |
| E | -20°C |
| G | -10°C |
| W | $+85^\circ\text{C}$ |
| V | $+80^\circ\text{C}$ |
| U | $+75^\circ\text{C}$ |
- | | | | |
|----|------|----|------|
| 18 | 1.8V | 28 | 2.8V |
| T | TCXO | | |

Packaging (Tape & Reel 3000 pcs./ reel)

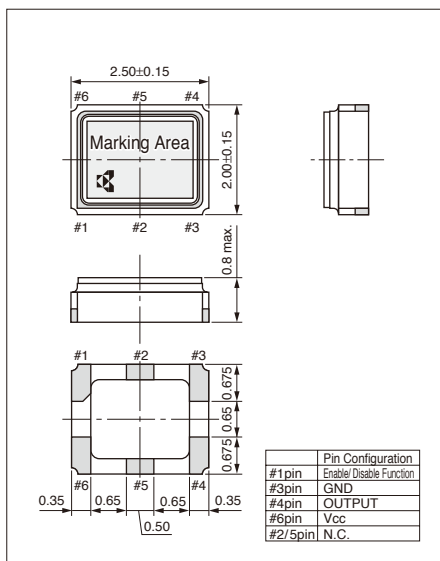
Specifications

Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	f_o	Standard Frequency: 16.368, 16.369, 19.2, 23.104, 26, 27.456, 33.6	—	—	MHz
Frequency Tolerance	f_{tol}	vs Temperature	-0.5	+0.5	$\times 10^{-6}$
		vs Load	-0.1	+0.1	
		vs Voltage	-0.2	+0.2	
Frequency Aging	f_{age}	Per Year	-1	+1	$\times 10^{-6}$
Storage Temperature Range	T_{stg}		-40	+85	$^\circ\text{C}$
Operating Temperature Range	T_{use}		-30	+85	$^\circ\text{C}$
Supply Voltage	V_{cc}		1.7	3.6	V
Output Level	V_{pp}	Clipped Sine*, Load: 10k ohm // 10pF	0.8	—	Vp-p
Current Consumption	I_{cc}		—	2	mA
Harmonics	—		—	-5	dBc

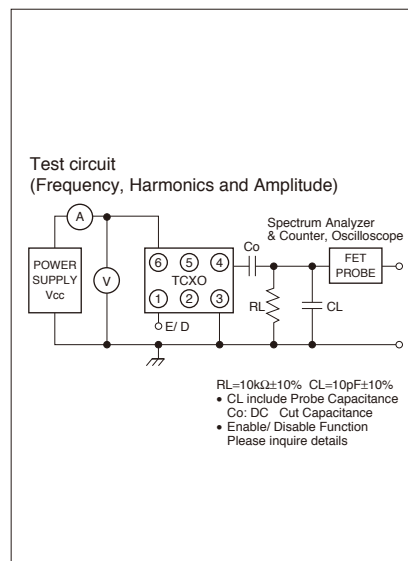
* : A DC-cut capacitor is not embedded in this crystal oscillator. Connect a DC-cut capacitor ($\geq 1\text{nF}$) to the line-out terminal of the oscillator.

Dimensions

(Unit: mm)

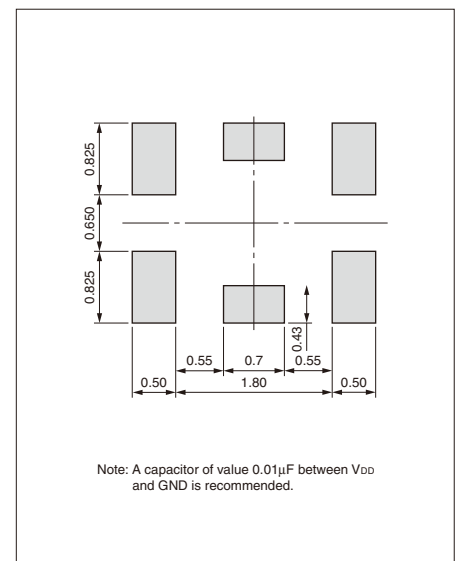


Test Circuit



Recommended Land Pattern

(Unit: mm)





RoHS Compliant

Features

- Miniature SMD type (3.2x2.5x1.0mm)
- Freq. temp. chrst. : $\pm 0.5 \times 10^{-6} / -30$ to $+85^\circ\text{C}$
- 2.3 to 3.6V drive available
- Reflow compatible

Applications

- GPS Units

How to Order

KT3225P 26000 A C W 28 T xx
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Series	⑥ Supply Voltage			
② Output Frequency	28	2.8V	30	3.0V
③ Freq. Temp. Chrst.	⑦ Voltage Control Range			
A	T TCXO			
④ Lower Operating Temp.	⑧ Option Code			
C	-30°C			
E	-20°C			
G	-10°C			
⑤ Upper Operating Temp.				
W	+85°C			
V	+80°C			
U	+75°C			

Packaging (Tape & Reel 3000 pcs./ reel)

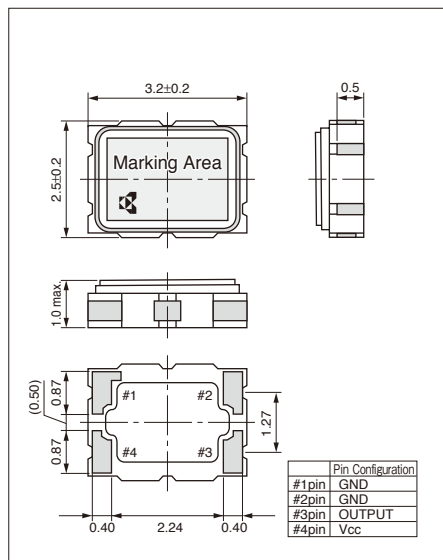
Specifications

Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	f_o	Standard Frequency: 16.368, 16.369, 19.2, 24.5535, 26, 27.456	—	—	MHz
Frequency Tolerance	f_{tol}	vs Temperature	-0.5	+0.5	$\times 10^{-6}$
		vs Load	-0.1	+0.1	
		vs Voltage	-0.2	+0.2	
Frequency Aging	f_{age}	Per Year	-1	+1	$\times 10^{-6}$
Storage Temperature Range	T_{stg}		-40	+85	°C
Operating Temperature Range	T_{use}		-30	+85	°C
Supply Voltage	V_{cc}		2.3	3.6	V
Output Level	V_{pp}	Clipped Sine*, Load: 10k ohm // 10pF	0.8	—	Vp-p
Current Consumption	I_{cc}		—	2	mA
Harmonics	—		—	-5	dBc

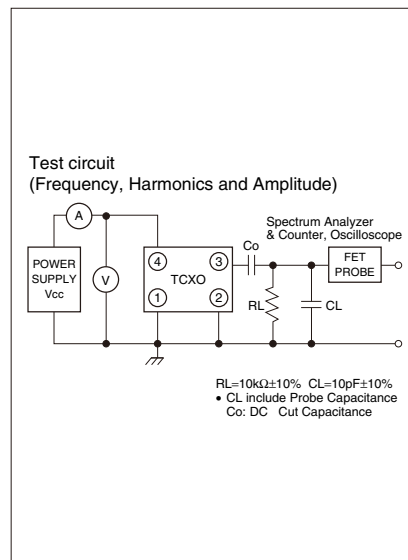
* : A DC-cut capacitor is not embedded in this crystal oscillator. Connect a DC-cut capacitor ($\geq 1\text{nF}$) to the line-out terminal of the oscillator.

Dimensions

(Unit: mm)

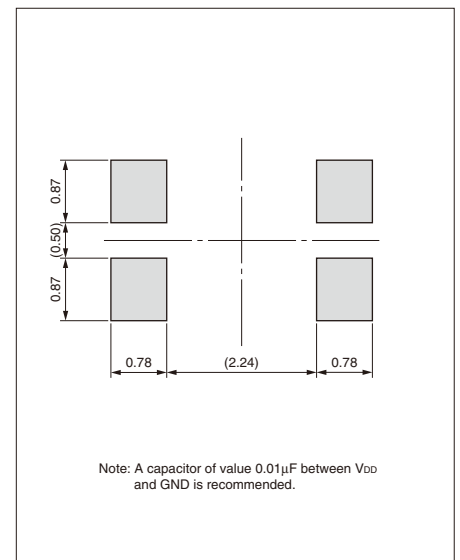


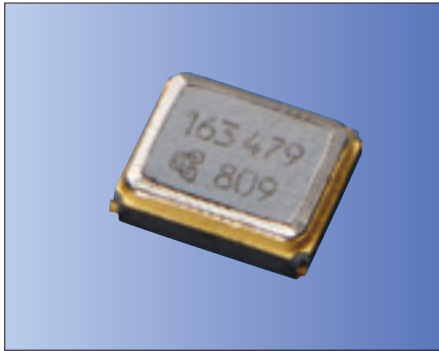
Test Circuit



Recommended Land Pattern

(Unit: mm)





RoHS Compliant

Features

- Ultra-miniature SMD type (2.0×1.6×0.8mm)
- Reflow compatible
- AFC function available
- 1.68 to 3.6V drive available
- Freq. temp. chrst. : $\pm 0.5 \times 10^{-6} / -30$ to $+85^\circ\text{C}$
- ENABLE / DISABLE function available
- Temperature sensor output

Applications

- 3G (CDMA, W-CDMA, TD-SCDMA), GPRS, GSM, Wi-Fi, WiMAX, GPS

How to Order

KT2016S 26000 D C W 28 T xx
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Series	⑤ Upper Operating Temp.
② Output Frequency	W +85°C
③ Freq. Temp. Chrst.	V +80°C
	U +75°C
A $\pm 0.5 \times 10^{-6}$	⑥ Supply Voltage
B $\pm 1.0 \times 10^{-6}$	18 1.8V 28 2.8V
C $\pm 1.5 \times 10^{-6}$	⑦ Voltage Control Range
D $\pm 2.0 \times 10^{-6}$	T TCXO
④ Lower Operating Temp.	Other* VCTCXO
C -30°C	* Customer Spec.
E -20°C	⑧ Option Code
G -10°C	

Packaging (Tape & Reel 4000 pcs./ reel)

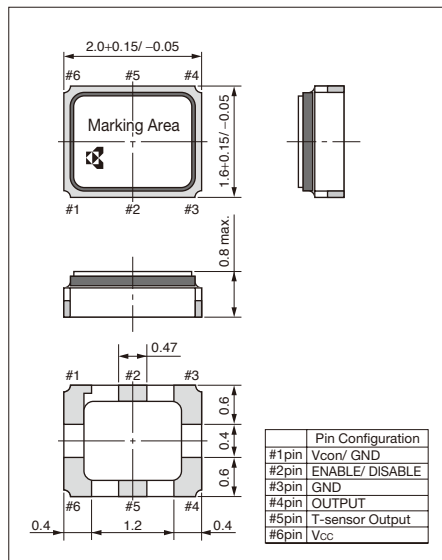
Specifications

Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	fo	Standard Frequency : 13, 19.2, 26, 38.4, 52	13	52	MHz
Frequency Tolerance	f _{tol}	vs Temperature	-2	+2	×10 ⁻⁶
		vs Load	-0.1	+0.1	
		vs Voltage	-0.2	+0.2	
Frequency Aging	f _{age}	Per Year	-1	+1	×10 ⁻⁶
Storage Temperature Range	T _{stg}		-40	+85	°C
Operating Temperature Range	T _{use}		-30	+85	°C
Voltage Control Range	f _{cont}	Positive	±8	±15	×10 ⁻⁶
Supply Voltage	V _{CC}		1.68	3.6	V
Output Level	V _{pp}	Clipped Sine*, Load: 10k ohm // 10pF, E/ D function	0.8	—	Vp-p
Current Consumption	I _{CC}		—	2	mA
Harmonics	—		—	-5	dBc
Temperature Sensor	TS	at 25°C	0.95 (Typ.)		V
		Slope	-8.7 (Typ.)		mV/ °C

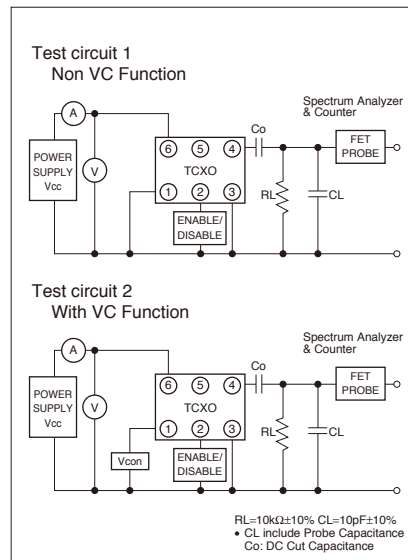
* : A DC-cut capacitor is not embedded in this crystal oscillator. Connect a DC-cut capacitor ($\geq 1\text{nF}$) to the line-out terminal of the oscillator.

Dimensions

(Unit: mm)

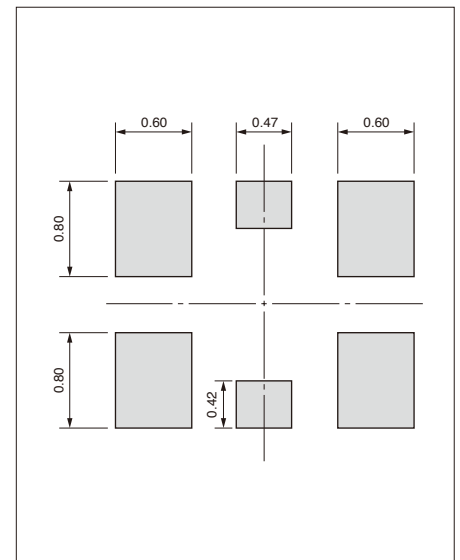


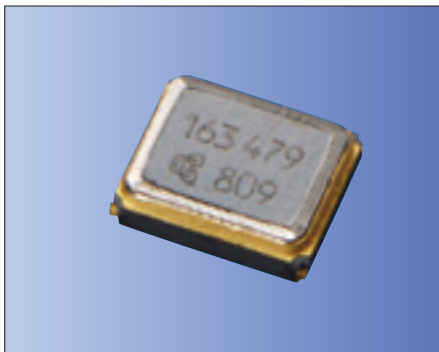
Test Circuit



Recommended Land Pattern

(Unit: mm)





RoHS Compliant

Features

- Ultra-miniature SMD type (2.0×1.6×0.8mm)
- Reflow compatible
- AFC function available
- 1.68 to 3.6V drive available
- Freq. temp. chrst. : $\pm 0.5 \times 10^{-6} / -30$ to $+85^\circ\text{C}$
- Dual Output
Output1 : Clipped Sine (ENABLE / DISABLE function available)
Output2 : Clipped Sine (ENABLE / DISABLE or AFC function available)
- Combination possibility with Normal & Divide Frequency
ex1 : Output1 : 19.2MHz / Output2 : 38.4MHz
ex2 : Output1 : 52MHz / Output2 : 26MHz

Applications

- 3G (CDMA, W-CDMA, TD-SCDMA), GPRS, GSM, Wi-Fi, WiMAX, GPS

How to Order

KT2016M 26000 D C W 28 T xx
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Series	⑤ Upper Operating Temp.
② Output Frequency	W +85°C
③ Freq. Temp. Chrst.	V +80°C
	U +75°C
A $\pm 0.5 \times 10^{-6}$	⑥ Supply Voltage
B $\pm 1.0 \times 10^{-6}$	18 1.8V 28 2.8V
C $\pm 1.5 \times 10^{-6}$	⑦ Voltage Control Range
D $\pm 2.0 \times 10^{-6}$	T TCXO
④ Lower Operating Temp.	Other* VCTCXO
C -30°C	* Customer Spec.
E -20°C	⑧ Option Code
G -10°C	

Packaging (Tape & Reel 4000 pcs./ reel)

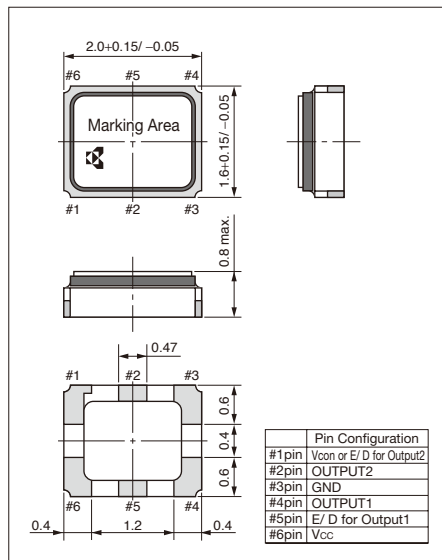
Specifications

Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	fo	Standard Frequency : 13, 19.2, 26, 38.4, 52	13	52	MHz
Frequency Tolerance	f _{tol}	vs Temperature	-2	+2	$\times 10^{-6}$
		vs Load	-0.1	+0.1	
		vs Voltage	-0.2	+0.2	
Frequency Aging	f _{age}	Per Year	-1	+1	$\times 10^{-6}$
Storage Temperature Range	T _{stg}		-40	+85	°C
Operating Temperature Range	T _{use}		-30	+85	°C
Voltage Control Range	f _{cont}	Positive	± 8	± 15	$\times 10^{-6}$
Supply Voltage	V _{CC}		1.68	3.6	V
Output Level (Output1)	V _{pp1}	Clipped Sine*, Load: 10k ohm // 10pF, E/D function	0.8	—	Vp-p
Output Level (Output2)	V _{pp2}	Clipped Sine*, Load: 10k ohm // 10pF, E/D function (Option)	0.8	—	Vp-p
Current Consumption (fo=26MHz)	I _{CC}	Output1: ENABLE	—	2	mA
		Output1: DISABLE	—	1.5	mA
Harmonics	—		—	-5	dBc

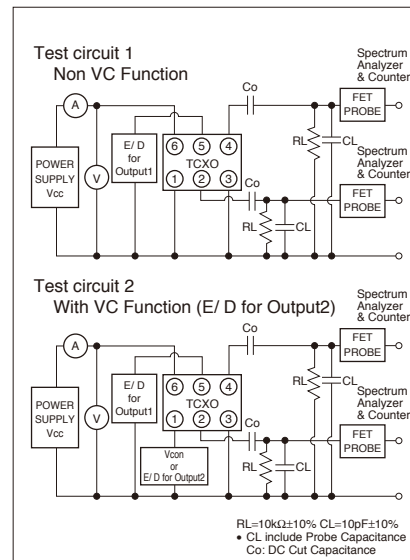
* : A DC-cut capacitor is not embedded in this crystal oscillator. Connect a DC-cut capacitor ($\geq 1\text{nF}$) to the line-out terminal of the oscillator.

Dimensions

(Unit: mm)

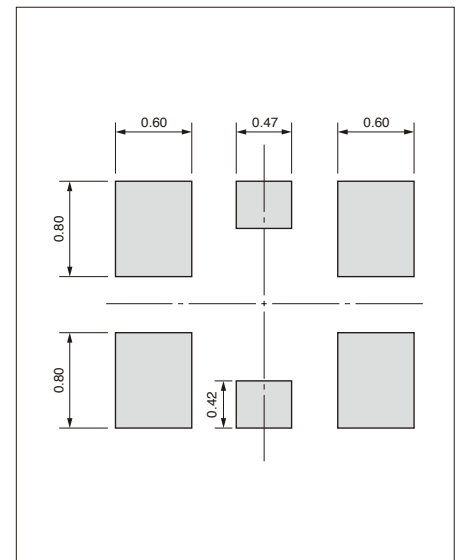


Test Circuit



Recommended Land Pattern

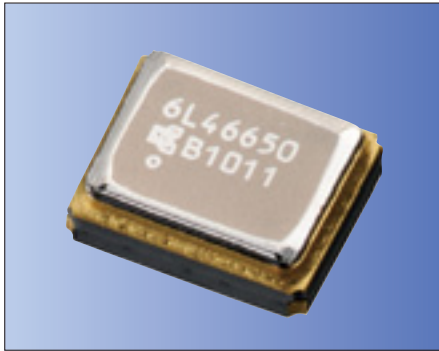
(Unit: mm)



Temperature Compensated Crystal Oscillators (Dual Output TCXO) Surface Mount Type TCXO (LSI Type) KT2520M Series



2.5×2.0mm



RoHS Compliant

Features

- Miniature SMD type (2.5×2.0×0.8mm)
- Reflow compatible
- AFC function available
- 1.68 to 3.6V drive available
- Freq. temp. chrst. : ±0.5×10⁻⁶/ -30 to +85°C
- Dual Output
Output1 : Clipped Sine / CMOS available (ENABLE / DISABLE function available)
CMOS output level is controlled by "Control for Output1"
Output2 : Clipped Sine
- Temperature sensor output

Applications

- 3G (CDMA, W-CDMA, TD-SCDMA), GPRS, GSM, Wi-Fi, WiMAX, GPS

How to Order

KT2520M 26000 D C W 28 T xx
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Series	⑤ Upper Operating Temp.
② Output Frequency	W +85°C
③ Freq. Temp. Chrst.	V +80°C
	U +75°C
A ±0.5×10 ⁻⁶	⑥ Supply Voltage
B ±1.0×10 ⁻⁶	18 1.8V 28 2.8V
C ±1.5×10 ⁻⁶	⑦ Voltage Control Range
D ±2.0×10 ⁻⁶	T TCXO
④ Lower Operating Temp.	Other* VCTCXO
C -30°C	* Customer Spec.
E -20°C	⑧ Option Code
G -10°C	

Packaging (Tape & Reel 3000 pcs./ reel)

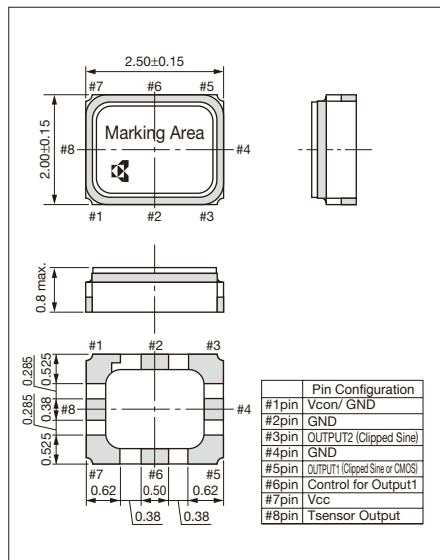
Specifications

Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	f _o	Standard Frequency : 13, 19.2, 26, 38.4, 52	13	52	MHz
Frequency Tolerance	f _{tol}	vs Temperature	-2	+2	×10 ⁻⁶
		vs Load	-0.1	+0.1	
		vs Voltage	-0.2	+0.2	
Frequency Aging	f _{age}	Per Year	-1	+1	×10 ⁻⁶
Storage Temperature Range	T _{stg}		-40	+85	°C
Operating Temperature Range	T _{use}		-30	+85	°C
Voltage Control Range	f _{cont}	Positive	±8	±15	×10 ⁻⁶
Supply Voltage	V _{cc1}		1.68	3.6	V
Buffer Supply Voltage	V _{cc2}	Control for Output1, CMOS condition	-	3.6	V
Output Level (Output1)	V _{pp1}	Clipped Sine*, Load: 10k ohm // 10pF, E/ D function	0.8	-	Vp-p
		CMOS, Load: 15pF	"0" Level	-	0.2×(V _{cc2})
			"1" Level	0.7×(V _{cc2})	-
Output Level (Output2)	V _{pp2}	Clipped Sine*, Load: 10k ohm // 10pF	0.8	-	Vp-p
Current Consumption (f _o =26MHz)	I _{cc1}	Output1: ENABLE	-	2.1	mA
		Output1: DISABLE	-	1.5	mA
		Output1: CMOS	-	2.2	mA
Harmonics	-		-	-5	dBc

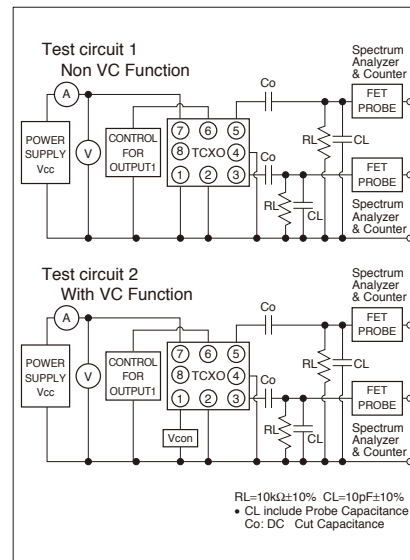
* : A DC-cut capacitor is not embedded in this crystal oscillator. In case of clipped sine output, connect a DC-cut capacitor (≥1nF) to the line-out terminal of the oscillator.

Dimensions

(Unit: mm)

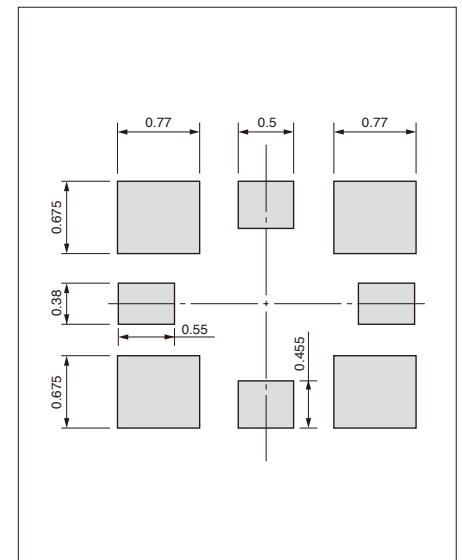


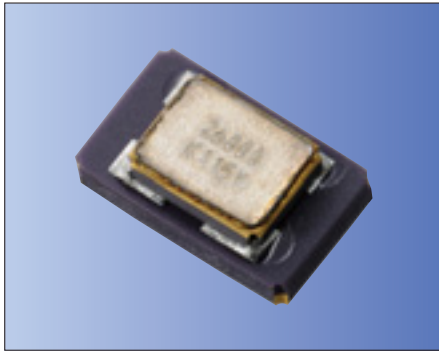
Test Circuit



Recommended Land Pattern

(Unit: mm)





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

How to Order

For Femtocell (Standard Spec.)

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

KT5032F 26000 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°C

KT5032F 26000 K A W 33 T xx
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

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

* Customer Spec.
 ⑧ Option Code

Packaging (Tape & Reel 1000 pcs./ reel)

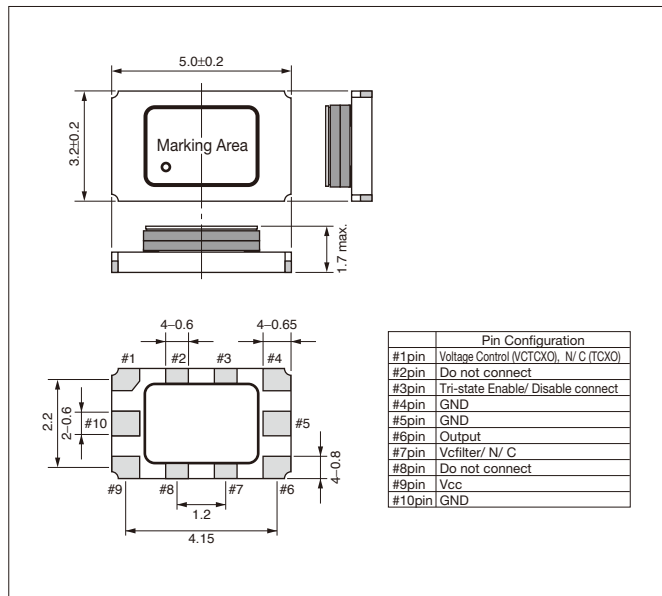
Specifications

Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	fo	Standard Frequency: 10, 12.8, 16.368, 19.2, 19.44, 20, 20.48, 26	—	—	MHz
Frequency Tolerance	f _{tol}	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 _{CC}		+2.7	+5.5	V
Current Consumption	I _{CC}	26MHz CMOS output	—	5	mA
Frequency Aging	f _{age}	20years @40°C	-4.6	+4.6	$\times 10^{-6}$
Voltage Control Range	f _{cont}	Positive *100k ohm min	± 5	± 20	$\times 10^{-6}$
Output Level	V _{pp}	Clipped Sine*, Load: 10k ohm // 10pF	0.8	—	Vp-p
Low Level Output Voltage	V _{OL}	CMOS, Load: 15pF I _{OL} =4mA	—	10% V _{CC}	V
High Level Output Voltage	V _{OH}	CMOS, Load: 15pF I _{OH} =-4mA	90% V _{CC}	—	V
Rise / Fall Time (10%V _{CC} to 90%V _{CC})	tr/ tf	CMOS, Load: 15pF	—	5	ns
Symmetry	SYM	50% V _{CC}	45	55	%
Phase Noise @26MHz	—	- 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.

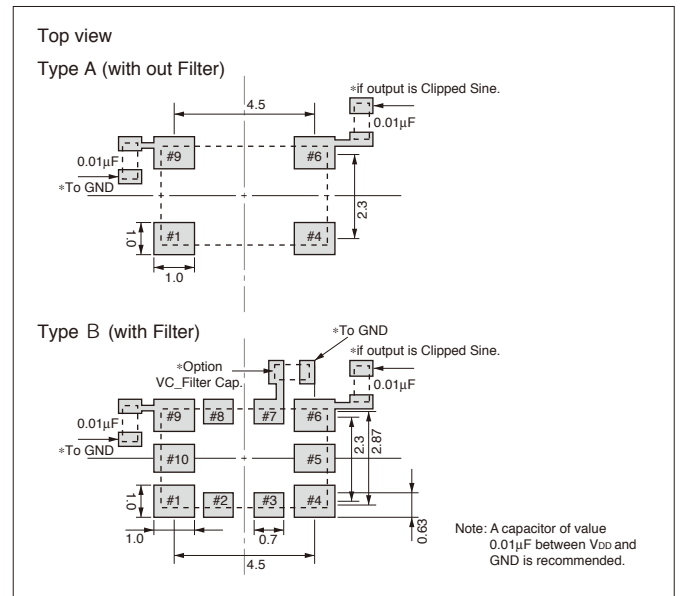
Dimensions

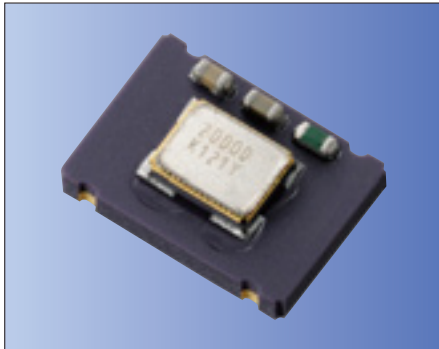
(Unit: mm)



Recommended Land Pattern

(Unit: mm)





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 (KT7050A)

Applications

- Femtocell, Stratum3

How to Order

For Femtocell (Standard Spec.)

Freq. Temp. Chrst. : $\pm 0.1 \times 10^{-6} / -10^{\circ}\text{C}$ to 70°C

KT7050 A 26000 A G T 33 T xx
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

For Stratum3 (Standard Spec.)

Freq. Temp. Chrst. : $\pm 0.28 \times 10^{-6} / -40^{\circ}\text{C}$ to 85°C

KT7050 A 26000 K A W 33 T xx
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Series	⑥ Upper Operating Temp.
② Land Type	T +70°C
A 10Pads	W +85°C
B 4Pads	⑦ Supply Voltage
③ Output Frequency	33 3.3V
④ Freq. Temp. Chrst.	⑧ Voltage Control Range
A $+0.1 \times 10^{-6}$	T TCXO
K $\pm 0.28 \times 10^{-6}$	Other* VCTCXO
⑤ Lower Operating Temp.	* Customer Spec.
A -40°C	⑨ Option Code
G -10°C	
J 0°C	

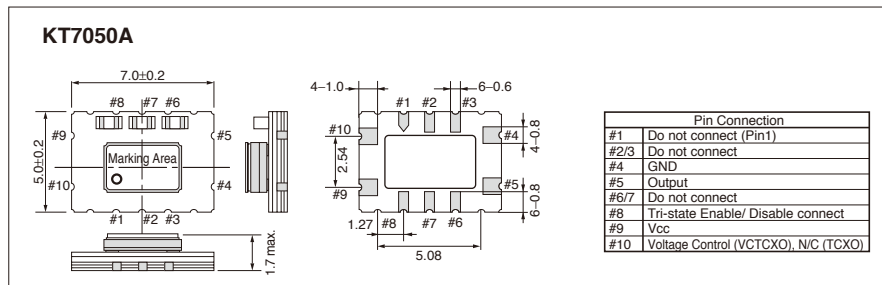
Packaging (Tape & Reel 1000 pcs./ reel)

Specifications

Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	fo	Standard Frequency: 10, 12.8, 16.368, 19.2, 19.44, 20, 20.48, 26	—	—	MHz
Frequency Tolerance	f _{tol}	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	
		vs Voltage	-0.1	+0.1	
Supply Voltage	V _{cc}		+2.7	+5.5	V
Current Consumption	I _{cc}	26MHz CMOS output	—	5	mA
Frequency Aging	f _{age}	20years @40°C	-4.6	+4.6	$\times 10^{-6}$
Voltage Control Range	f _{cont}	Positive *100k ohm min	± 5	± 20	$\times 10^{-6}$
Output Level	V _{pp}	Clipped Sine, Load: 10k ohm // 10pF	0.8	—	V _{p-p}
Low Level Output Voltage	V _{OL}	CMOS, Load: 15pF I _{OL} =4mA	—	10% V _{cc}	V
High Level Output Voltage	V _{OH}	CMOS, Load: 15pF I _{OH} =-4mA	90% V _{cc}	—	V
Rise / Fall Time (10%V _{cc} to 90%V _{cc})	tr/ tf	CMOS, Load: 15pF	—	5	ns
Symmetry	SYM	50% V _{cc}	45	55	%
Phase Noise @26MHz	—	- 90 (@10Hz offset) -120 (@100Hz offset) -140 (@1kHz offset) -150 (@10kHz offset) -150 (@100kHz offset)			dBc/ Hz

Dimensions

(Unit: mm)



Recommended Land Pattern

(Unit: mm)

