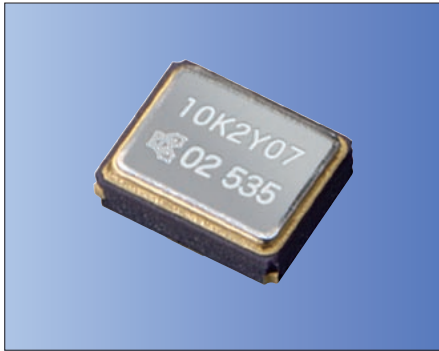


Temperature Compensated Crystal Oscillators (TCXO) Surface Mount Type TCXO (LSI Type) KT2520 Series



2.5×2.0mm



Ph Free

RoHS Compliant

Features

- Ultra-miniature SMD type (2.5×2.0×0.8mm)
- AFC function available
- Frequency stability
: ±2.0×10⁻⁶/-30 to +85°C
- 1.7 to 3.5V drive available
- Reflow compatible

Applications

- 3G (CDMA, W-CDMA), GPRS, GSM

How to Order

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

① Series

② Output Frequency

③ Frequency Tolerance

B	±1.0×10 ⁻⁶
C	±1.5×10 ⁻⁶
D	±2.0×10 ⁻⁶

④ Lower Operating Temp.

C	-30°C
E	-20°C
G	-10°C

⑤ Upper Operating Temp.

W	+85°C
V	+80°C
U	+75°C

⑥ Supply Voltage

28	2.8V	30	3.0V
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⑦ Voltage Control Range

TCXO	T
VCTCXO	Customer Spec.

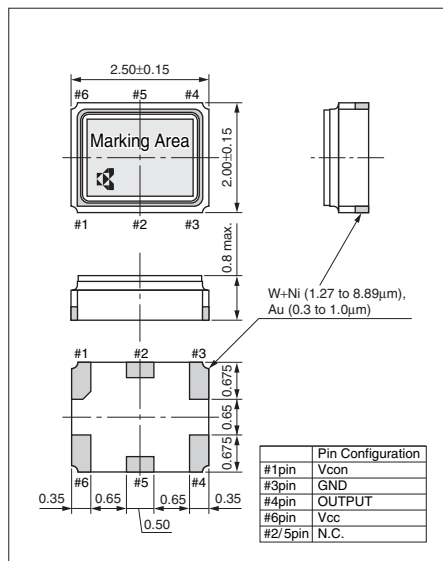
⑧ Option Code

Specifications

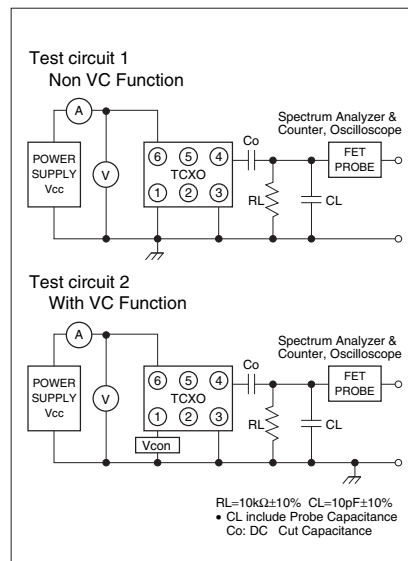
Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	f _o	Standard Frequency: 13, 19.2, 26, 38.4, 52	13	52	MHz
Frequency Tolerance	f _{tol}	vs Temperature	-2	+2	×10 ⁻⁶
		vs Load	-0.2	+0.2	
		vs Voltage	-0.3	+0.3	
Frequency Aging	f _{age}	Per Year	-1	+1	×10 ⁻⁶
Storage Temperature Range	T _{stg}		-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	3.5	V
Output Level	V _{pp}	10k ohm // 10pF	0.8	—	Vp-p
Current Consumption	I _{CC}		—	2	mA
Harmonics	—		—	-5	dBc

Dimensions

(Unit: mm)

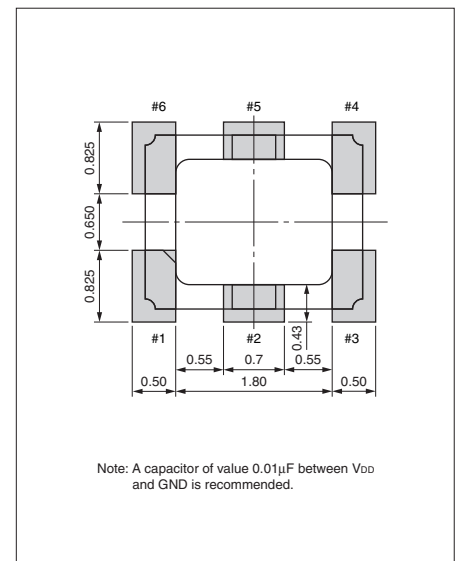


Test Circuit



Recommended Land Pattern

(Unit: mm)



Temperature Compensated Crystal Oscillators (TCXO) Surface Mount Type TCXO (LSI Type) KT2520 Series for GPS



2.5×2.0mm



Ph Free

RoHS Compliant

Features

- Ultra-miniature SMD type (2.5×2.0×0.8mm)
- Frequency stability : $\pm 0.5 \times 10^{-6} / -30$ to $+85^\circ\text{C}$
- 1.7 to 3.5V drive available
- Reflow compatible

Applications

- GPS Units

How to Order

KT2520F 16369 A C W 18 T xx
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

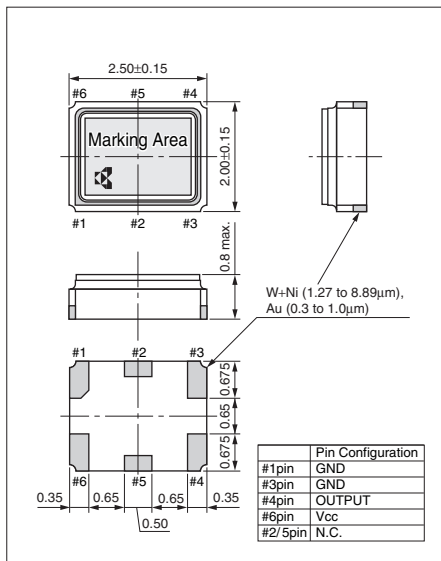
- ① Series
 - ② Output Frequency
 - ③ Frequency Tolerance
 - ④ Lower Operating Temp.
 - ⑤ Upper Operating Temp.
 - ⑥ Supply Voltage
 - ⑦ Voltage Control Range
 - ⑧ Option Code
- | | |
|---|--------------------------|
| A | $\pm 0.5 \times 10^{-6}$ |
| C | -30°C |
| E | -20°C |
| G | -10°C |
| W | +85°C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

Specifications

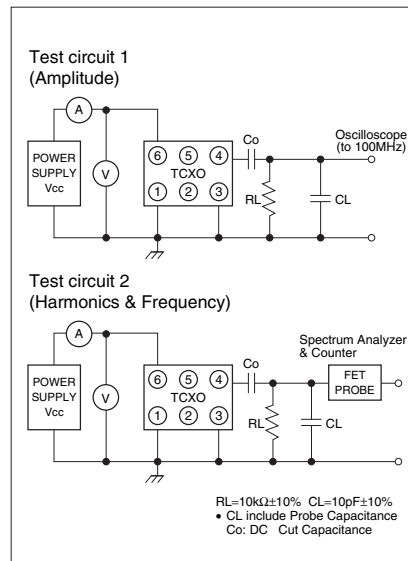
Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	f_o	Standard Frequency: 16.368, 16.369, 19.2, 23.104, 24.5535, 26, 27.456	—	—	MHz
Frequency Tolerance	f_{tol}	vs Temperature	-0.5	+0.5	$\times 10^{-6}$
		vs Load	-0.2	+0.2	
		vs Voltage	-0.3	+0.3	
Frequency Aging	f_{age}	Per Year	-1	+1	$\times 10^{-6}$
Storage Temperature Range	T_{stg}		-40	+85	°C
Operating Temperature Range	T_{use}		-30	+85	°C
Supply Voltage	V_{CC}		1.7	3.5	V
Output Level	V_{pp}	10k ohm // 10pF	0.8	—	Vp-p
Current Consumption	I_{CC}		—	2	mA
Harmonics	—		—	-5	dBc

Dimensions

(Unit: mm)

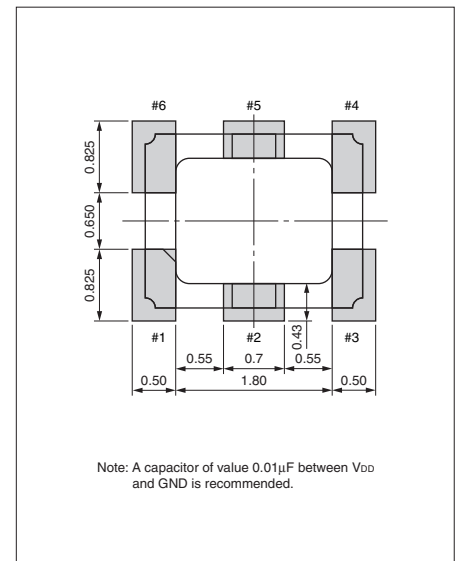


Test Circuit



Recommended Land Pattern

(Unit: mm)



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



3.2×2.5mm



Ph Free

RoHS Compliant

Features

- Ultra-miniature SMD type (3.2×2.5×1.0mm)
- Reflow compatible
- AFC function available
- 1.7 to 3.5V drive available
- Frequency stability : $\pm 2.0 \times 10^{-6} / -30$ to $+85^\circ\text{C}$

Applications

- 3G (CDMA, W-CDMA), GPRS, GSM

How to Order

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

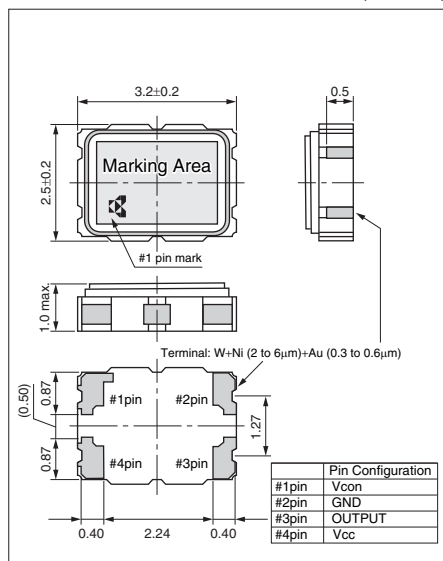
① Series	⑥ Supply Voltage
② Output Frequency	28 2.8V 30 3.0V
③ Frequency Tolerance	⑦ Voltage Control Range
B $\pm 1.0 \times 10^{-6}$	TCXO T
C $\pm 1.5 \times 10^{-6}$	VCTCXO Customer Spec.
D $\pm 2.0 \times 10^{-6}$	⑧ Option Code
④ Lower Operating Temp.	
C -30°C	
E -20°C	
G -10°C	
⑤ Upper Operating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

Specifications

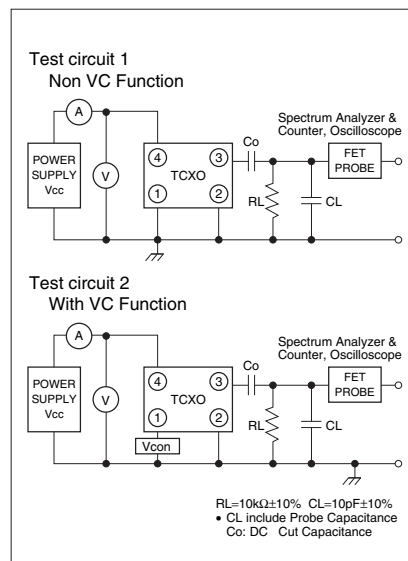
Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	f_o	Standard Frequency: 13, 19.2, 26, 38.4, 52	13	52	MHz
Frequency Tolerance	f_{tol}	vs Temperature	-2	+2	$\times 10^{-6}$
		vs Load	-0.2	+0.2	
		vs Voltage	-0.3	+0.3	
Frequency Aging	f_{age}	Per Year	-1	+1	$\times 10^{-6}$
Storage Temperature 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	3.5	V
Output Level	V_{pp}	10k ohm // 10pF	0.8	—	Vp-p
Current Consumption	I_{CC}		—	2	mA
Harmonics	—		—	-5	dBc

Dimensions

(Unit: mm)

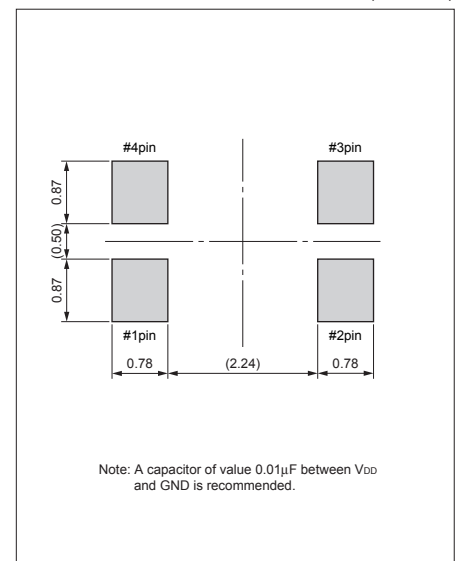


Test Circuit



Recommended Land Pattern

(Unit: mm)



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



3.2×2.5mm



Ph Free

RoHS Compliant

Features

- Ultra-miniature SMD type (3.2×2.5×1.0mm)
- Frequency stability : $\pm 0.5 \times 10^{-6} / -30$ to $+85^\circ\text{C}$
- 1.7 to 3.5V drive available
- Reflow compatible

Applications

- GPS Units

How to Order

KT3225F 16369 A C W 18 T xx
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

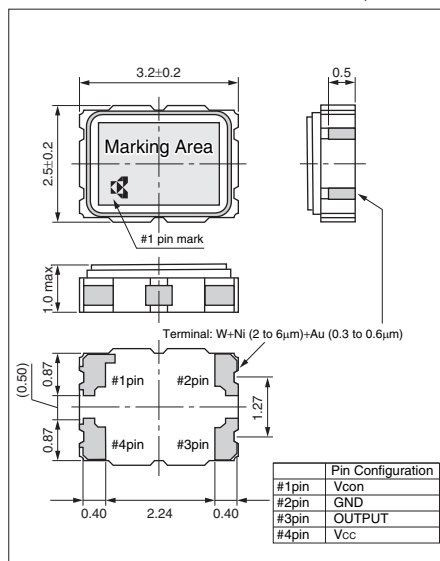
- ① Series
 - ② Output Frequency
 - ③ Frequency Tolerance
 - ④ Lower Operating Temp.
 - ⑤ Upper Operating Temp.
 - ⑥ Supply Voltage
 - ⑦ Voltage Control Range
 - ⑧ Option Code
- | | |
|---|--------------------------|
| A | $\pm 0.5 \times 10^{-6}$ |
| C | -30°C |
| E | -20°C |
| G | -10°C |
| W | +85°C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

Specifications

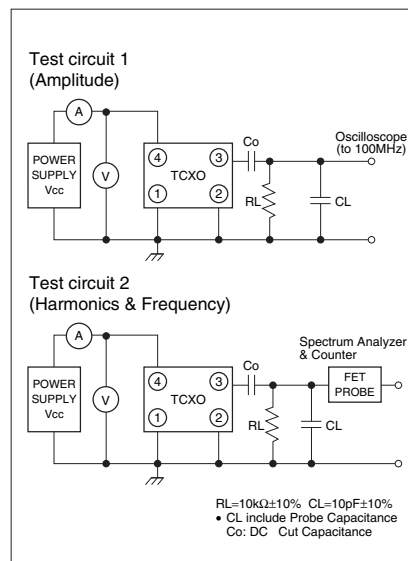
Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	f _o	Standard Frequency: 16.368, 16.369, 19.2, 23.104, 24.5535, 26, 27.456	—	—	MHz
Frequency Tolerance	f _{tol}	vs Temperature	-0.5	+0.5	×10 ⁻⁶
		vs Load	-0.2	+0.2	
		vs Voltage	-0.3	+0.3	
Frequency Aging	f _{age}	Per Year	-1	+1	×10 ⁻⁶
Storage Temperature Range	T _{stg}		-40	+85	°C
Operating Temperature Range	T _{use}		-30	+85	°C
Supply Voltage	V _{CC}		1.7	3.5	V
Output Level	V _{pp}	10k ohm // 10pF	0.8	—	Vp-p
Current Consumption	I _{CC}		—	2	mA
Harmonics	—		—	-5	dBc

Dimensions

(Unit: mm)

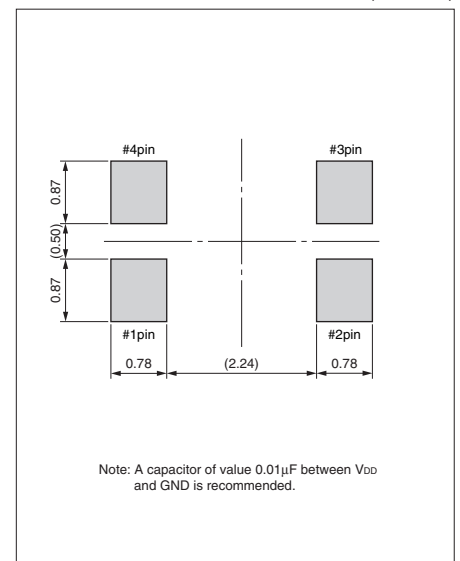


Test Circuit



Recommended Land Pattern

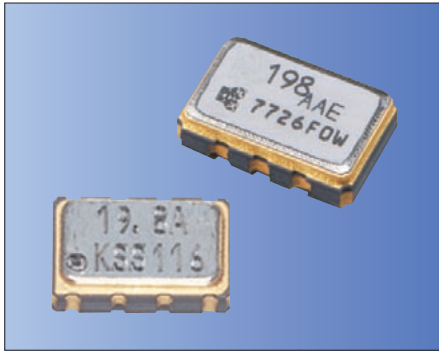
(Unit: mm)



Temperature Compensated Crystal Oscillators (TCXO) Surface Mount Type TCXO (LSI Type) KT5032 Series



5.0×3.2mm



Ph Free

RoHS Compliant

Features

- Ultra-miniature SMD type (5.0×3.2×1.5mm)
- Reflow compatible
- AFC function available
- 2.3 to 5.5V drive available
- Frequency stability : ±2.0×10⁻⁶/-30 to +85°C

Applications

- PDC, GSM, CDMA

How to Order

KT5032N 26000 D C W 28 T xx
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

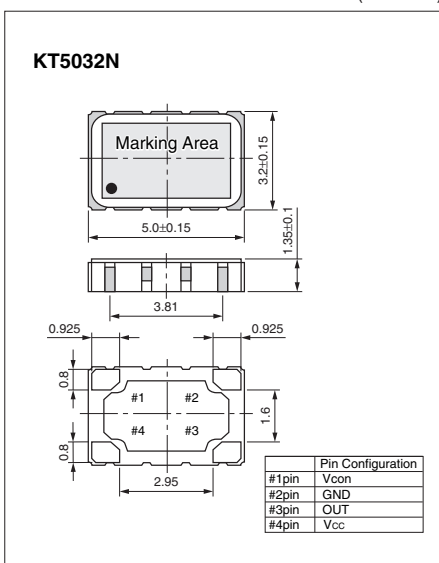
- ① Series
② Output Frequency
③ Frequency Tolerance
- | | |
|---|-----------------------|
| B | ±1.0×10 ⁻⁶ |
| C | ±1.5×10 ⁻⁶ |
| D | ±2.0×10 ⁻⁶ |
- ④ Lower Operating Temp.
- | | |
|---|-------|
| C | -30°C |
| E | -20°C |
| G | -10°C |
- ⑤ Upper Operating Temp.
- | | |
|---|-------|
| W | +85°C |
|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

Specifications

Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	f _o	Standard Frequency: 13, 19.2, 26, 38.4	13	40	MHz
Frequency Tolerance	f _{tol}	vs Temperature	-2	+2	×10 ⁻⁶
		vs Load	-0.2	+0.2	
		vs Voltage	-0.3	+0.3	
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}		2.3	5.5	V
Output Level	V _{pp}	10k ohm // 10pF	0.8	—	Vp-p
Current Consumption	I _{CC}		—	2	mA
Harmonics	—		—	-5	dBc

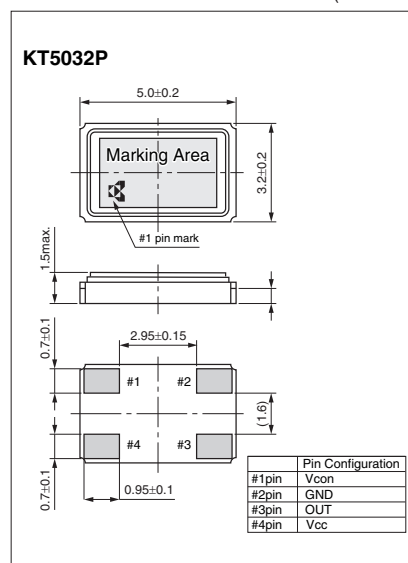
Dimensions

(Unit: mm)



Dimensions

(Unit: mm)



Recommended Land Pattern

(Unit: mm)

