

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
: $\pm 2.0 \times 10^{-6}$ / -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	$\pm 1.0 \times 10^{-6}$
C	$\pm 1.5 \times 10^{-6}$
D	$\pm 2.0 \times 10^{-6}$

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.

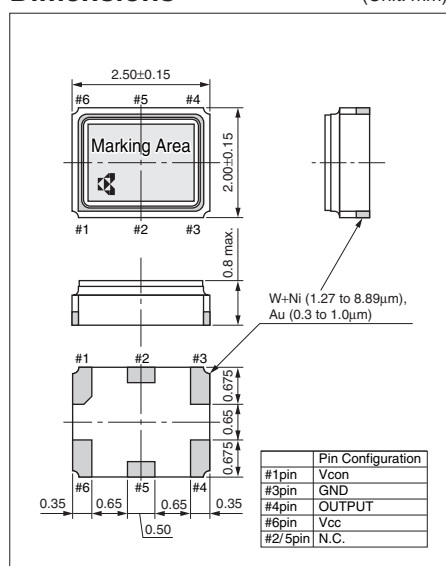
⑧ Option Code

Specifications

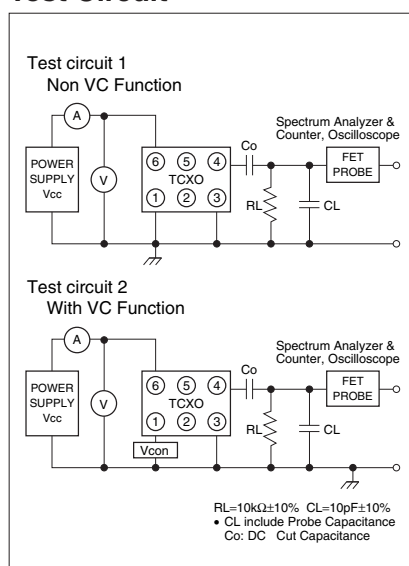
Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	f _o	Standard Frequency: 13, 19.2, 26, 38.4, 52	13	52	MHz
Frequency Tolerance	f _{tol}	vs Temperature	-2	+2	$\times 10^{-6}$
		vs Load	-0.2	+0.2	
		vs Voltage	-0.3	+0.3	
Frequency Aging	f _{age}	Per Year	-1	+1	$\times 10^{-6}$
Storage Temperature Range	T _{stg}		-40	+85	°C
Operating Temperature Range	T _{use}		-30	+85	°C
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)

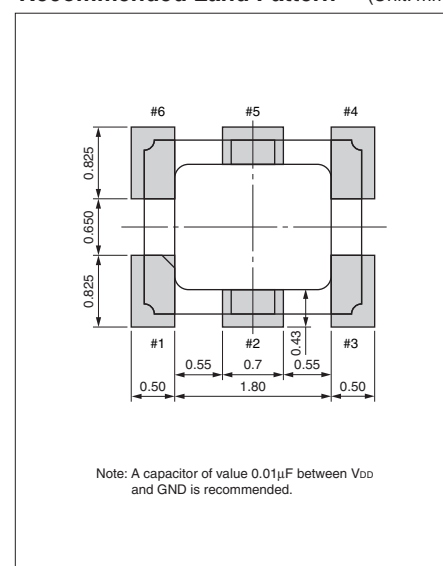


Test Circuit



Recommended Land Pattern

(Unit: mm)



Temperature Compensated Crystal Oscillators (TCXO) Surface Mount Type TCXO (LSI Type) 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°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

A $\pm 0.5 \times 10^{-6}$

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

18 1.8V 28 2.8V

⑦ Voltage Control Range

TCXO T

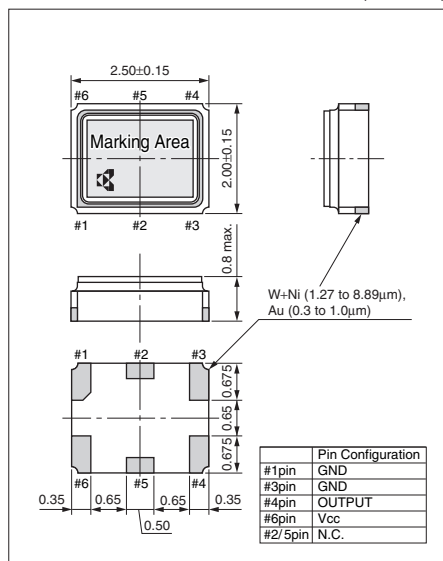
⑧ Option Code

Specifications

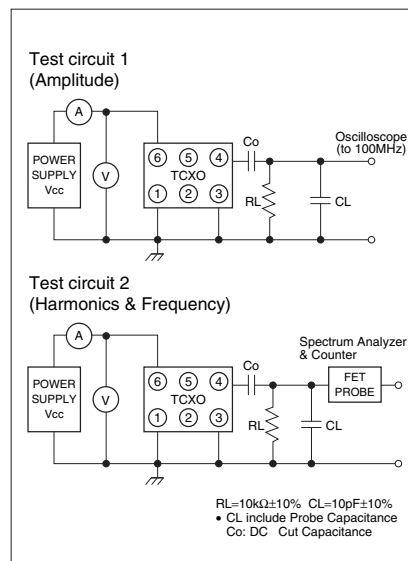
Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	f _o	Standard Frequency: 16.368, 16.369, 19.2, 23.104, 24.5535, 26, 27.456	—	—	MHz
Frequency Tolerance	f _{tol}	vs Temperature	-0.5	+0.5	$\times 10^{-6}$
		vs Load	-0.2	+0.2	
		vs Voltage	-0.3	+0.3	
Frequency Aging	f _{age}	Per Year	-1	+1	$\times 10^{-6}$
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)

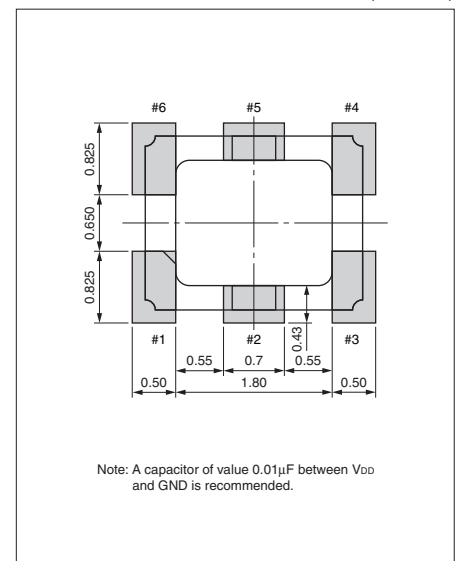


Test Circuit



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°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

② Output Frequency

③ Frequency Tolerance

B	$\pm 1.0 \times 10^{-6}$
C	$\pm 1.5 \times 10^{-6}$
D	$\pm 2.0 \times 10^{-6}$

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.

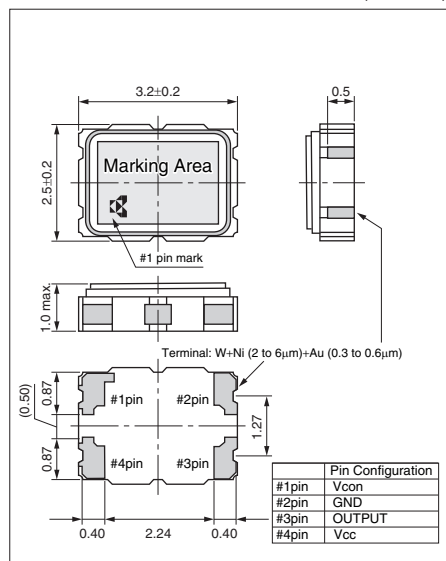
⑧ Option Code

Specifications

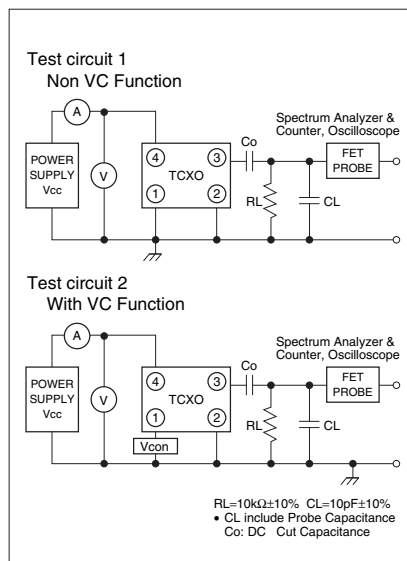
Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	f _o	Standard Frequency: 13, 19.2, 26, 38.4, 52	13	52	MHz
Frequency Tolerance	f _{tol}	vs Temperature	-2	+2	$\times 10^{-6}$
		vs Load	-0.2	+0.2	
		vs Voltage	-0.3	+0.3	
Frequency Aging	f _{age}	Per Year	-1	+1	$\times 10^{-6}$
Storage Temperature Range	T _{stg}		-40	+85	°C
Operating Temperature Range	T _{use}		-30	+85	°C
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)

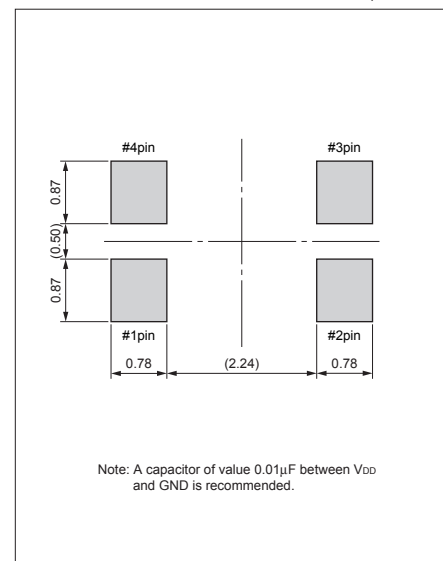


Test Circuit



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°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

A $\pm 0.5 \times 10^{-6}$

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

18 1.8V 28 2.8V

⑦ Voltage Control Range

TCXO T

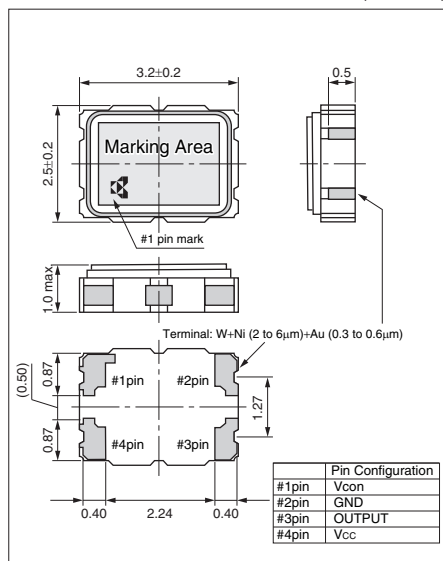
⑧ Option Code

Specifications

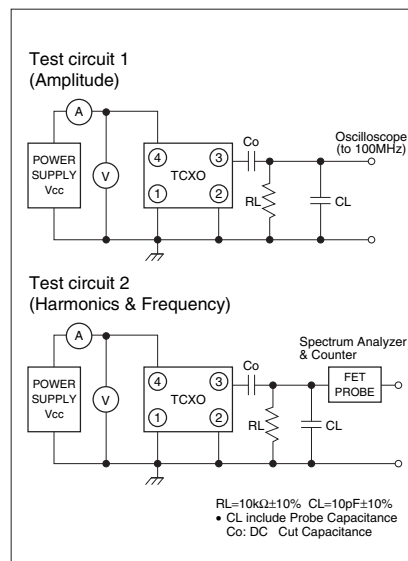
Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	f _o	Standard Frequency: 16.368, 16.369, 19.2, 23.104, 24.5535, 26, 27.456	—	—	MHz
Frequency Tolerance	f _{tol}	vs Temperature	-0.5	+0.5	$\times 10^{-6}$
		vs Load	-0.2	+0.2	
		vs Voltage	-0.3	+0.3	
Frequency Aging	f _{age}	Per Year	-1	+1	$\times 10^{-6}$
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)

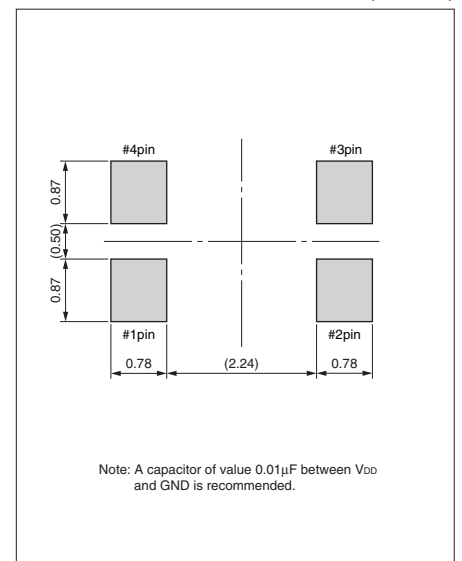


Test Circuit



Recommended Land Pattern

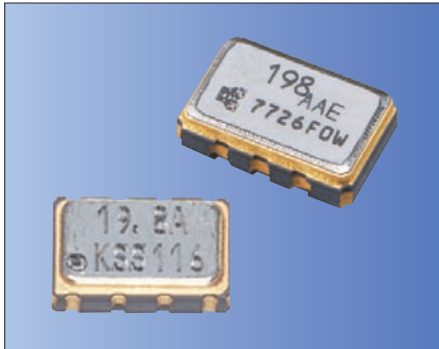
(Unit: mm)



Temperature Compensated Crystal Oscillators (TCXO) Surface Mount Type TCXO (LSI Type) 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 : $\pm 2.0 \times 10^{-6}$ / -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	$\pm 1.0 \times 10^{-6}$
C	$\pm 1.5 \times 10^{-6}$
D	$\pm 2.0 \times 10^{-6}$

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.

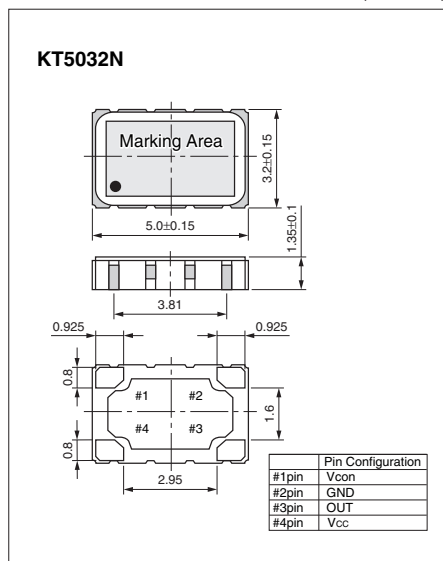
⑧ Option Code

Specifications

Item	Symbol	Conditions	Min.	Max.	Units
Output Frequency Range	f _o	Standard Frequency: 13, 19.2, 26, 38.4	13	40	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	°C
Operating Temperature Range	T _{use}		-30	+85	°C
Voltage Control Range	f _{cont}	Positive	±8	±15	$\times 10^{-6}$
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

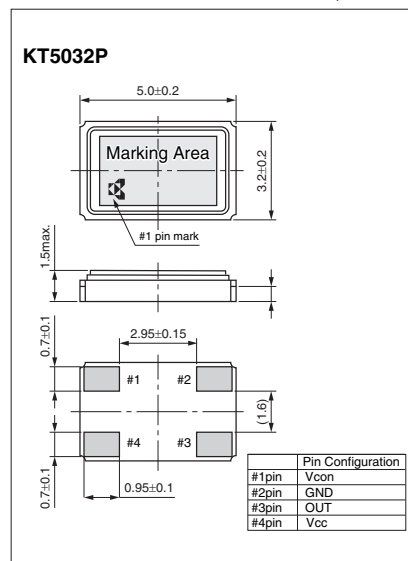
Dimensions

(Unit: mm)



Dimensions

(Unit: mm)



Recommended Land Pattern

(Unit: mm)

