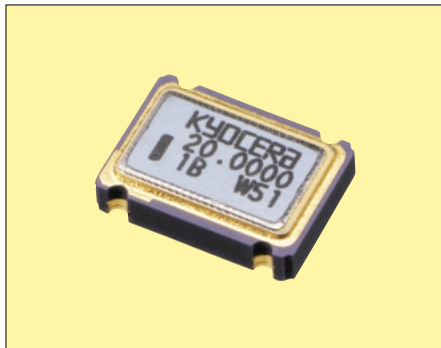
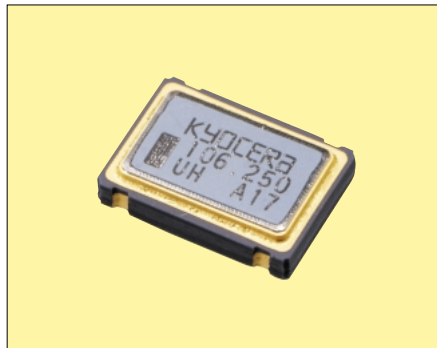


Kyocera has a wide range of clock oscillators with frequency and package size to match the various customer requirements.

## K50 Series



## K50H Series

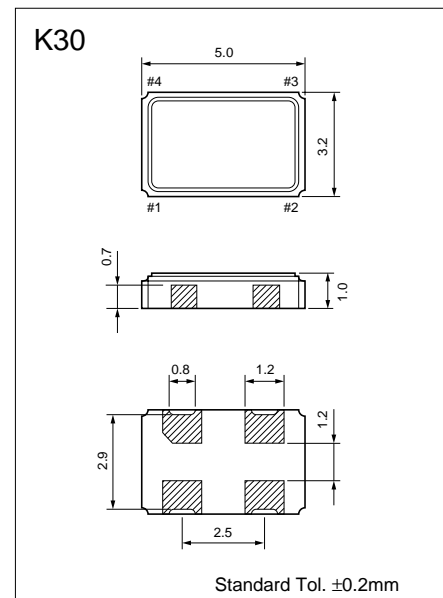
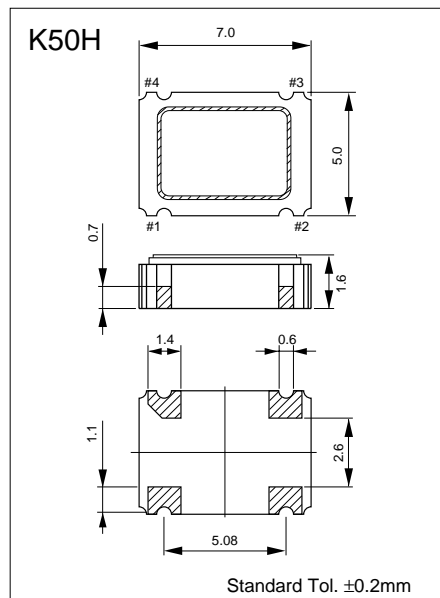
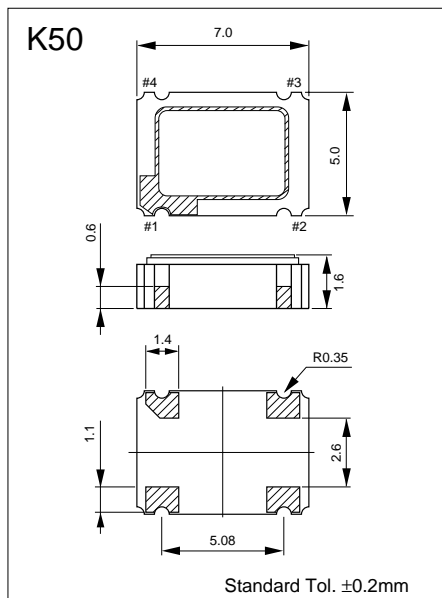


## K30 Series



## Dimensions

(Unit : mm)



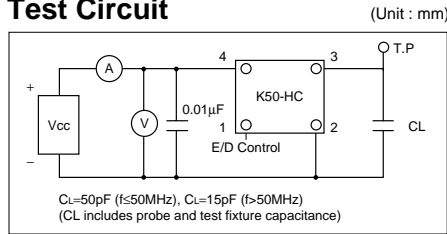
## Specifications

Type	Frequency Range (MHz)	LOAD	DRIVE LEVEL	DUTY RATIO	Features
K50-HC-C	8 to 68	$C_L=50\text{pF(max)}$ ( $f_o \leq 50\text{MHz}$ )	CMOS $V_{OH}0.9V_{CC}$ $V_{OL}0.1V_{CC}$	45/55% (0.5V <sub>CC</sub> )	<ol style="list-style-type: none"> <li>1. IR Reflowable</li> <li>2. Mini-SMD</li> <li>3. Tristate Output, Enable/Disable Function <math>F &gt; 50\text{MHz}</math> <math>C_L=15\text{pF}</math></li> </ol>
K50-3C	8 to 80	$C_L=15\text{pF(max)}$	CMOS $V_{OH}0.9V_{CC}$ $V_{OL}0.1V_{CC}$	40/60% (0.5V <sub>CC</sub> )	<ol style="list-style-type: none"> <li>1. 3.3V Available</li> <li>2. IR Reflowable</li> <li>3. Mini-SMD</li> <li>4. Tristate Output, Enable/Disable Function</li> </ol>
K50H-3C	50 to 160	$C_L=15\text{pF(max)}$	CMOS $V_{OH}0.9V_{CC}$ $V_{OL}0.1V_{CC}$	45/55% (0.5V <sub>CC</sub> )	<ol style="list-style-type: none"> <li>1. 3.3V Available</li> <li>2. IR Reflowable</li> <li>3. Mini-SMD</li> <li>4. Tristate Output, Enable/Disable Function</li> </ol>
K30-HC-C	8 to 50	$C_L=50\text{pF(max)}$ ( $f_o \leq 50\text{MHz}$ )	CMOS $V_{OH}0.9V_{CC}$ $V_{OL}0.1V_{CC}$	45/55% (0.5V <sub>CC</sub> )	<ol style="list-style-type: none"> <li>1. IR Reflowable</li> <li>2. Mini-SMD</li> <li>3. Tristate Output, Enable/Disable Function</li> </ol>
K30-3C	8 to 67	$C_L=15\text{pF(max)}$	CMOS $V_{OH}0.9V_{CC}$ $V_{OL}0.1V_{CC}$	40/60% (0.5V <sub>CC</sub> )	<ol style="list-style-type: none"> <li>1. 3.3V Available</li> <li>2. IR Reflowable</li> <li>3. Mini-SMD</li> <li>4. Tristate Output, Enable/Disable Function</li> </ol>

## Features

- Miniature SMD ceramic package type
- Frequency range : 8MHz–68MHz
- Frequency Tolerance : ±100ppm, ±50ppm
- Tristate output inhibit
- Supply Voltage : 5.0V

## Test Circuit



## How to Order

**K50 - HC 1 - C S E 40.0000M R**  
 ① ② ③ ④ ⑤ ⑥ ⑦

- ① Series  
**1** ±100ppm **0** ±50ppm
- ② Tolerance
- ③ Out put  
**C** CMOS
- ④ Duty ratio  
**S** 45% to 55%(STD)
- ⑤ Taistate Output  
**E** with function(STD)

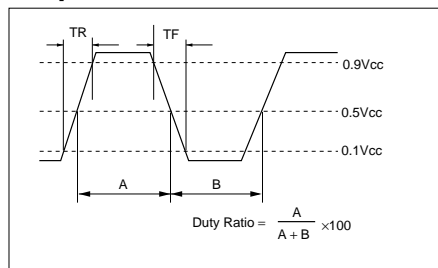
- ⑥ Frequency(MHz)
- |          |         |         |
|----------|---------|---------|
| 8.0000   | 27.0000 | 49.1520 |
| 14.31818 | 29.4989 | 50.0000 |
| 16.0000  | 30.0000 | 60.0000 |
| 20.0000  | 32.0000 | 64.0000 |
| 24.0000  | 33.8688 | 66.6667 |
| 24.5760  | 40.0000 | —       |
| 25.0000  | 48.0000 | —       |
- ⑦ Packaging  
**R** Tape and Reel(1000pcs/Reel)

## Specifications

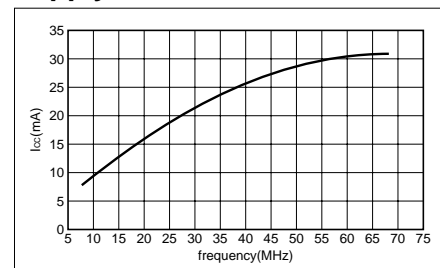
Items	Code	Rating	Unit	Remarks
Output Frequency	F <sub>OUT</sub>	8 to 68	MHz	—
Frequency Tolerance	ΔF/F	±100, ±50	ppm	Over all conditions : initial tolerance, operating temperature, rated power supply voltage, load change, aging (1year @ 25°C), shock and vibration
Operating Temp.	T <sub>OPR</sub>	-10 to 70	°C	—
Storage Temp.	T <sub>STR</sub>	-55 to 125	°C	—
Supply Voltage	V <sub>CC</sub>	5±0.5	V	—
Supply Current	I <sub>CC</sub>	50max	mA	Loaded @68MHz
Disable Current	I <sub>DE</sub>	30max	mA	—
Duty Ratio	SYM	45 to 55	%	0.5V <sub>CC</sub> DC Level
Output 0 Level	V <sub>OL</sub>	0.1V <sub>CC</sub> max	V	I <sub>OL</sub> =16mA
Output 1 Level	V <sub>OH</sub>	0.9V <sub>CC</sub> min	V	I <sub>OH</sub> =-16mA
Rise/Fall Time	T <sub>R</sub> , T <sub>F</sub>	10max	nsec	0.1V <sub>CC</sub> -0.9V <sub>CC</sub>
Load Capacitance	C <sub>L</sub>	50max	pF	F>50MHz C <sub>L</sub> =15pF(max)
Enable/Disable Time	—	100max	nsec	—
Input Voltage Low	V <sub>IL</sub>	0.8max	V	—
Input Voltage High	V <sub>IH</sub>	2.2min	V	—
Start-up Time	ST	10max	mS	Minimum Operating Voltage to be 0sec

• Please contact us for inquire about Extend Operating Temperature Range(-40 to +85°C), available frequencies, other condition.

## Output Wave Form



## Supply Current Characteristic



## Pin Connection

Pin#	Function
1	CONTROL
2	CASE GND
3	OUT PUT
4	+V <sub>CC</sub>

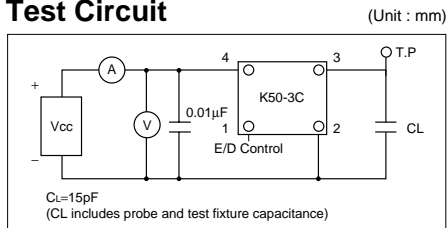
## Enable/Disable

Pin#1	Pin#3
“H” or open	Oscillation
“L”	High impedance

## Features

- Miniature SMD ceramic package type
- Frequency range : 8MHz to 80MHz
- Frequency Tolerance : ±100ppm, ±50ppm
- Tristate output inhibit
- Supply voltage : 3.3V
- Load capacitance 15pF

## Test Circuit



## How to Order

**K50 - 3C 1 - S E 40.0000M R**

① ② ③ ④ ⑤ ⑥

① Series

② Tolerance

<b>1</b>	±100ppm	<b>0</b>	±50ppm
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③ Duty Ratio

<b>S</b>	45% to 55%(f≥20MHz)
<b>NIL</b>	40% to 60%(STD)

④ Enable/Disable function

<b>E</b>	with function(STD)
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⑤ Frequency (MHz)

8.00000	27.0000	48.0000
13.0000	29.4989	49.1520
14.31818	30.0000	50.0000
16.0000	32.0000	53.1250
20.0000	33.8688	64.0000
24.0000	35.3280	66.6667
24.5760	40.0000	80.0000
25.0000	44.0000	—

⑥ Packaging

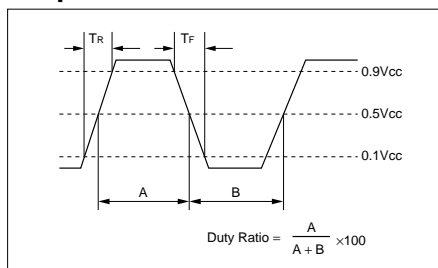
<b>R</b>	Tape and Reel(1000pcs/Reel)
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## Specifications

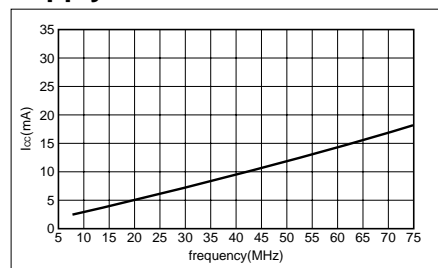
Items	Code	Rating	Unit	Remarks
Output Frequency	F <sub>OUT</sub>	8 to 80	MHz	—
Frequency Tolerance	ΔF/F	±100, ±50	ppm	Over all conditions : initial tolerance, operating temperature, rated power supply voltage, load change, aging (1year @ 25°C), shock and vibration
Operating Temp.	T <sub>OPR</sub>	-10 to 70	°C	—
Storage Temp.	T <sub>STR</sub>	-55 to 125	°C	—
Supply Voltage	V <sub>CC</sub>	3.3±0.3	V	—
Supply Current	I <sub>CC</sub>	25max	mA	Loaded @80MHz
Disable/Stand by Current	I <sub>DE</sub> /I <sub>ST</sub>	10max	µA	8≤F≤32MHz
		15max	mA	32<F≤50MHz
		10max	µA	50<F≤80MHz
Duty Ratio	SYM	40 to 60, op. (45 to 55)	%	0.5V <sub>CC</sub> DC Level
Output 0 Level	V <sub>OL</sub>	0.1V <sub>CC</sub> max	V	I <sub>OL</sub> =8mA
Output 1 Level	V <sub>OH</sub>	0.9V <sub>CC</sub> min	V	I <sub>OH</sub> =8mA
Rise/Fall Time	T <sub>R</sub> , T <sub>F</sub>	10max	nsec	0.1V <sub>CC</sub> ~0.9V <sub>CC</sub>
Load Capacitance	C <sub>L</sub>	15max	pF	—
Enable/Disable Time	—	5max	msec	8≤F≤32MHz
		150max	nsec	32<F≤50MHz
		5max	msec	50<F≤80MHz
Input Voltage Low	V <sub>IL</sub>	0.3 V <sub>CC</sub> max	V	—
Input Voltage High	V <sub>IH</sub>	0.7 V <sub>CC</sub> min	V	—
Start-up Time	ST	10max	mS	Minimum Operating Voltage to be 0sec

• Please contact us for inquires about Extend Operating Temperature Range(-40 to +85°C), available frequencies, other condition.

## Output Wave Form



## Supply Current Characteristic



## Pin Connection

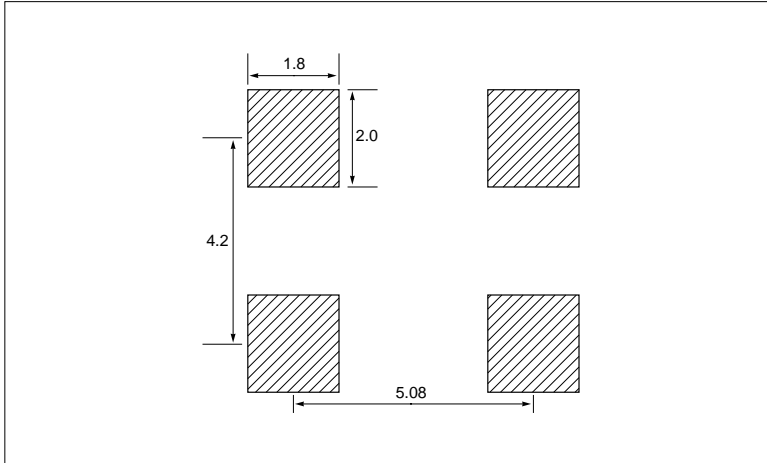
Pin#	Function
<b>1</b>	CONTROL
<b>2</b>	CASE GND
<b>3</b>	OUTPUT
<b>4</b>	+V <sub>CC</sub>

## Enable/Disable

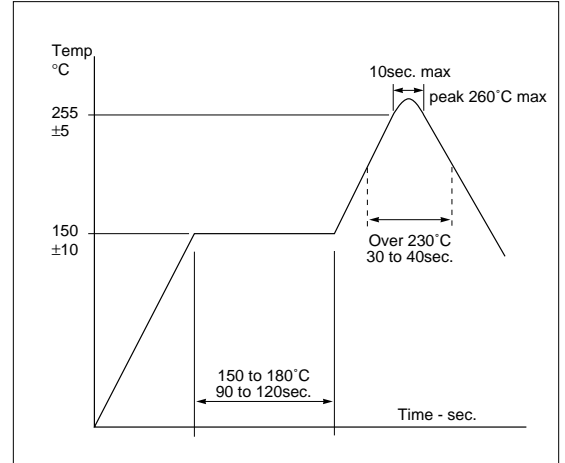
Pin#1	Pin#3
"H" or open	Oscillation
"L"	High impedance or Oscillation Stop

## Recommended Land Pattern

(Unit : mm)



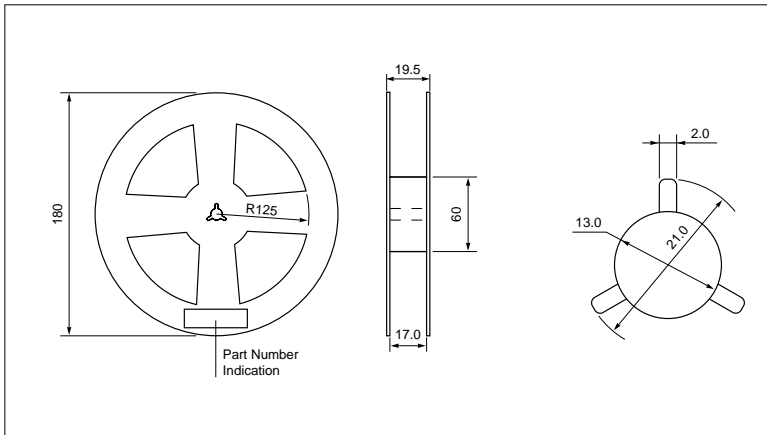
## Recommended Reflow Profile(lead free)



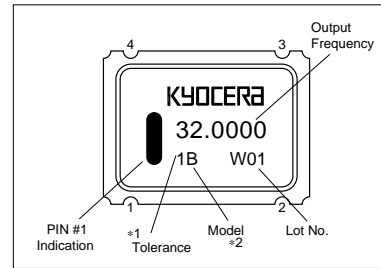
## Packaging

### • Reel

(Unit : mm)



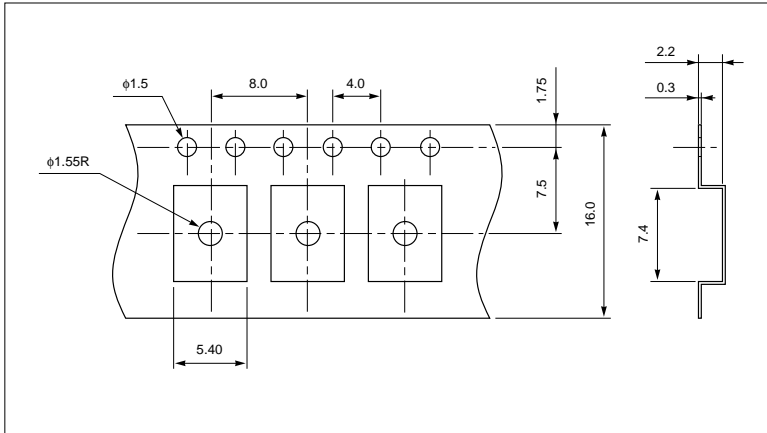
## Marking Specifications



- \*1 1 : ±100ppm
- 0 : ± 50ppm
- S : ± 30ppm
- U : ± 25ppm
- \*2 B : K50-HC
- L : K50-3C-E
- M : K50-3C-SE
- H : K50H-3C-SE

### • Carrier Tape

(Unit : mm)



## Packaging

1,000pcs/Reel