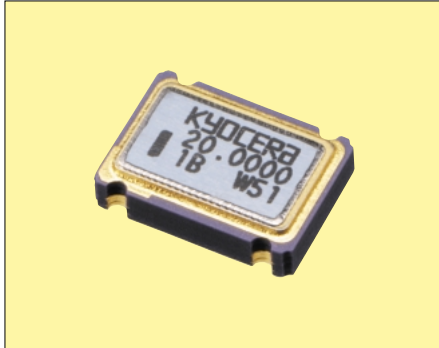
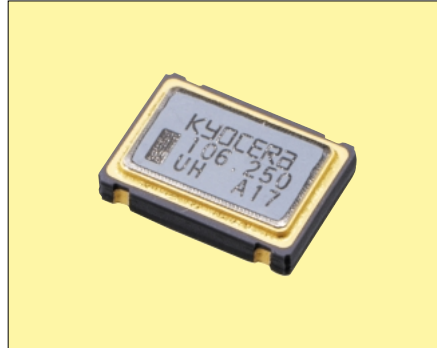


Kyocera has a wide range of clock oscillators with frequency and package size to match the various customer requirements.

K50 Series



K50H Series

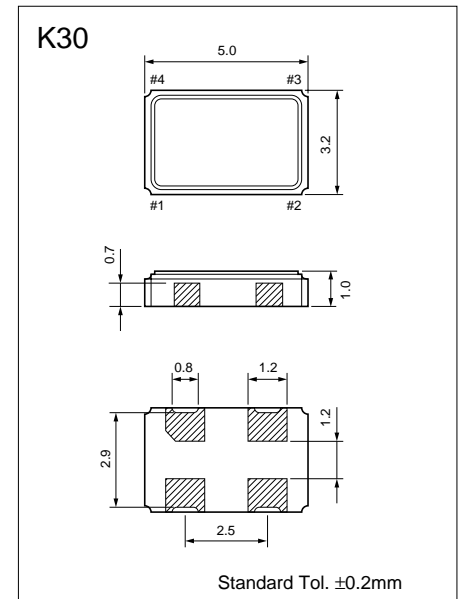
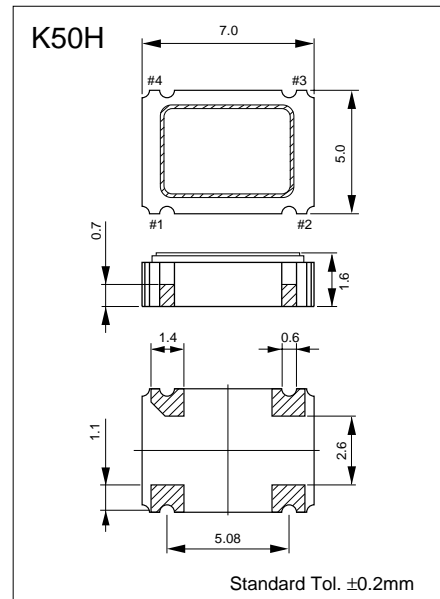
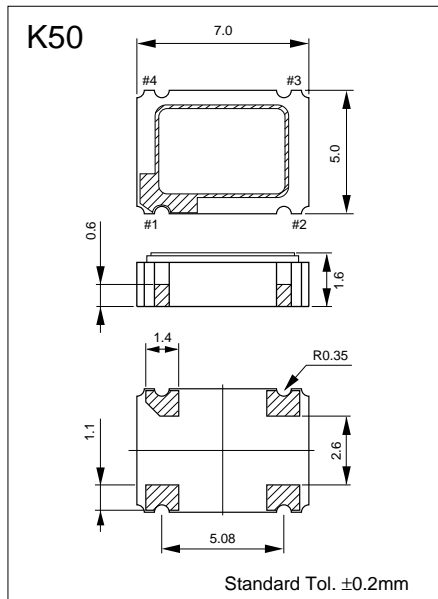


K30 Series



Dimensions

(Unit : mm)



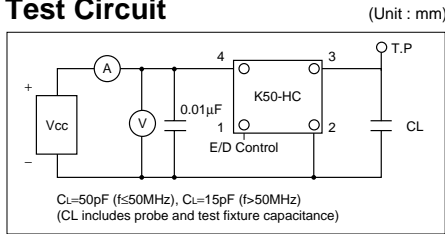
Specifications

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

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 ② ③④⑤ ⑥ ⑦

①Series

②Tolerance

| | | | |
|----------|---------|----------|--------|
| 1 | ±100ppm | 0 | ±50ppm |
|----------|---------|----------|--------|

③Out put

| | |
|----------|------|
| C | CMOS |
|----------|------|

④Duty ratio

| | |
|----------|-----------------|
| S | 45% to 55%(STD) |
|----------|-----------------|

⑤Taistate Output

| | |
|----------|--------------------|
| E | with function(STD) |
|----------|--------------------|

⑥Frequency(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 | — |

⑦Packaging

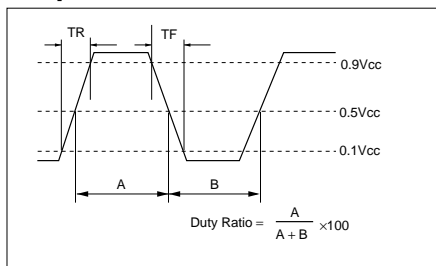
| | |
|----------|-----------------------------|
| R | Tape and Reel(1000pcs/Reel) |
|----------|-----------------------------|

Specifications

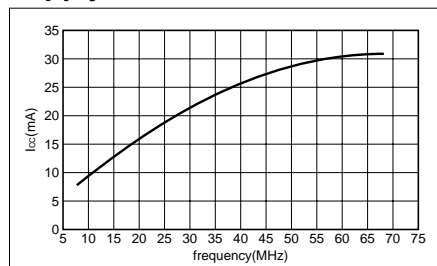
| Items | Code | Rating | Unit | Remarks |
|---------------------|---------------------------------|------------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Output Frequency | F _{OUT} | 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 _{OPR} | -10 to 70 | °C | — |
| Storage Temp. | T _{STR} | -55 to 125 | °C | — |
| Supply Voltage | V _{CC} | 5±0.5 | V | — |
| Supply Current | I _{CC} | 50max | mA | Loaded @68MHz |
| Disable Current | I _{DE} | 30max | mA | — |
| Duty Ratio | SYM | 45 to 55 | % | 0.5V _{CC} DC Level |
| Output 0 Level | V _{OL} | 0.1V _{CC} max | V | I _{OL} =16mA |
| Output 1 Level | V _{OH} | 0.9V _{CC} min | V | I _{OH} =-16mA |
| Rise/Fall Time | T _R , T _F | 10max | nsec | 0.1V _{CC} -0.9V _{CC} |
| Load Capacitance | C _L | 50max | pF | F>50MHz C _L =15pF(max) |
| Enable/Disable Time | — | 100max | nsec | — |
| Input Voltage Low | V _{IL} | 0.8max | V | — |
| Input Voltage High | V _{IH} | 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 _{CC} |

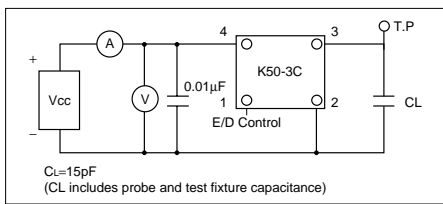
Enable/Disable

| 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

| | | | |
|----------|---------|----------|--------|
| 1 | ±100ppm | 0 | ±50ppm |
|----------|---------|----------|--------|

③ Duty Ratio

| | |
|------------|---------------------|
| S | 45% to 55%(f≥20MHz) |
| NIL | 40% to 60%(STD) |

④ Enable/Disable function

| | |
|----------|--------------------|
| E | with function(STD) |
|----------|--------------------|

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

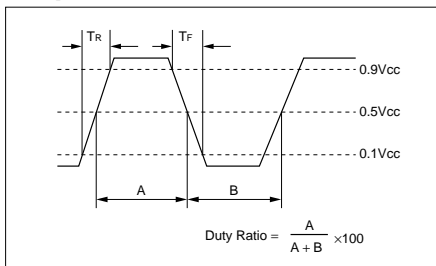
| | |
|----------|-----------------------------|
| R | Tape and Reel(1000pcs/Reel) |
|----------|-----------------------------|

Specifications

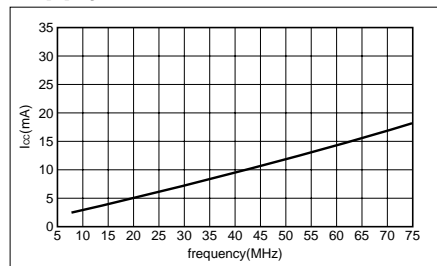
| Items | Code | Rating | Unit | Remarks |
|--------------------------|----------------------------------|--------------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Output Frequency | F _{OUT} | 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 _{OPR} | -10 to 70 | °C | — |
| Storage Temp. | T _{STR} | -55 to 125 | °C | — |
| Supply Voltage | V _{CC} | 3.3±0.3 | V | — |
| Supply Current | I _{CC} | 25max | mA | Loaded @80MHz |
| Disable/Stand by Current | I _{DE} /I _{ST} | 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 _{CC} DC Level |
| Output 0 Level | V _{OL} | 0.1V _{CC} max | V | I _{OL} =8mA |
| Output 1 Level | V _{OH} | 0.9V _{CC} min | V | I _{OH} =8mA |
| Rise/Fall Time | T _R , T _F | 10max | nsec | 0.1V _{CC} -0.9V _{CC} |
| Load Capacitance | C _L | 15max | pF | — |
| Enable/Disable Time | — | 5max | msec | 8≤F≤32MHz |
| | | 150max | nsec | 32<F≤50MHz |
| | | 5max | msec | 50<F≤80MHz |
| Input Voltage Low | V _{IL} | 0.3 V _{CC} max | V | — |
| Input Voltage High | V _{IH} | 0.7 V _{CC} 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

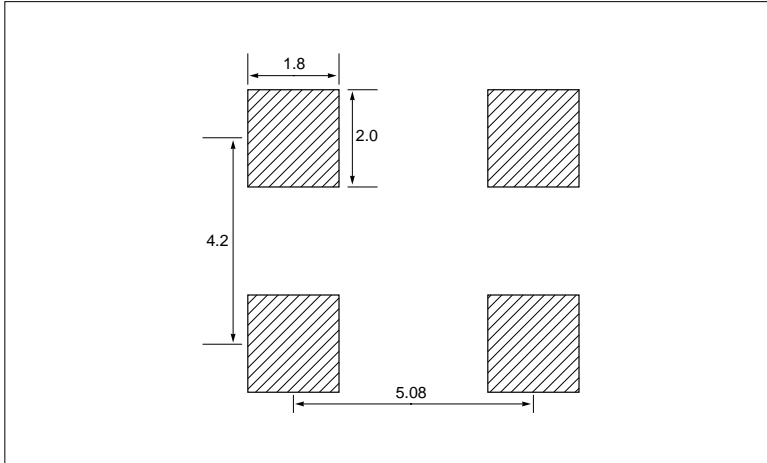
| Pin# | Function |
|----------|------------------|
| 1 | CONTROL |
| 2 | CASE GND |
| 3 | OUTPUT |
| 4 | +V _{CC} |

Enable/Disable

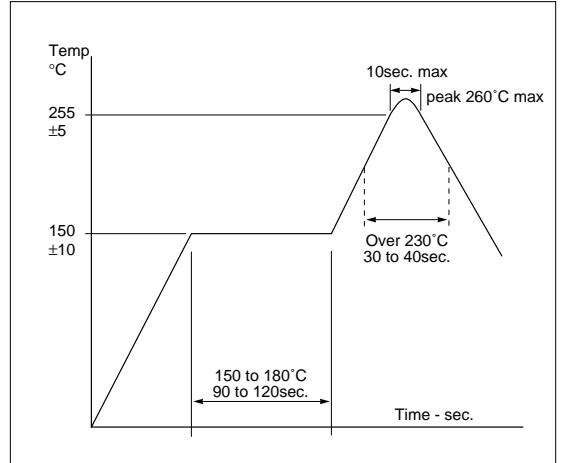
| Pin#1 | Pin#3 |
|-------------|------------------------------------|
| "H" or open | Oscillation |
| "L" | High impedance or Oscillation Stop |

Recommended Land Pattern

(Unit : mm)



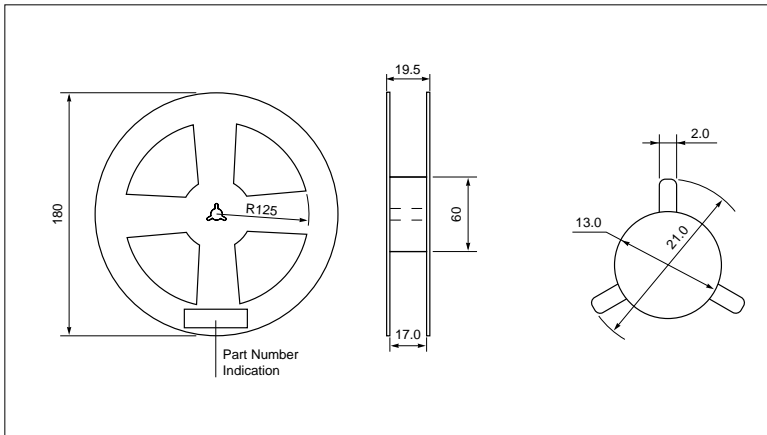
Recommended Reflow Profile(lead free)



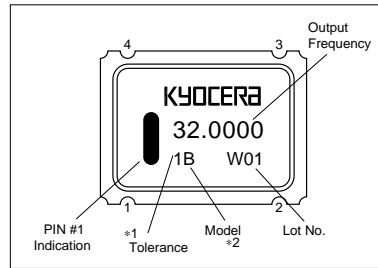
Packaging

• Reel

(Unit : mm)



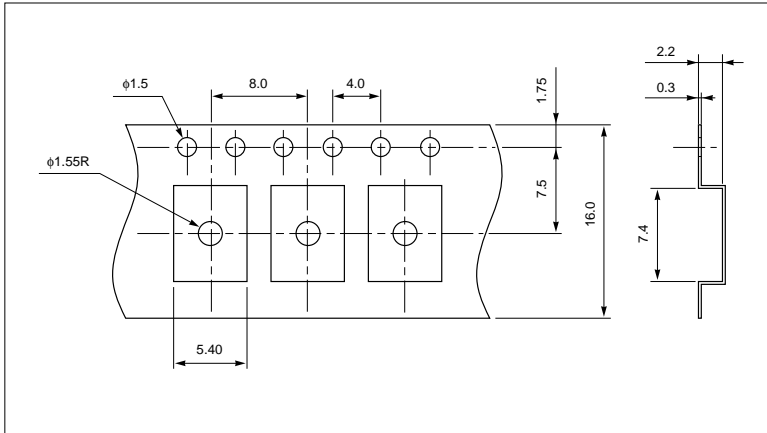
Marking Specifications



- *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