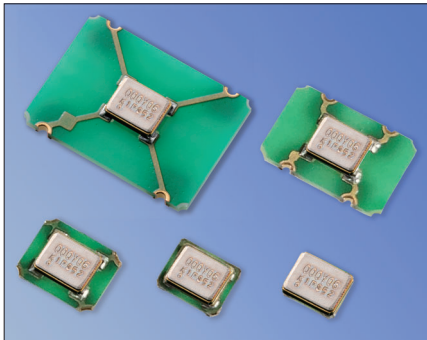




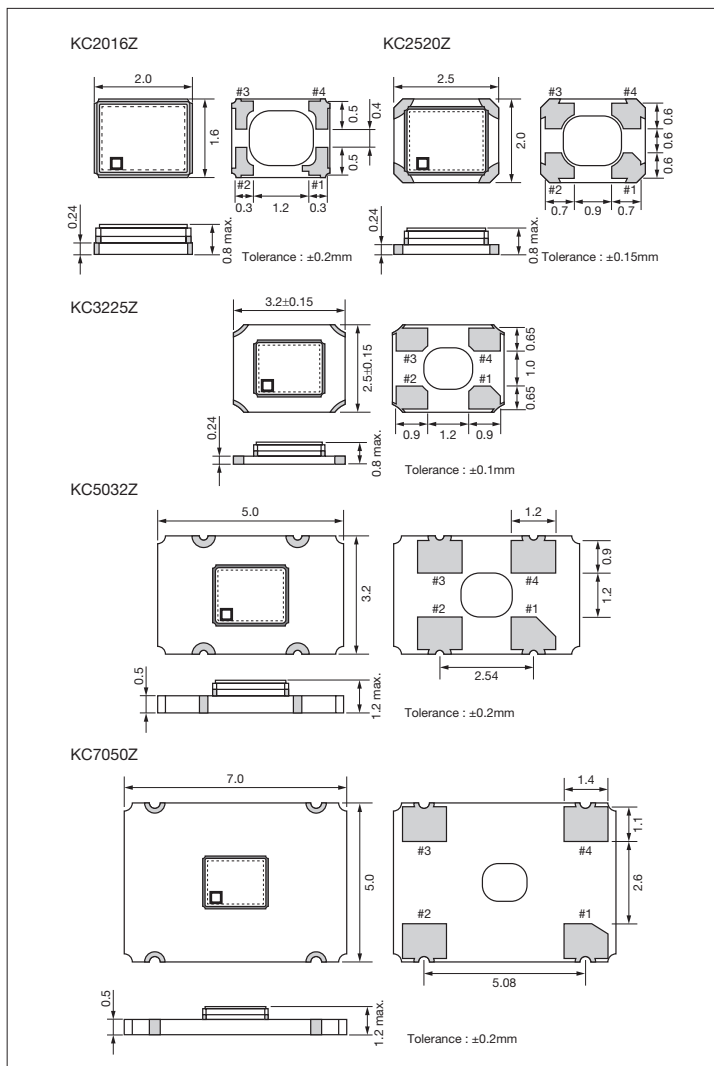
CMOS/ 1.8V, 2.5V, 3.3V/ 2.0×1.6, 2.5×2.0, 3.2×2.5, 5.0×3.2, 7.0×5.0mm



RoHS Compliant

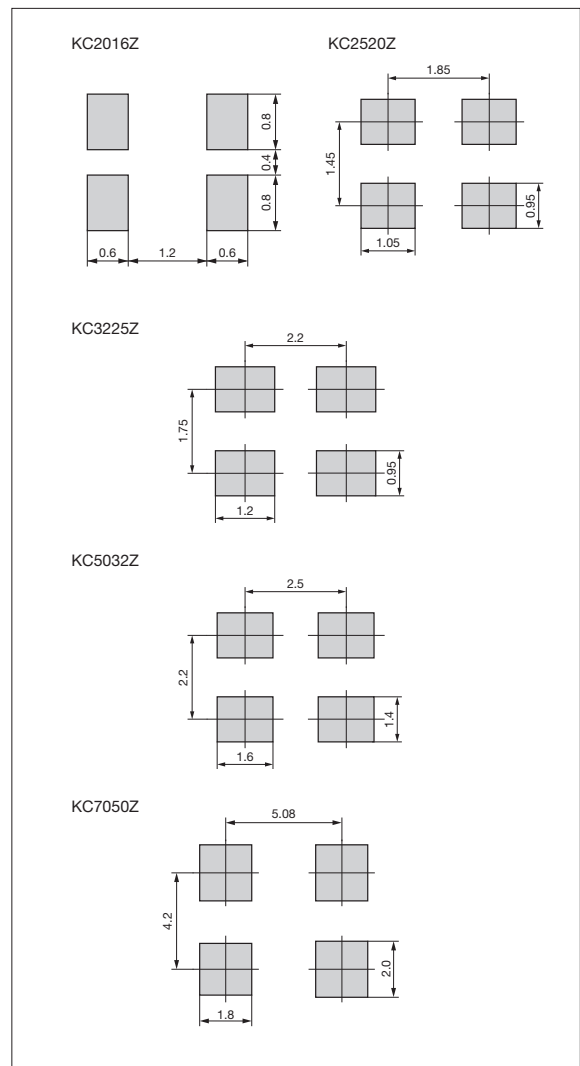
Dimensions

(Unit : mm)



Recommended Land Patterns

(Unit : mm)



| Pad Connections | |
|-----------------|----------|
| #1 | INH |
| #2 | Case GND |
| #3 | Output |
| #4 | Vcc |

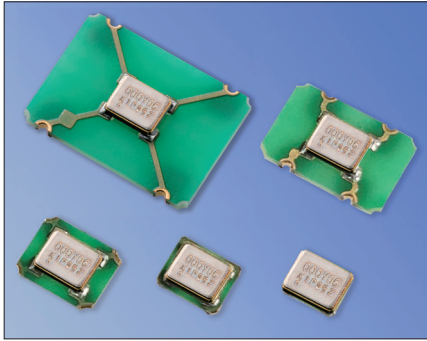
| INH Function | |
|--------------|-------------------------|
| Pad1 | Pad3 (Output) |
| Open | Active |
| "H" Level | Active |
| "L" Level | High Z (No-Oscillation) |

Clock Oscillators





CMOS/ 1.8V, 2.5V, 3.3V / 2.0×1.6, 2.5×2.0, 3.2×2.5, 5.0×3.2, 7.0×5.0mm



RoHS Compliant

Features

- Frequency Range 0.5 to 170 MHz
- CMOS Output
- Short Lead Time
- Heat resistant up to +125°C

Applications

- Consumer/ Networking/ Industrial/ Amuse

Table 1

| Freq. Code | Tol. × 10 ⁻⁶ | Operating Temperature Range (°C) | Note |
|------------|-------------------------|----------------------------------|----------------------------------------------|
| S | ± 30 | -10 to +70 | For additional stability, please contact us. |
| U | ± 25 | | |
| W | ± 20 | | |
| G | ± 50 | -40 to +85 | |
| H | ± 30 | | |
| J | ± 25 | | |
| K | ± 20 | -40 to +105 | |
| L | ± 15 | | |
| 6 | ± 50 | | |
| 5 | ± 30 | -40 to +125 | |
| X | ± 100 | | |
| Z | ± 50 | | |
| 9 | ± 30 | | |

How to Order

KC□□□□Z 25.0000 C 1 □ X 00
① ② ③ ④ ⑤ ⑥ ⑦

①Series

| | | | |
|---------|-----------|---------|-----------|
| KC2016Z | 2016 Size | KC2520Z | 2520 Size |
| KC3225Z | 3225 Size | KC5032Z | 5032 Size |
| KC7050Z | 7050 Size | | |

②Output Frequency (25.0000 : 25MHz)

③Output Type (C : CMOS)

④Supply Voltage

(1 : 1.8V/ 2.5V/ 3.3V Compatible)

⑤Frequency Tolerance (See Table 1)

⑥Symmetry/ INH Function

| | |
|---|-------------|
| X | STD 45/ 55% |
|---|-------------|

⑦Individual Specification

(STD Specification is "00".)

Packaging Tape&Reel

| | |
|---------------------------|-----------------|
| KC7050Z/ KC5032Z | 1000 pcs./ reel |
| KC3225Z/ KC2520Z/ KC2016Z | 2000 pcs./ reel |

Specifications

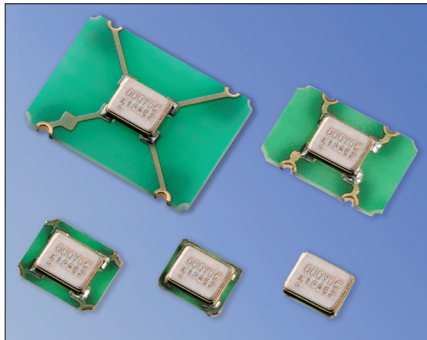
| Item | Symbol | Conditions | Min. | Max. | Unit | |
|----------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------|------|----|
| Output Frequency Range | f _o | | 0.5 | 170 | MHz | |
| Frequency Tolerance | f _{tol} | Initial tolerance, Operating temperature range, Rated power supply voltage change, Load change, Aging (1 year @25°C), Shock and vibration | See Table 1. | | | |
| Storage Temperature Range | T _{stg} | | -55 | 150 | °C | |
| Operating Temperature Range | T _{use} | | See Table 1. | | | |
| Max. Supply Voltage | — | | -0.3 | 4.5 | V | |
| Supply Voltage | V _{cc} | | 1.71 | 3.63 | V | |
| Current Consumption (Noload/ 1.71≤V _{cc} ≤2.25) | I _{cc} | 0.5≤f _o <5MHz | — | 5.2 | mA | |
| | | 5≤f _o <15MHz | — | 5.8 | | |
| | | 15≤f _o <30MHz | — | 6.2 | | |
| | | 30≤f _o <50MHz | — | 6.8 | | |
| | | 50≤f _o <60MHz | — | 6.8 | | |
| | | 60<f _o <75MHz | — | 9 | | |
| | | 75≤f _o <105MHz | — | 10 | | |
| | | 105≤f _o <130MHz | — | 10.5 | | |
| | | 130≤f _o <160MHz | — | 11.5 | | |
| 160≤f _o ≤170MHz | — | 12.5 | | | | |
| Current Consumption (Noload/ 2.25<V _{cc} ≤2.8) | I _{cc} | 0.5≤f _o <5MHz | — | 5.5 | mA | |
| | | 5≤f _o <15MHz | — | 6 | | |
| | | 15≤f _o <30MHz | — | 6.5 | | |
| | | 30≤f _o <50MHz | — | 7.2 | | |
| | | 50≤f _o <60MHz | — | 7.4 | | |
| | | 60<f _o <75MHz | — | 10 | | |
| | | 75≤f _o <105MHz | — | 11.5 | | |
| | | 105≤f _o <130MHz | — | 12.5 | | |
| | | 130≤f _o <160MHz | — | 14 | | |
| 160≤f _o ≤170MHz | — | 15 | | | | |
| Current Consumption (Noload/ 2.8<V _{cc} ≤3.63) | I _{cc} | 0.5≤f _o <5MHz | — | 5.8 | mA | |
| | | 5≤f _o <15MHz | — | 6.5 | | |
| | | 15≤f _o <30MHz | — | 7.3 | | |
| | | 30≤f _o <50MHz | — | 8 | | |
| | | 50≤f _o <60MHz | — | 8.5 | | |
| | | 60<f _o <75MHz | — | 12.5 | | |
| | | 75≤f _o <105MHz | — | 14.5 | | |
| | | 105≤f _o <130MHz | — | 15.5 | | |
| | | 130≤f _o <160MHz | — | 18 | | |
| 160≤f _o ≤170MHz | — | 19.5 | | | | |
| Stand-by Current | I _{std} | | — | 5 | μA | |
| Symmetry | SYM | @50% V _{cc} | 45 | 55 | % | |
| Rise/ Fall Time (20% to 80% Output Level) | Tr/ Tf | 0.5≤f _o ≤60MHz | Loaded/ 1.71≤V _{cc} ≤2.25 | — | 4 | ns |
| | | | Loaded/ 2.25<V _{cc} ≤2.8 | — | 3 | |
| | | | Loaded/ 2.8<V _{cc} ≤3.63 | — | 2.5 | |
| | | 60<f _o ≤170MHz | Loaded/ 1.71≤V _{cc} ≤2.25 | — | 1.5 | |
| | | | Loaded/ 2.25<V _{cc} ≤2.8 | — | 1.3 | |
| | | | Loaded/ 2.8<V _{cc} ≤3.63 | — | 1 | |
| Low Level Output Voltage | V _{OL} | I _{OL} = 4mA | — | 10% V _{cc} | V | |
| High Level Output Voltage | V _{OH} | I _{OH} = -4mA | 90% V _{cc} | — | V | |
| Output Load (CMOS) | L _{CMOS} | | — | 15 | pF | |
| Low Level Input Voltage | V _{IL} | | — | 30% V _{cc} | V | |
| High Level Input Voltage | V _{IH} | | 70% V _{cc} | — | V | |
| Disable Time | t _{dis} | | — | 200 | ns | |
| Enable Time | t _{ena} | | — | 5 | ms | |
| Start-up Time | t _{str} | @Minimum operating voltage to be 0 sec. | — | 5 | ms | |

All electrical characteristics are defined at the maximum load and operating temperature range.





CMOS/ 1.8V, 2.5V, 3.3V / 2.0×1.6, 2.5×2.0, 3.2×2.5, 5.0×3.2, 7.0×5.0mm



RoHS Compliant

Features

- Frequency Range 24 to 72 MHz
- CMOS Output
- Low Jitter
- Heat resistant up to +125°C

Applications

- Consumer/ Networking/ Industrial/ Amuse

Table 3

| Freq. Code | Tol. × 10 ⁻⁶ | Operating Temperature Range (°C) | Note |
|------------|-------------------------|----------------------------------|----------------------------------------------|
| S | ± 30 | -10 to +70 | For additional stability, please contact us. |
| U | ± 25 | | |
| W | ± 20 | | |
| G | ± 50 | -40 to +85 | |
| H | ± 30 | | |
| J | ± 25 | | |
| K | ± 20 | -40 to +105 | |
| L | ± 15 | | |
| 6 | ± 50 | | |
| 5 | ± 30 | -40 to +125 | |
| X | ± 100 | | |
| Z | ± 50 | | |
| 9 | ± 30 | | |

How to Order

KC□□□□Z 25.0000 C 1 □ Y 00
① ② ③ ④ ⑤ ⑥ ⑦

①Series

| | | | |
|---------|-----------|---------|-----------|
| KC2016Z | 2016 Size | KC2520Z | 2520 Size |
| KC3225Z | 3225 Size | KC5032Z | 5032 Size |
| KC7050Z | 7050 Size | | |

②Output Frequency (25.0000 : 25MHz)

③Output Type (C : CMOS)

④Supply Voltage

(1 : 1.8V/ 2.5V/ 3.3V Compatible)

⑤Frequency Tolerance (See Table 3)

⑥Symmetry/ INH Function

| | |
|---|-------------------------|
| Y | STD/ Low Jitter 45/ 55% |
|---|-------------------------|

⑦Individual Specification

(STD Specification is "00".)

Packaging Tape&Reel

| | |
|---------------------------|-----------------|
| KC7050Z/ KC5032Z | 1000 pcs./ reel |
| KC3225Z/ KC2520Z/ KC2016Z | 2000 pcs./ reel |

Specifications

| Item | Symbol | Conditions | Min. | Max. | Unit | |
|----------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---------------------|------|----|
| Output Frequency Range | f _o | | 24 | 72 | MHz | |
| Frequency Tolerance | f _{tol} | Initial tolerance, Operating temperature range, Rated power supply voltage change, Load change, Aging (1 year @25°C), Shock and vibration | See Table 3 | | | |
| Storage Temperature Range | T _{stg} | | -55 | 150 | °C | |
| Operating Temperature Range | T _{use} | | See Table 3 | | | |
| Max. Supply Voltage | — | | -0.3 | 4.5 | V | |
| Supply Voltage | V _{cc} | | 1.71 | 3.63 | V | |
| Current Consumption (Noload/ 1.71≤V _{cc} ≤2.25) | I _{cc} | 24≤f _o <30MHz | — | 2.7 | mA | |
| | | 30≤f _o <50MHz | — | 3.3 | | |
| | | 50≤f _o ≤60MHz | — | 3.7 | | |
| | | 60<f _o <72MHz | — | 4 | | |
| Current Consumption (Noload/ 2.25<V _{cc} ≤2.8) | I _{cc} | 24≤f _o <30MHz | — | 3.5 | | |
| | | 30≤f _o <50MHz | — | 4 | | |
| | | 50≤f _o ≤60MHz | — | 4.3 | | |
| | | 60<f _o <72MHz | — | 4.8 | | |
| Current Consumption (Noload/ 2.8<V _{cc} ≤3.63) | I _{cc} | 24≤f _o <30MHz | — | 4 | | |
| | | 30≤f _o <50MHz | — | 5 | | |
| | | 50≤f _o ≤60MHz | — | 5.5 | | |
| | | 60<f _o <72MHz | — | 6 | | |
| Stand-by Current | I _{std} | | — | 5 | μA | |
| Symmetry | SYM | @50% V _{cc} | 24≤f _o ≤40MHz | 40 | 55 | % |
| | | | 40<f _o ≤72MHz | 45 | 55 | |
| Rise/ Fall Time (20% to 80% Output Level) | Tr/ Tf | Loaded/ 1.71≤V _{cc} ≤2.25 | — | 4 | ns | |
| | | Loaded/ 2.25<V _{cc} ≤2.8 | — | 3.2 | | |
| | | Loaded/ 2.8<V _{cc} ≤3.63 | — | 2.7 | | |
| Low Level Output Voltage | V _{OL} | I _{OL} = 4mA | — | 10% V _{cc} | V | |
| High Level Output Voltage | V _{OH} | I _{OH} = -4mA | 90% V _{cc} | — | V | |
| Output Load (CMOS) | L _{CMOS} | | — | 15 | pF | |
| Low Level Input Voltage | V _{IL} | | — | 30% V _{cc} | V | |
| High Level Input Voltage | V _{IH} | | 70% V _{cc} | — | V | |
| Disable Time | t _{dis} | | — | 200 | ns | |
| Enable Time | t _{ena} | | — | 5 | ms | |
| Start-up Time | t _{str} | @Minimum operating voltage to be 0 sec. | — | 5 | ms | |
| 1 Sigma Jitter | J _{Sigma} | Measured with Wavecrest SIA-3000 | — | 5 | ps | |
| Peak to Peak Jitter | J _{PK_PK} | | — | 50 | | |
| Phase Jitter | — | @50MHz V _{cc} = 3.3V | BW : 12kHz to 20MHz | | 1 | ps |

All electrical characteristics are defined at the maximum load and operating temperature range.

