



# SMD Crystal Clock Oscillators

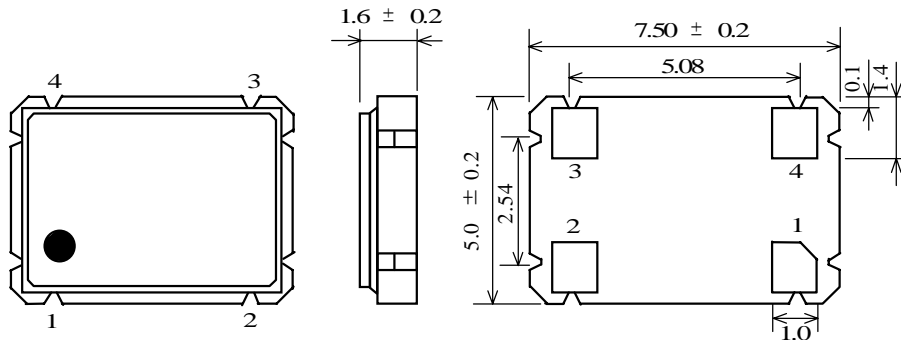
## SMD Crystal Clock Oscillators: KCO-73 Type

### ■ Features

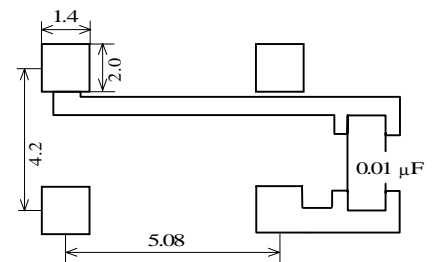
- Low profile,  $h=1.6\text{ mm} \pm 0.2\text{ mm}$
- Power supply voltage 3.3V type
- Wide frequency range (1.5MHz~100MHz)
- High reliability is achieved by a metal cap and sealing
- Most suitable for automatic mounting, reflow soldering.



### ■ Dimensions (Unit: mm)



### ■ Recommended Land Pattern



### ■ Specifications

| Item                        | KCO-735 / 736  | KCO-730 / 731              |
|-----------------------------|--|----------------------------|
|                             | Tri-state function   | without Tri-state function |
| Power Supply Voltage        | +3.3 V $\pm 10\%$  |                            |
| Frequency Range             | 1.544 MHz ~ 100.000 MHz  |                            |
| Operating Temperature Range | - 10 °C ~ + 70 °C  |                            |
| Frequency Stability         | $\pm 50\text{ ppm}$ , $\pm 100\text{ ppm}$   |                            |
| Load                        | 15 pF (Max.)   |                            |
| Symmetry                    | 40 % ~ 60 % / 45 % ~ 55 %  |                            |
| Rise, Fall Time             | 5 nS (Max.)  |                            |
| Output Voltage              | VOL 10 % VDD (Max.)<br>VOH 90 % VDD (Min.)   |                            |
| Current Consumption         | 1.5 MHz ~ 36 MHz 10 mA (Max.)<br>36 <sup>+</sup> MHz ~ 70 MHz 25 mA (Max.)<br>70 <sup>+</sup> MHz ~ 100 MHz 40 mA (Max.) |                            |
| Output Current              | "0"Level Min. 8 mA<br>"1"Level Min. 8 mA   |                            |
| Start-up Time               | 1.5 MHz ~ 36 MHz 5mS<br>36 <sup>+</sup> MHz ~ 70 MHz 10 mS<br>70 <sup>+</sup> MHz ~ 100 MHz 10 mS                        |                            |

| Standard Frequency (MHz) |          |
|--------------------------|----------|
| 1.5440                   | 25.0000  |
| 1.8432                   | 28.6363  |
| 2.0480                   | 32.7680  |
| 3.6864                   | 33.3330  |
| 4.0960                   | 35.3280  |
| 4.9152                   | 35.7160  |
| 7.3728                   | 40.0000  |
| 9.8304                   | 44.7360  |
| 11.0592                  | 48.0000  |
| 12.2880                  | 49.1520  |
| 14.31818                 | 56.4480  |
| 14.7456                  | 60.0000  |
| 15.3600                  | 66.6660  |
| 16.3840                  | 70.0000  |
| 18.4320                  | 72.0000  |
| 20.0000                  | 80.0000  |
| 24.5760                  | 100.0000 |

Other specifications will be available upon consultation.



# SMD Crystal Clock Oscillators

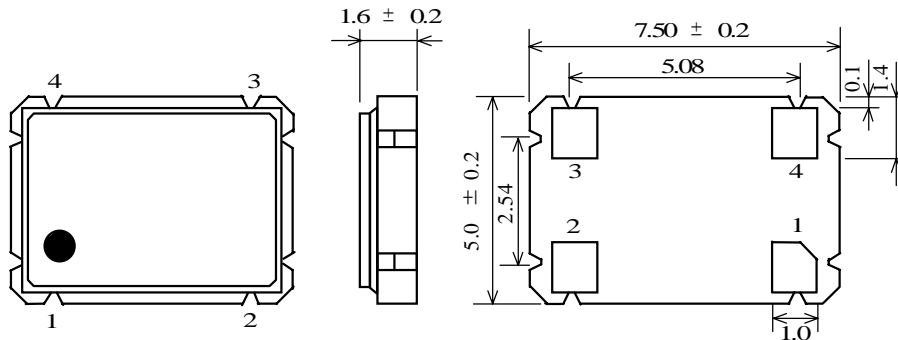
## SMD Crystal Clock Oscillators: KCO-76 Type

### ■ Features

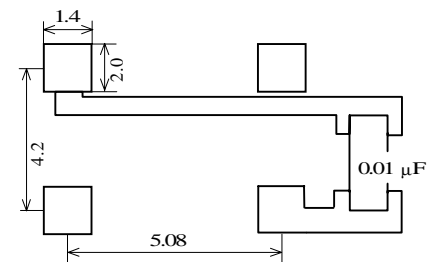
- Low profile,  $h=1.6\text{ mm} \pm 0.2\text{ mm}$
- Power supply voltage 5.0V type
- Wide frequency range (1.5MHz~70MHz)
- High reliability is achieved by a metal cap and sealing
- Most suitable for automatic mounting, reflow soldering.



### ■ Dimensions (Unit: mm)



### ■ Recommended Land Pattern



### ■ Specifications

| Item                        | KCO-765 / 766  | KCO-760 / 761              |
|-----------------------------|--|----------------------------|
|                             | Tri-state function   | without Tri-state function |
| Power Supply Voltage        | +5.0 V $\pm 10\%$  |                            |
| Frequency Range             | 1.544 MHz ~ 70.000 MHz   |                            |
| Operating Temperature Range | - 10 °C ~ + 70 °C  |                            |
| Frequency Stability         | $\pm 50\text{ ppm}$ , $\pm 100\text{ ppm}$                                 |                            |
| Load                        | 50 pF (Max.)   |                            |
| Symmetry                    | 40 % ~ 60 % / 45 % ~ 55 %  |                            |
| Rise, Fall Time             | 7 nS (Max.)  |                            |
| Output Voltage              | VOL 10 % V <sub>DD</sub> (Max.)<br>VOH 90 % V <sub>DD</sub> (Min.)         |                            |
| Current Consumption         | 1.5 MHz ~ 36 MHz 25 mA (Max.)<br>36 <sup>+</sup> MHz ~ 70 MHz 60 mA (Max.) |                            |
| Output Current              | “0”Level Min. 16 mA<br>“1”Level Min. 16 mA                                 |                            |
| Start-up Time               | 1.5 MHz ~ 36 MHz 5mS<br>36 <sup>+</sup> MHz ~ 70 MHz 10 mS                 |                            |

| Standard Frequency (MHz) |         |
|--------------------------|---------|
| 1.5440                   | 24.5760 |
| 1.8432                   | 25.0000 |
| 2.0480                   | 28.6363 |
| 3.6864                   | 32.7680 |
| 4.0960                   | 33.3330 |
| 4.9152                   | 35.3280 |
| 7.3728                   | 35.7160 |
| 9.8304                   | 40.0000 |
| 11.0592                  | 44.7360 |
| 12.2880                  | 48.0000 |
| 14.31818                 | 49.1520 |
| 14.7456                  | 56.4480 |
| 15.3600                  | 60.0000 |
| 16.3840                  | 66.6660 |
| 18.4320                  | 70.0000 |
| 20.0000                  |         |

Other specifications will be available upon consultation.



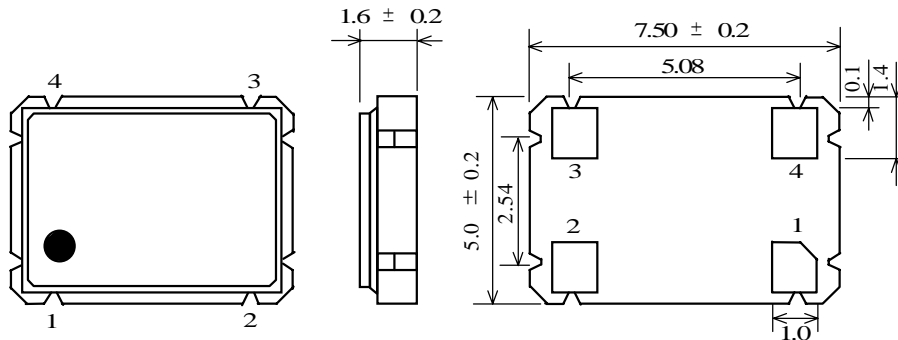
## SMD Crystal Clock Oscillators: KCO-70 Type

### ■ Features

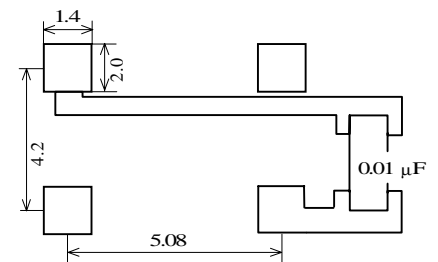
- Low profile,  $h=1.6\text{ mm} \pm 0.2\text{ mm}$
- Power supply voltage 3.3V type
- Frequency range (100MHz~125MHz)
- High reliability is achieved by a metal cap and sealing
- Most suitable for automatic mounting, reflow soldering.



### ■ Dimensions (Unit: mm)



### ■ Recommended Land Pattern



### ■ Specifications

| Item                        | KCO-705 / 706  |
|-----------------------------|--|
|                             |  |
| Power Supply Voltage        | +3.3 V $\pm 5\%$   |
| Frequency Range             | 106.250 MHz ~ 125.00 MHz   |
| Operating Temperature Range | - 10 °C ~ + 70 °C  |
| Frequency Stability         | $\pm 50\text{ ppm}$ , $\pm 100\text{ ppm}$   |
| Load                        | 15 pF (Max.)   |
| Symmetry                    | 40 % ~ 60 % / 45 % ~ 55 %  |
| Rise, Fall Time             | 5 nS (Max.)  |
| Output Voltage              | V <sub>OL</sub> 10 % V <sub>DD</sub> (Max.)<br>V <sub>OH</sub> 90 % V <sub>DD</sub> (Min.) |
| Current Consumption         | ~ 125.000 MHz 50 mA (Max.)   |
| Output Current              | “0”Level Min.4 mA<br>“1”Level Min. 4 mA  |
| Start-up Time               | 15mS   |
| Jitter                      | 8 ps ~ 4 ps (RMS)  |

| Standard Frequency (MHz) |
|--------------------------|
| 106.250                  |
| 110.000                  |
| 116.000                  |
| 125.000                  |

Other specifications will be available upon consultation.