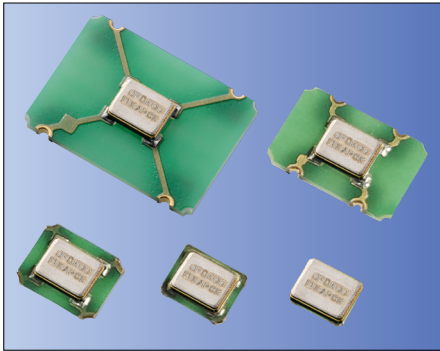




CMOS/ 1.8V, 2.5V, 3.3V / 2.0×1.6, 2.5×2.0, 3.2×2.5, 5.0×3.2, 7.0×5.0mm



RoHS Compliant

### Features

- CMOS output
- Wide Supply Voltage
  - 1.6 to 3.63V
- Low current consumption
- Low Phase Noise

### Applications

- Consumer / Networking / Industrial / Audio Codec / Amuse / Clock for sleep

Table 1

Freq. Code	Tol. × 10 <sup>-6</sup>	Operating Temperature Range (°C)	Note
2	± 25	-40 to +85	Standard specifications
3	± 90	-40 to +125	

### How to Order

KC2520K 32K7680 C 1 □ A 00  
 ①                      ②                      ③ ④ ⑤ ⑥ ⑦

- ①Series
- ②Output Frequency (32.768kHz)
- ③Output Type (C: CMOS)
- ④Supply Voltage

1	1.8V/ 2.5V/ 3.3V compatible
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- ⑤Frequency Tolerance (See Table 1)
- ⑥Symmetry/ INH Function

A	45/ 55%
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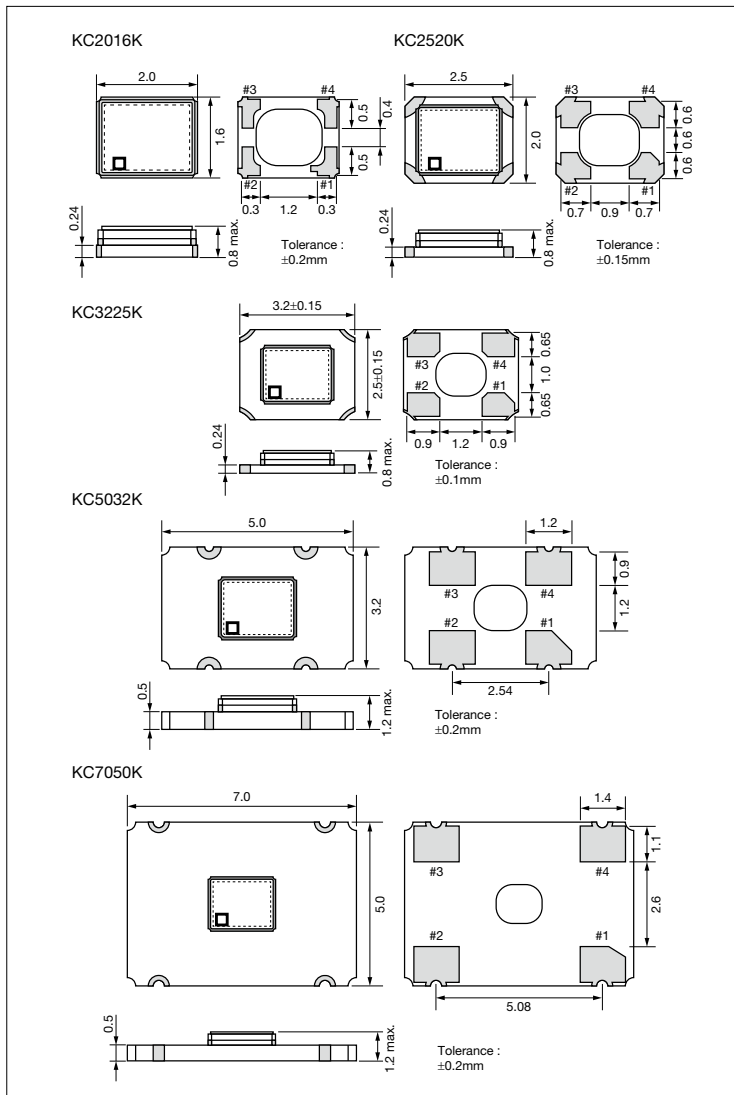
- ⑦Individual Specification (STD Specification is "00".)

### Packaging Tape & Reel

KC7050K/ KC5032K	1000 pcs./ reel
KC3225K/ KC2520K/ KC2016K	2000 pcs./ reel

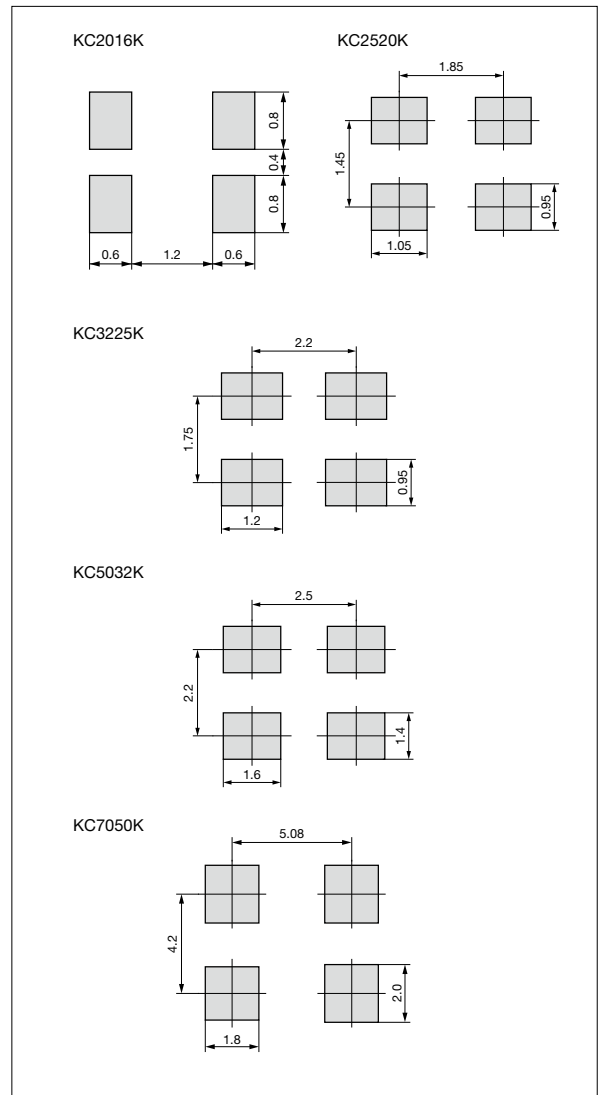
### Dimensions

(Unit: mm)



### Recommended Land Pattern

(Unit: mm)





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

## Specifications

Item	Symbol	Conditions	Min.	Max.	Unit	
Output Frequency	F <sub>o</sub>		32.768		kHz	
Frequency Tolerance	F <sub>tol</sub>	Initial tolerance(@+25°C), Operating temperature range, Rated power supply voltage change (V <sub>cc</sub> ±10%)	Temp.: -40 to +85°C	-25	+25	×10 <sup>-6</sup>
			Temp.: -40 to +125°C	-90	+90	
	F <sub>Aging</sub>	Aging (@1 year)	-3	+3		
	F <sub>Oth</sub>	Others (Load change, shock and vibration)	-4	+4		
Storage Temperature Range	T <sub>STG</sub>		-55	+150	°C	
Operating Temperature	T <sub>use</sub>		-40	+85	°C	
			-40	+125		
Max. Supply Voltage	—		-0.3	+4.5	V	
Supply Voltage	V <sub>cc</sub>		+1.60	+3.63	V	
Current Consumption (No Load)	I <sub>cc</sub>	1.6≤V <sub>cc</sub> ≤2.0V	—	28	μA	
		2.0<V <sub>cc</sub> ≤2.8V	—	29		
		2.8<V <sub>cc</sub> ≤3.63V	—	30		
Stand-by Current	I <sub>std</sub>		—	5	μA	
Symmetry	SYM	@50% V <sub>cc</sub>	45	55	%	
Rise/ Fall Time (10% V <sub>CC</sub> to 90% V <sub>CC</sub> Out- put Level)	Tr/ Tf		—	50	ns	
Low Level Output Voltage	V <sub>OL</sub>	I <sub>OL</sub> = 1mA	—	10% V <sub>cc</sub>	V	
High Level Output Voltage	V <sub>OH</sub>	I <sub>OH</sub> = -1mA	90% V <sub>cc</sub>	—	V	
Output Load	L <sub>CMOS</sub>		15		pF	
Low Level Input Voltage	V <sub>IL</sub>		—	30% V <sub>cc</sub>	V	
High Level Input Voltage	V <sub>IH</sub>		70% V <sub>cc</sub>	—	V	
Disable Time	t <sub>dis</sub>		—	100	ns	
Enable Time	t <sub>ena</sub>		—	2	ms	
Start-up Time	t <sub>sta</sub>	@Minimum operating voltage to be 0 sec.	—	5	ms	

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

Pad Connections	
#1	Stand-by Function
#2	Case GND
#3	Output
#4	V <sub>cc</sub>

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