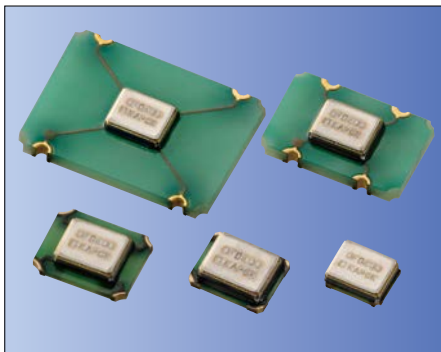


Clock Oscillators Surface Mount Type

Clock "K" Series



CMOS/ 1.8V, 2.5V, 3.3V, 5.0V Compatible/ 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 1.5 to 80MHz
- CMOS output
- Wide Supply Voltage 1.6 to 3.63V
- Low current consumption
- Option: Low Phase Noise Version

Applications

- Consumer/ Networking/ Industrial/ Audio Codec/ Amuse

Table 1

Freq. Code	Tol. $\times 10^{-6}$	Operating Temperature Range (°C)	Note
0	± 50	-10 to +70	Standard specifications
S	± 30		
U	± 25	-40 to +85	With only certain frequencies
G	± 50		
6	± 50		

How to Order

KC2520K 25.0000 C 1 0 E 00
 ① ② ③ ④ ⑤ ⑥ ⑦

- ① Series
- ② Output Frequency (25.0000: 25MHz)
- ③ Output Type (C: CMOS)
- ④ Supply Voltage
 - 1 : 1.8V/ 2.5V/ 3.3V Multi Voltage (Version E : Standard)
 - 2 : 2.5V (Version N : Low Phase Noise)
 - 3 : 3.3V (Version N : Low Phase Noise)
 - 5 : 5.0V (Version N : Low Phase Noise)
- ⑤ Frequency Tolerance (See Table 1)
- ⑥ Symmetry/ INH Function
 - E : 45/ 55%, Stand-by
 - N : 45/ 55%, Stand-by, Low Phase Noise
- ⑦ Customer Special Model Suffix (STD Specification is "00")

Packaging Tape & Reel

KC7050K/ KC5032K

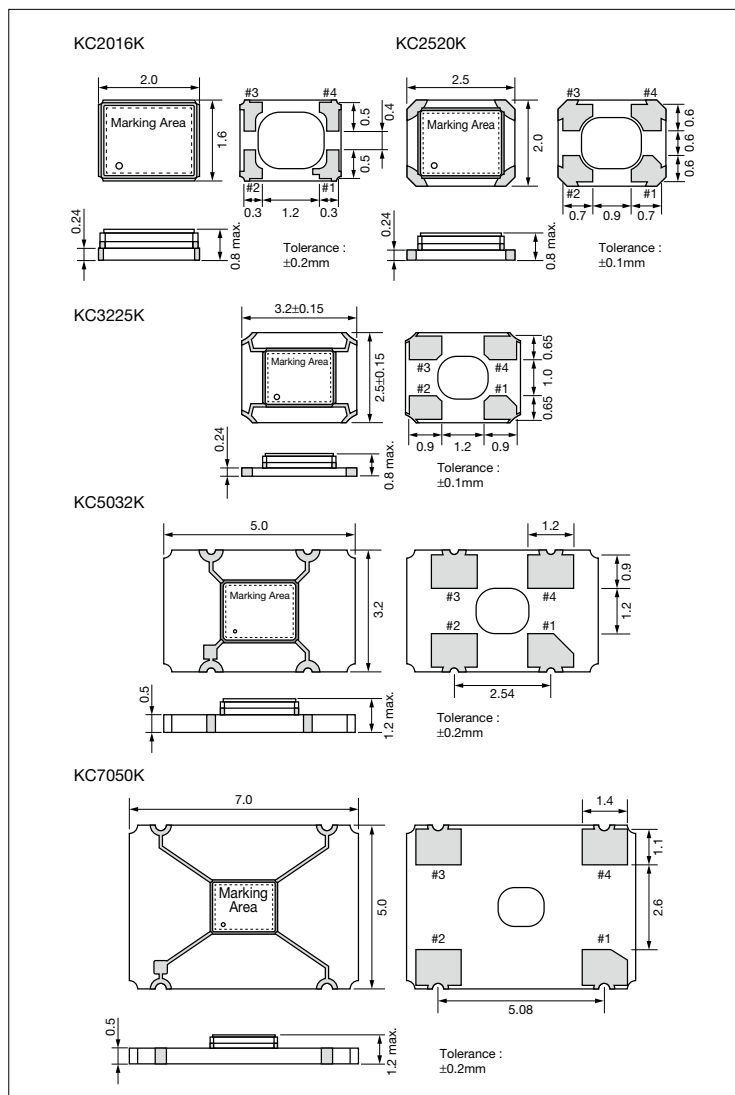
: 1000 pcs/ reel

KC3225K/ KC2520K/ KC2016K

: 2000 pcs/ reel

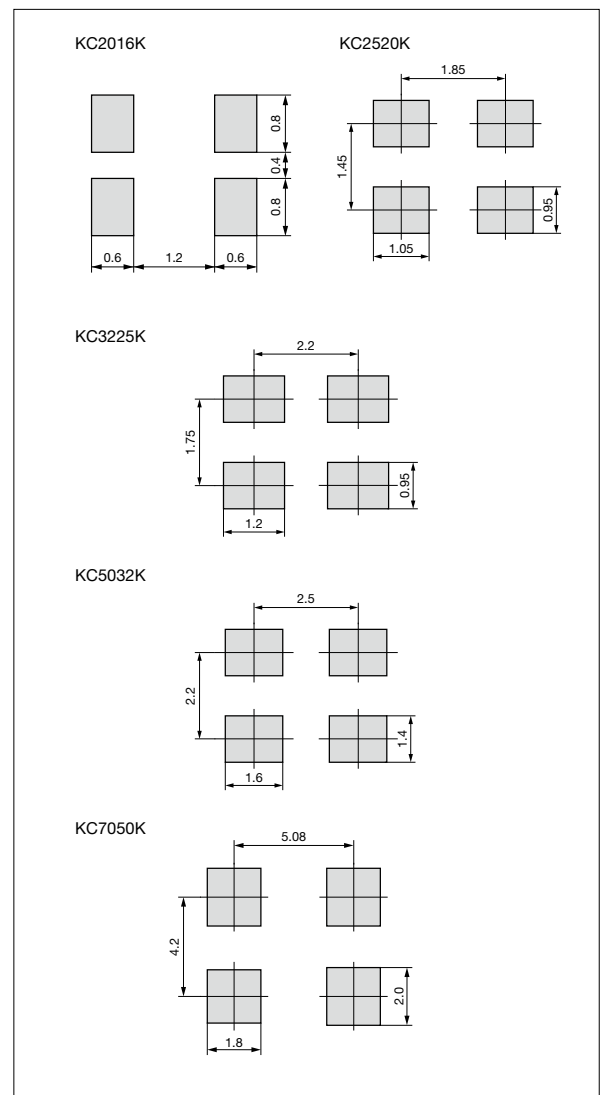
Dimensions

(Unit: mm)



Recommended Land Pattern

(Unit: mm)



Clock Oscillators Surface Mount Type

Clock "K" Series



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

Specifications

Item	Symbol	Conditions		Version E (Standard)		Version N (Low Phase Noise)		Units
				Min.	Max.	Min.	Max.	
Output Frequency Range ^{Note1}	f _o			1.5	80	1.5	80	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	Op. Temp.: -10 to +70°C/ -40 to +85°C/ -40 to +105°C	-50	+50	-50	+50	×10 ⁻⁶
			Op. Temp.: -10 to +70°C	-30	+30	-30	+30	
			Op. Temp.: -10 to +70°C	-25	+25	-25	+25	
Frequency Aging	f _{age}	@25°C First year		-3	+3	-3	+3	×10 ⁻⁶ /y
Storage Temperature Range	T _{stg}			-55	+125	-55	+125	°C
Operating Temperature Range	T _{use}			-10	+70	-10	+70	°C
				-40	+85	-40	+85	
				-40	+105	-40	+105	
Max. Supply Voltage	—			-0.3	+4.0	-0.3	+7.0	V
Supply Voltage	V _{cc}	Code ④ : 1		+1.60	+3.63	—	—	V
		Code ④ : 2		—	—	+2.25	+2.75	
		Code ④ : 3		—	—	+2.97	+3.63	
		Code ④ : 5		—	—	+4.50	+5.50	
Current Consumption (Maximum Loaded/ 1.5≤F ₀ <24MHz)	I _{cc}	E : 1.6≤V _{cc} ≤2.25V		—	2.5	—	—	mA
		E : 2.25<V _{cc} ≤2.8V/ N : 2.25≤V _{cc} ≤2.75V		—	3.0	—	4	
		E : 2.8<V _{cc} ≤3.63V/ N : 2.97≤V _{cc} ≤3.63V		—	3.5	—	6	
		N : 4.50≤V _{cc} ≤5.50V		—	—	—	24	
Current Consumption (Maximum Loaded/ 24≤F ₀ <40MHz)	I _{cc}	E : 1.6≤V _{cc} ≤2.25V		—	3.5	—	—	
		E : 2.25<V _{cc} ≤2.8V/ N : 2.25≤V _{cc} ≤2.75V		—	4.5	—	5	
		E : 2.8<V _{cc} ≤3.63V/ N : 2.97≤V _{cc} ≤3.63V		—	5.0	—	7	
		N : 4.50≤V _{cc} ≤5.50V		—	—	—	24	
Current Consumption (Maximum Loaded/ 40≤F ₀ <62.5MHz)	I _{cc}	E : 1.6≤V _{cc} ≤2.25V		—	5.0	—	—	
		E : 2.25<V _{cc} ≤2.8V/ N : 2.25≤V _{cc} ≤2.75V		—	5.5	—	8	
		E : 2.8<V _{cc} ≤3.63V/ N : 2.97≤V _{cc} ≤3.63V		—	6.0	—	11	
		N : 4.50≤V _{cc} ≤5.50V		—	—	—	24	
Current Consumption (Maximum Loaded/ 62.5≤F ₀ <80MHz)	I _{cc}	E : 1.6≤V _{cc} ≤2.25V		—	6.0	—	—	
		E : 2.25<V _{cc} ≤2.8V/ N : 2.25≤V _{cc} ≤2.75V		—	6.5	—	14	
		E : 2.8<V _{cc} ≤3.63V/ N : 2.97≤V _{cc} ≤3.63V		—	8.0	—	18	
		N : 4.50≤V _{cc} ≤5.50V		—	—	—	24	
Stand-by Current	I _{std}			—	5	—	5	μA
Symmetry	SYM	@50% V _{cc}		45	55	45	55	%
Rise/ Fall Time (10% to 90% Output Level)	tr/ tf	E : 1.6≤V _{cc} ≤2.25V		—	6	—	—	ns
		E : 2.25<V _{cc} ≤2.8V/ N : 2.25≤V _{cc} ≤2.75V		—	5	—	6	
		E : 2.8<V _{cc} ≤3.63V/ N : 2.97≤V _{cc} ≤3.63V		—	4.5	—	5	
		N : 4.50≤V _{cc} ≤5.50V		—	—	—	8	
Low Level Output Voltage	V _{OL}	E : I _{OL} = 4mA		—	10% V _{cc}	—	10% V _{cc}	V
		N (1.5≤F ₀ ≤62.5MHz) : I _{OL} = 4mA						
		N (62.5<F ₀ ≤80MHz) : I _{OL} = 8mA						
High Level Output Voltage	V _{OH}	E : I _{OH} = -4mA		90% V _{cc}	—	90% V _{cc}	—	V
		N (1.5≤F ₀ ≤62.5MHz) : I _{OL} = 4mA						
		N (62.5<F ₀ ≤80MHz) : I _{OL} = 8mA						
Output Load	L _{CMOS}			15 ^{Note2}		15 ^{Note2}		pF
Low Level Input Voltage	V _{IL}			—	30% V _{cc}	—	30% V _{cc}	V
High Level Input Voltage	V _{IH}			70% V _{cc}	—	70% V _{cc}	—	V
Disable Time	t _{dis}			—	200	—	150	ns
Enable Time	t _{ena}			—	3	—	5	ms
Start-up Time	t _{str}	@Minimum operating voltage to be 0 sec.		—	3	—	5	ms
1 Sigma Jitter	J _{Sigma}	Measured with Wavecrest SIA-3000		—	5	—	4	ps
Peak to Peak Jitter	J _{PK-PK}			—	50	—	40	ps
Phase Jitter	J _{Phase}	BW : 12kHz to 20MHz		—	1.0	—	0.3	ps
Phase Noise	—	@25MHz	@10Hz offset	-89	-92	dBc/ Hz		
			@100Hz offset	-119	-126			
			@1kHz offset	-143	-151			
			@10kHz offset	-157	-160			
			@100kHz offset	-160	-167			
			@1MHz offset	-162	-170			
			@10MHz offset	-162	-170			

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

Note1: Please contact us for inquiry about operating temperature range, available frequencies and other conditions.

Note2: Please contact us for Output Load 30pF.

Pad Connections	
#1	Enable/ Disable
#2	Case GND
#3	Output
#4	V _{cc}

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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

AVX:

[KC3225K24.5760C1GE00](#) [KC3225K32.0000C1GE00](#) [KC3225K50.0000C1GE00](#) [KC3225K27.0000C1GE00](#)
[KC3225K20.0000C1GE00](#) [KC3225K24.0000C1GE00](#) [KC3225K25.0000C1GE00](#) [KC3225K40.0000C1GE00](#)
[KC3225K48.0000C1GE00](#) [KC3225K33.3333C1GE00](#) [KC3225K28.6364C1GE00](#) [KC3225K66.6667C1GE00](#)
[KC3225K7.37280C10E00](#) [KC3225K11.2896C1GE00](#) [KC3225K12.0000C1GE00](#) [KC3225K7.37280C1GE00](#)
[KC3225K75.0000C10E00](#) [KC3225K8.00000C10E00](#) [KC3225K14.7456C10E00](#) [KC3225K14.3182C10E00](#)
[KC3225K12.0000C10E00](#) [KC3225K3.68640C10E00](#) [KC3225K12.2880C10E00](#) [KC3225K48.0000C10E00](#)
[KC3225K2.04800C10E00](#) [KC3225K10.0000C10E00](#) [KC3225K14.3182C1GE00](#) [KC3225K32.7680C1GE00](#)
[KC3225K11.2896C10E00](#) [KC3225K66.6667C10E00](#) [KC3225K13.5600C1GE00](#) [KC3225K8.00000C1GE00](#)
[KC3225K10.0000C1GE00](#) [KC3225K1.84320C1GE00](#) [KC3225K4.00000C10E00](#) [KC3225K32.7680C10E00](#)
[KC3225K27.0000C10E00](#) [KC3225K24.5760C10E00](#) [KC3225K12.2880C1GE00](#) [KC3225K32.0000C10E00](#)
[KC3225K80.0000C1GE00](#) [KC3225K2.04800C1GE00](#) [KC3225K60.0000C1GE00](#) [KC3225K75.0000C1GE00](#)
[KC3225K20.0000C10E00](#) [KC3225K13.5600C10E00](#) [KC3225K40.0000C10E00](#) [KC3225K16.0000C1GE00](#)
[KC3225K22.5792C1GE00](#) [KC3225K16.0000C10E00](#) [KC3225K22.5792C10E00](#) [KC3225K16.3840C10E00](#)
[KC3225K33.0000C1GE00](#) [KC3225K50.0000C10E00](#) [KC3225K3.68640C1GE00](#) [KC3225K4.00000C1GE00](#)
[KC3225K14.7456C1GE00](#) [KC3225K33.3333C10E00](#) [KC3225K18.4320C10E00](#) [KC3225K80.0000C10E00](#)
[KC3225K33.0000C10E00](#) [KC3225K28.6364C10E00](#) [KC3225K1.84320C10E00](#) [KC3225K24.0000C10E00](#)
[KC3225K18.4320C1GE00](#) [KC3225K25.0000C10E00](#) [KC3225K60.0000C10E00](#) [KC3225K16.3840C1GE00](#)

Kyocera:

[KC7050K32.0000C1GE00](#) [KC7050K50.0000C1GE00](#) [KC7050K25.0000C1GE00](#) [KC2520K32.0000C1GE00](#)
[KC7050K16.0000C10E00](#) [KC7050K10.0000C10E00](#) [KC2520K24.5760C10E00](#) [KC5032K50.0000C1GE00](#)
[KC2520K13.5600C1GE00](#) [KC7050K14.3182C10E00](#) [KC5032K32.7680C1GE00](#) [KC5032K13.5600C1GE00](#)
[KC7050K33.3333C10E00](#) [KC5032K48.0000C10E00](#) [KC2520K48.0000C1GE00](#) [KC7050K25.0000C10E00](#)
[KC7050K13.5600C1GE00](#) [KC7050K32.0000C10E00](#) [KC5032K14.3182C1GE00](#) [KC5032K18.4320C1GE00](#)
[KC5032K12.2880C1GE00](#) [KC2520K33.3333C10E00](#) [KC5032K14.3182C10E00](#) [KC5032K60.0000C10E00](#)
[KC7050K33.0000C10E00](#) [KC5032K60.0000C1GE00](#) [KC2520K11.2896C1GE00](#) [KC5032K8.00000C1GE00](#)
[KC5032K10.0000C1GE00](#) [KC7050K11.2896C1GE00](#) [KC5032K24.0000C1GE00](#) [KC5032K12.0000C1GE00](#)
[KC5032K28.6364C1GE00](#) [KC2520K1.84320C10E00](#) [KC2520K16.0000C10E00](#) [KC5032K20.0000C1GE00](#)
[KC2520K32.7680C10E00](#) [KC7050K60.0000C10E00](#) [KC7050K1.84320C10E00](#) [KC7050K40.0000C10E00](#)

[KC5032K12.0000C10E00](#) [KC7050K20.0000C10E00](#) [KC5032K3.68640C1GE00](#) [KC2520K22.5792C1GE00](#)
[KC2520K20.0000C10E00](#) [KC5032K2.04800C1GE00](#) [KC2520K10.0000C10E00](#) [KC5032K32.0000C1GE00](#)
[KC7050K14.3182C1GE00](#) [KC2520K24.5760C1GE00](#) [KC2520K20.0000C1GE00](#) [KC2520K66.6667C10E00](#)
[KC7050K7.37280C1GE00](#) [KC5032K27.0000C1GE00](#) [KC2520K16.3840C1GE00](#) [KC7050K60.0000C1GE00](#)
[KC7050K18.4320C1GE00](#) [KC7050K27.0000C10E00](#) [KC5032K25.0000C1GE00](#) [KC2520K27.0000C10E00](#)
[KC5032K40.0000C1GE00](#) [KC7050K75.0000C10E00](#) [KC2520K40.0000C1GE00](#) [KC2520K12.2880C10E00](#)
[KC2520K50.0000C1GE00](#) [KC2520K8.00000C1GE00](#) [KC5032K1.84320C1GE00](#) [KC7050K16.0000C1GE00](#)
[KC5032K22.5792C1GE00](#) [KC5032K25.0000C10E00](#) [KC5032K33.3333C1GE00](#) [KC5032K75.0000C1GE00](#)
[KC2520K10.0000C1GE00](#) [KC7050K1.84320C1GE00](#) [KC2520K32.7680C1GE00](#) [KC2520K11.2896C10E00](#)
[KC5032K24.5760C1GE00](#) [KC5032K14.7456C10E00](#) [KC2520K12.0000C1GE00](#) [KC7050K8.00000C1GE00](#)
[KC2520K18.4320C1GE00](#) [KC2520K33.3333C1GE00](#) [KC2520K80.0000C10E00](#) [KC5032K7.37280C1GE00](#)
[KC7050K16.3840C1GE00](#) [KC7050K12.0000C1GE00](#) [KC2520K24.0000C10E00](#) [KC7050K14.7456C1GE00](#)
[KC7050K80.0000C1GE00](#) [KC2520K40.0000C10E00](#) [KC2520K12.0000C10E00](#) [KC2520K48.0000C10E00](#)
[KC5032K48.0000C1GE00](#) [KC5032K24.0000C10E00](#) [KC2520K33.0000C1GE00](#)