

# Voltage Controlled Crystal Oscillators (VCXO) Surface Mount Type KV7050B-C3 Series



CMOS/ 3.3V/ 7.0x5.0mm



RoHS Compliant

## Features

- High frequency to 170MHz
- Miniature ceramic package
- Highly reliable with seam welding
- CMOS output
- Supply voltage  $V_{CC} = 3.3V$
- Excellent Jitter performance

Table 1

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

## How to Order

KV7050B 24.576 C 3 0 D 00  
 ① ② ③ ④ ⑤ ⑥ ⑦

- ① Series
  - ② Output Frequency
  - ③ Output Type (CMOS)
  - ④ Supply Voltage (3.3V)
  - ⑤ Frequency Tolerance (See Table 1)
  - ⑥ Symmetry/ INH Function/ Input Resistance  
 D:  $1.5 \leq f_o \leq 70\text{MHz}$   
 N:  $70 \leq f_o \leq 170\text{MHz}$
  - ⑦ Customer Special Model Suffix (STD Specification is "00")
- Packaging (Tape & Reel 1000 pcs./ reel)

## Specifications

Item	Symbol	Conditions	Min.	Max.	Units	
Output Frequency Range <sup>Note1</sup>	$f_o$		1.5	170	MHz	
Frequency Tolerance <sup>Note2</sup>	$f_{tol}$	Initial tolerance, Operating temperature range, Rated power supply voltage change, Aging (1 year @25°C), Shock and vibration	Op. Temp.: -10 to +70°C / -40 to +85°C	-50	+50	$\times 10^{-6}$
			Op. Temp.: -10 to +70°C	-30	+30	
Absolute Pull Range	APR	$1.5 \leq f_o \leq 30\text{MHz}$ $30 < f_o \leq 170\text{MHz}$	$\pm 100$ $\pm 50$	—	$\times 10^{-6}$	
Control Voltage	$V_C$		0	+3.3	V	
Storage Temperature Range	$T_{stg}$		-55	+125	°C	
Operating Temperature Range	$T_{use}$	Standard Specifications	-10	+70	°C	
		Extend (Option)	-40	+85		
Max. Supply Voltage	—	$1.5 \leq f_o \leq 80\text{MHz}$ $80 < f_o \leq 170\text{MHz}$	-0.5 -0.5	+7.0 +5.0	V	
Supply Voltage	$V_{CC}$		+2.97	+3.63	V	
Current Consumption	$I_{CC}$	$1.5 \leq f_o \leq 80\text{MHz}$	—	15	mA	
		$80 < f_o \leq 170\text{MHz}$	—	30		
Disable Current	$I_{dis}$	$1.5 \leq f_o \leq 80\text{MHz}$	—	10	mA	
		$80 < f_o \leq 170\text{MHz}$	—	15		
Symmetry	SYM	@50% $V_{CC}$	45	55	%	
Rise/ Fall Time (10% $V_{CC}$ to 90% $V_{CC}$ )	$t_r / t_f$	$1.5 \leq f_o \leq 30\text{MHz}$	—	8	ns	
		$30 < f_o \leq 80\text{MHz}$	—	5		
		$80 < f_o \leq 170\text{MHz}$	—	2.5		
Low Level Output Voltage	$V_{OL}$		—	10% $V_{CC}$	V	
High Level Output Voltage	$V_{OH}$		90% $V_{CC}$	—	V	
Output Load	$L_{CMOS}$		—	15	pF	
Input Voltage Range	$V_{IN}$		0	+3.3	V	
Low Level Input Voltage	$V_{IL}$		—	30% $V_{CC}$	V	
High Level Input Voltage	$V_{IH}$		70% $V_{CC}$	—	V	
Input Resistance	—	Code ⑥ : D	100	—	k ohm	
		Code ⑥ : G or N	5	—	Mohm	
Disable Time	$t_{dis}$	$1.5 \leq f_o \leq 30\text{MHz}$	—	100	ns	
		$30 < f_o \leq 170\text{MHz}$	—	200		
Enable Time	$t_{ena}$	$1.5 \leq f_o \leq 80\text{MHz}$	—	100	ns	
		$80 < f_o \leq 170\text{MHz}$	—	2		
Start-up Time	$t_{str}$	@Minimum operating voltage to be 0 sec.	—	10	ms	
Phase Jitter	$J_{Phase}$	12kHz to 20MHz @122.88MHz	—	0.4	ps	
Phase Noise @122.88MHz Typ.	—				dBc/ Hz	

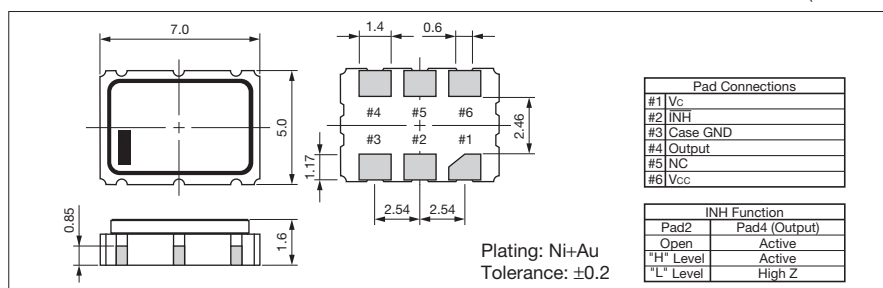
Note : All electrical characteristics are defined at the maximum load and operating temperature range.

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

Note2: Please contact us for the Frequency tolerance of -40 to +85°C.

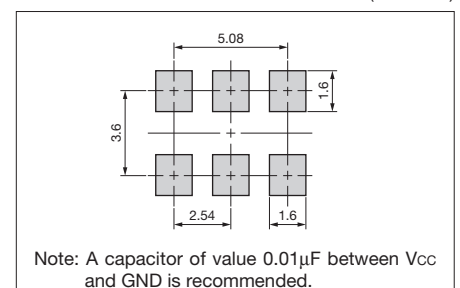
## Dimensions

(Unit: mm)



## Recommended Land Pattern

(Unit: mm)



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