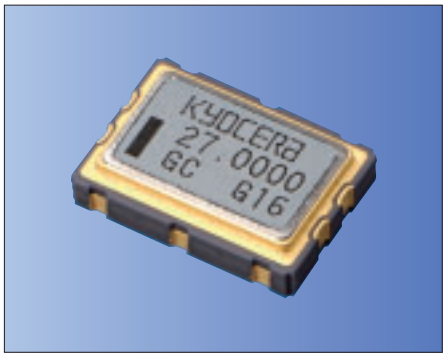
Voltage Controlled Crystal Oscillators (VCXO)
Surface Mount Type KV7050B-C3 Series

KYOCERA

CMOS/ 3.3V/ 7.0×5.0mm



RoHS Compliant

Features

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

Table 1

Freq. Tol. Code	× 10^{-6}	Operating Temperature Range (°C)	Note
0	±50	−10 to +70	Standard specifications
S	±30		Please contact us for available frequencies.
G	±50	−40 to +85	

How to Order

KV7050B 24.576 C 3 □ □ 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≤fo≤70MHz
N:70≤fo≤170MHz
⑦ Individual Specification
(STD Specification is "00")

Packaging (Tape & Reel 1000 pcs./ reel)

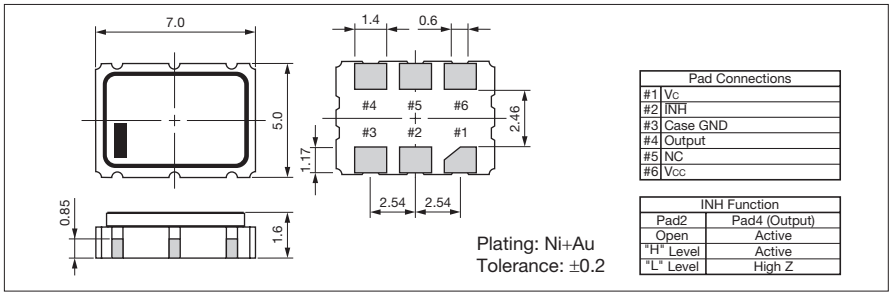
Specifications

Item	Symbol	Conditions		Min.	Max.	Units
Output Frequency Range[Note1]	fo			1.5	170	MHz
Frequency Tolerance[Note2]	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	−50	+50	×10^{-6}
			Op. Temp.: −10 to +70°C	−30	+30	
Absolute Pull Range	APR	1.5≤fo≤30MHz		±100	—	×10^{-6}
		30<fo≤170MHz		±50	—	
Control Voltage	Vc			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≤fo≤80MHz		−0.5	+7.0	V
		80<fo≤170MHz		−0.5	+5.0	
Supply Voltage	Vcc			+2.97	+3.63	V
Current Consumption	Icc	1.5≤fo≤80MHz		—	15	mA
		80<fo≤170MHz		—	30	
Disable Current	I_dis	1.5≤fo≤80MHz		—	10	mA
		80<fo≤170MHz		—	15	μA
Symmetry	SYM	@50% Vcc		45	55	%
Rise/ Fall Time (10% Vcc to 90% Vcc)	tr/ tf	1.5≤fo≤30MHz		—	8	ns
		30<fo≤80MHz		—	5	
		80<fo≤170MHz		—	2.5	
Low Level Output Voltage	VOL			—	10% Vcc	V
High Level Output Voltage	VOH			90% Vcc	—	V
Output Load	L_CMOS	CMOS Output		—	15	pF
Input Voltage Range	VIN			0	+3.3	V
Low Level Input Voltage	VIL			—	30% Vcc	V
High Level Input Voltage	VIH			70% Vcc	—	V
Input Resistance	—	Code ⑥ : D		100	—	k ohm
		Code ⑥ : G or N		5	—	Mohm
Disable Time	t_dis	1.5≤fo≤30MHz		—	100	ns
		30≤fo≤170MHz		—	200	
Enable Time	t_ena	1.5≤fo≤80MHz		—	100	ns
		80<fo≤170MHz		—	2	ms
Start-up Time	t_str	@Minimum operating voltage to be 0 sec.		—	10	ms
Phase Jitter	JPhase	@155.52MHz	BW : 12kHz to 20MHz	—	0.4	ps
Phase Noise	—	@155.52MHz	@10Hz offset	Typ. −70		dBc/ Hz
			@100Hz offset	Typ. −102		
			@1kHz offset	Typ. −128		
			@10kHz offset	Typ. −147		
			@100kHz offset	Typ. −158		
			@1MHz offset	Typ. −160		
			@10MHz offset	Typ. −161		

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)



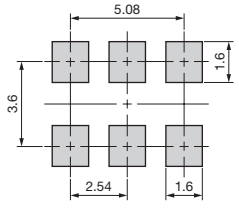
Plating: Ni+Au
Tolerance: ±0.2

Pad Connections	
#1	Vc
#2	INH
#3	Case GND
#4	Output
#5	NC
#6	Vcc

INH Function	
Pad2	Pad4 (Output)
Open	Active
"H" Level	Active
"L" Level	High Z

Recommended Land Pattern

(Unit: mm)



Note: A capacitor of value 0.01μF between Vcc and GND is recommended.

As of March 2018