



Ph Free

RoHS Compliant

### Features

- Built-in Spread Spectrum function
- Miniature ceramic package
- Highly reliable with seam welding
- CMOS output
- Supply voltage  $V_{CC}=3.3V$
- External control pad for Modulation Selectable (For initial testing purpose only)

Table 1

Spread Type			
Center Spread		Down Spread	
Code	Spread %	Code	Spread %
C2	±0.5%	D2	-1.0%
C4	±1.0%	D4	-2.0%
C6	±1.5%	D6	-3.0%
C0*	External Control*	D0*	External Control*

\* For initial testing purpose only

### How to Order

KC5032E 25.0000 C 3 F E C2  
 ① ② ③ ④ ⑤ ⑥ ⑦

- ① Type (5.0×3.2mm SMD)
- ② Output Frequency
- ③ Output Type (CMOS)
- ④ Supply Voltage (3.3V)
- ⑤ Frequency Tolerance (±100ppm)
- ⑥ Symmetry/ Enable Function (45/ 55%, Stand-by)
- ⑦ Spread Type and Spread Percent or Customer Special Model Suffix (See Table 1)

Packaging (Tape & Reel 1000 pcs./ reel)

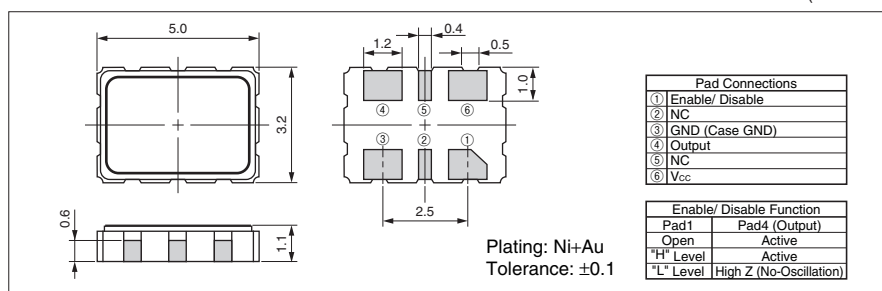
### Specifications

Item	Symbol	Conditions	Min.	Max.	Units	
Output Frequency Range	$f_o$		14.31818	166	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.: -40 to +85°C	-100	+100	$\times 10^{-6}$	
Storage Temperature Range	$T_{stg}$		-55	+125	°C	
Operating Temperature Range	$T_{use}$		-40	+85	°C	
Max. Supply Voltage	—		-0.5	+4.6	V	
Supply Voltage	$V_{CC}$		2.97	3.63	V	
Current Consumption (Maximum Loaded)	$I_{CC}$	$f_o \leq 40MHz$	—	20	mA	
		$40 < f_o \leq 100MHz$	—	25		
		$100 < f_o \leq 166MHz$	—	35		
Stand-by Current	$I_{std}$		—	30	$\mu A$	
Symmetry	SYM	@ 50% $V_{CC}$	45	55	%	
Rise/ Fall Time (10% $V_{CC}$ to 90% $V_{CC}$ Maximum Loaded)	$t_r / t_f$	$14.31818 \leq f_o \leq 40MHz$	—	10	nS	
		$40 < f_o \leq 100MHz$	—	5		
		$100 < f_o \leq 166MHz$	—	3		
Low Level Output Voltage	$V_{OL}$	$I_{OL} = 13mA$ ( $f_o < 40MHz$ ), $I_{OL} = 19mA$ ( $40 \leq f_o < 100MHz$ ) $I_{OL} = 44mA$ ( $100 \leq f_o \leq 166MHz$ )	—	10% $V_{CC}$	V	
High Level Output Voltage	$V_{OH}$	$I_{OH} = -13mA$ ( $f_o < 40MHz$ ), $I_{OH} = -19mA$ ( $40 \leq f_o < 100MHz$ ) $I_{OH} = -44mA$ ( $100 \leq f_o \leq 166MHz$ )	90% $V_{CC}$	—	V	
CMOS Load	$L_{CMOS}$	CMOS Output	—	15	pF	
Input Voltage Range	$V_{IN}$		0	$V_{CC}$	V	
Low Level Input Voltage	$V_{IL}$		—	30% $V_{CC}$	V	
High Level Input Voltage	$V_{IH}$		70% $V_{CC}$	—	V	
Disable Time	$t_{dis}$		—	200	nS	
Enable Time	$t_{ena}$		—	10	mS	
Start-up Time	$t_{str}$	@ Minimum operation voltage to be 0 sec.	—	20	mS	
Peak to Peak Jitter (Cycle to Cycle Jitter)	JPK-PK	Measured with @ 50% $V_{CC}$ 10,000 cyc. min. Lecroy Wavepro 950	$14.31818 \leq f_o < 40MHz$	—	±250	pS
			$40 \leq f_o < 80MHz$	—	±175	
			$80 \leq f_o \leq 166MHz$	—	±150	

Note: All electrical characteristics are defined at the maximum load and operating temperature range.  
 Please contact us for inquiry about operating temperature range, available frequencies and other conditions.

### Dimensions

(Unit: mm)



### Recommended Land Pattern

(Unit: mm)

