

# VC Type Multiplier Voltage Controlled Crystal Oscillator

RoHS Compliant Standard



Actual Size

## FEATURE

1. Typical 7.5 x 5.0 x 1.65mm ceramic SMD package.
2. Tight symmetry (45 to 55%) available.
3. Packing: Tape & Reel, 1000/3000 pcs per Reel, 1~99 pcs per Bulk/Tape.

## ORDERING INFORMATION

V	C	E	M	P	C	J		-	N	F	-	?
VCXO	Package (mm)	Supply Voltage (V)	Tri-State Function	Freq. Stability / Pulling Range (ppm)	Temp. Range (°C)	Output Logic and Symmetry		Dash	Appearance	Lead Free	Dash	Freq. (MHz)
	7.5x5	E: 3.3	M: Multiplier Frequency	M: ±25/±100 P: ±50/±100	I: -10~+60 C: -20~+70 L: -40~+85	CMOS 15pF	J K		N: Normal	F: RoHS Compliant		xx.xxxxxx
						CMOS 50pF	F G					

### Ordering Example: VCEMPCJ-NF-90.000000 MHz

VCXO C-TYPE; V<sub>DD</sub>: 3.3V; Multiplier (PLL) Frequency; Freq. Stability: ±50ppm, Pulling Range: ±100ppm; Temp. Range: -20°C to +70°C. Load: CMOS 15pF, Symmetry: 50±5%; Normal Appearance; RoHS Compliant; Freq. 90.000000MHz.

## FREQ. STABILITY vs. TEMP. RANGE

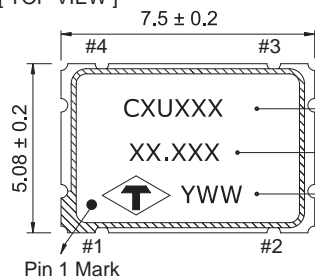
Temp. (°C)	ppm	M: ±25	P: ±50
I	-10~+60	○	○
C	-20~+70	○	○
L	-40~+85	△	○

○: Standard    △: Available (case by case)

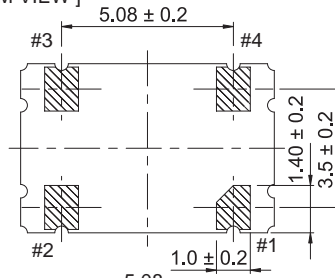
×: Not available

## OUTLINE DRAWING

[ TOP VIEW ]

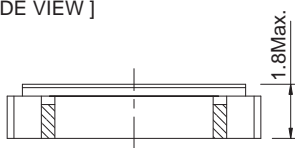


[ BOTTOM VIEW ]

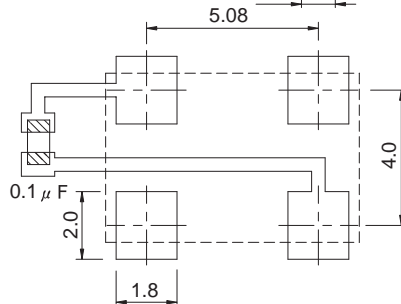


Pin	Function
#1	VCON
#2	GND
#3	OUTPUT
#4	V <sub>DD</sub>

[ SIDE VIEW ]



UNIT : mm



Recommended soldering pattern

## ELECTRICAL SPECIFICATION

Parameter	Min.	Max.	Unit
	3.3		V
Supply Voltage Variation( $V_{DD}$ ) 10%	2.97	3.63	V
Frequency Range	60	200	MHz
Operating Temp. Range	Refer to Ordering Information		°C
Frequency Stability *	Refer to Ordering Information		ppm
Pulling Range	±100	—	ppm
<b>Supply Current</b>			
60MHz $F_o < 160$ MHz	—	40	mA
160MHz $F_o < 200$ MHz	—	50	
<b>Output Level (CMOS)</b>			
Output High (Logic "1")	$V_{DD} - 0.4$	—	V
Output Low (Logic "0")	—	0.4	
<b>Transition Time:Rise/Fall Time*</b>			
60MHz $F_o < 200$ MHz	—	5	nSec
<b>Start Time</b>	—	5	mSec
<b>Absolute Clock Period Jitter</b>	—	150	pSec
<b>Modulation Bandwidth</b>	25	—	KHz
<b>Input Impedance</b>	2	—	MΩ
<b>Storage Temp. Range</b>	-55	125	°C

\*Inclusive of calibration @ 25°C, operating temperature range, input voltage variation, load variation, aging, shock, and vibration.

\*Transition times are measured between 10% and 90% of  $V_{DD}$ , with an output load of 15pF.