

RoHS Compliant Optional

# VF Type Voltage Controlled Crystal Oscillator



## FEATURE

1. Typical 20.4 × 12.8 × 7.8 mm, standard package & 14-Pin dual in line.
2. CMOS circuit TTL/ CMOS compatible.
3. Hermetically sealed metal case.
4. Tight symmetry (45 to 55%) available.
5. Good linearity (<10%).
6. Packing: 50pcs per Tray.

## ORDERING INFORMATION

Select option

VCXO	Package (mm)	Supply Voltage (V)	Freq. Stability /Pulling Range (ppm)	Temp. Range (°C)	Output Logic and Symmetry	Oscillator Mode	Appearance	Lead Free	Dash	Freq. (MHz)
	20.4 x 12.8	Through Hole T : 5.0 E : 3.3 Gull Wing G : 5.0 F : 3.3	M : ±25/±15/±100 G : ±35/±20/±100 P : ±50/±20/±100 R : ±50/±20/±150 T : ±25/±15/±150	C : -20~+70 D : -30~+80 L : -40~+85	50±5% 10TTL 15pF A CMOS 15pF J CMOS 50pF F	-A : AT Fundamental NOT SELECTABLE BY CUSTOMER	N : Normal	F : RoHS Compliant L : Not RoHS Compliant		XX.XXXXXX

V F  U        -

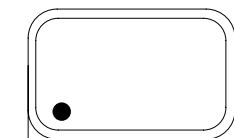
Example VFTUPCJANL-10.000000

VCXO F-TYPE; VDD: 5V; Freq. Stability: ±50ppm, Freq. Tolerance: ±20ppm, Pulling Range: ±100ppm; Temp. Range: -20°C to +70°C; CMOS 15pF, Duty: 50±5%; AT Fundamental; Normal Appearance; Not RoHS Compliant; Freq. 10.000000MHz.

\* Not all combinations of options are available.

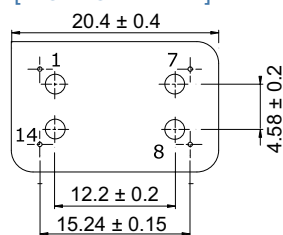
## OUTLINE DRAWING

[ TOP VIEW ]

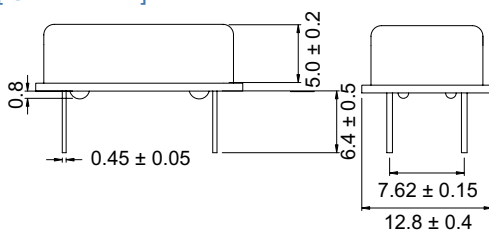


Pin 1 Symbol

[ BOTTOM VIEW ]



[ SIDE VIEW ]



UNIT : mm

Recommended soldering pattern

Pin	Function
#1	VCON
#7	GND
#8	Output
#14	VDD

**FREQ. STABILITY vs. TEMP. RANGE**

Temp.(°C)	Freq Stab/ Tolerance/ Pulling	M: ± 25/ ± 15/ ± 100	G: ± 35/ ± 20/ ± 100	R: ± 50/ ± 20/ ± 150	T: ± 25/ ± 15/ ± 150
C	-20~ +70	△	○	○	△
D	-30~ +80	×	○	○	×
L	-40~ +85	×	○	○	×

○:Standard △:Available (case by case) ×:Not available

**ELECTRICAL SPECIFICATION**

Parameter	Min.		Max.		Uni	
Supply Voltage Variation(V <sub>DD</sub> ) 5%	5.0	3.3	5.0	3.3	V	
Frequency Range	4.75	3.13	5.25	3.47	V	
Operating Temp. Range	2.5				45	MHz
Frequency Stability *	Refer to Ordering Information				°C	
Frequency Stability	Refer to Ordering Information				ppm	
Vs Supply Voltage (±5%) change	-		±3		ppm	
Vs Load (±10%) change	-		±3			
Vs Aging	-		±1		ppm / year	
Pulling Range	±60	±60	±150	±120	ppm	
Control Voltage Range	0.5	0.3	4.5	3.0	V	
Supply Current						
2.5000MHz ≤ Fo < 10.000MHz	-		10	7	mA	
10.000MHz ≤ Fo < 15.000MHz	-		15	10		
15.000MHz ≤ Fo < 26.000MHz	-		20	15		
26.000MHz ≤ Fo < 45.000MHz	-		25	20		
Output Level (TTL/CMOS)						
Output High (Logic "1")	90% V <sub>DD</sub> or 2.4V		-		V	
Output Low (Logic "0")	-		10% V <sub>DD</sub> or 0.4V			
Duty	40%		60%			
Linearity						
Pulling Range ≤ 100ppm	-		10		%	
Pulling Range > 100ppm	-		20	-		
Modulation Bandwidth (BW)	10		-		KHz	
V <sub>c</sub> Input Impedance	50		-		KΩ	
Start Time	-		2		mSec	
Storage Temp. Range	-55		125		°C	

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position.

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