

# OC Type Crystal Oscillator

**RoHS Compliant Standard**

## FEATURE

1. Typical 7.0 x 5.0 x 1.3 mm ceramic SMD package.
2. Tight symmetry (45 to 55 %) available.
3. Packing: Tape & Reel, 1000/3000 pcs per Reel.



Actual Size



## ORDERING INFORMATION

O	C	C	T	D	C	J	A	N	F	-	?
XO	Package (mm)	Supply Voltage (V)	Tri-State Function	Freq. Stability (ppm)	Temp. Range (°C)	Output Logic and Symmetry	Oscillator Mode	Appearance	Lead Free	Dash	Freq. (MHz)
	7 x 5	C: 5 E: 2.8~3.3 J: 2.5 K: 1.8	T: Fixed-Freq with Tri-State	C: ± 20 D: ± 25 G: ± 50 H: ± 100	I: -10~+60 C: -20~+70 L: -40~+85	50±5% TTL TTL 50pF CMOS 15pF CMOS 50pF	"A" E J F -A: AT Fundamental -T: AT 3 <sup>rd</sup> Overtone * NOT SELECTABLE BY CUSTOMER	N: Normal	F: RoHS Compliant		XX.XXXXXX

\*Not available, if frequency > 70MHz and V<sub>DD</sub>=5V

### Ordering Example: OCCTDCJANF-14.318180 MHz

XO C-TYPE; V<sub>DD</sub>: 5V; Fixed-Freq. with Tri-State; Freq. Stability :±25ppm; Temp. Range: -20°C to +70°C; Load :CMOS 15pF, Symmetry :50±5%; AT Fundamental; Normal Appearance; RoHS Compliant; Freq. 14.318180MHz.

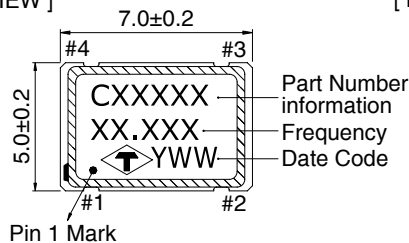
## FREQ. STABILITY vs. TEMP. RANGE

Temp(°C)	ppm	C: ±20	D: ±25	G: ±50
I	-10~+60	○	○	○
C	-20~+70	△	○	○
L	-40~+85	×	△	○

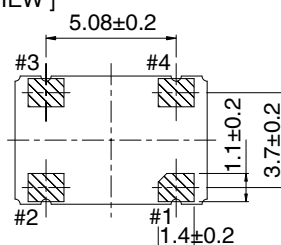
○:Standard △:Available (case by case) ×:Not available

## OUTLINE DRAWING

[ TOP VIEW ]

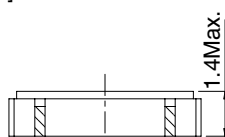


[ BOTTOM VIEW ]

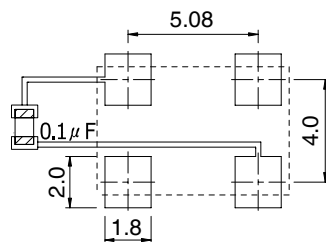


Pin	Function
#1	Tri-State
#2	GND
#3	Output
#4	V <sub>DD</sub>

[ SIDE VIEW ]



UNIT:mm



Recommended soldering pattern

## ELECTRICAL SPECIFICATION

Parameter	Min.				Max.				Unit
	5.0	3.3	2.5	1.8	5.0	3.3	2.5	1.8	V
<b>Supply Voltage Variation(V<sub>DD</sub>) 10%</b>	4.5	2.97	2.25	1.62	5.5	3.63	2.75	1.98	V
<b>Frequency Range</b>	0.012			0.048	110	133	133	125	MHz
<b>Operating Temp. Range</b>	Refer to Ordering Information								°C
<b>Frequency Stability *</b>	Refer to Ordering Information								ppm
<b>Supply Current</b>									
0.012MHz ≤ Fo < 0.048MHz	-				7	5	5	-	mA
0.048MHz ≤ Fo < 1.5MHz	-				7	5	5	5	
1.5MHz ≤ Fo < 20MHz	-				10	7	7	5	
20MHz ≤ Fo < 50MHz	-				30	20	15	15	
50MHz ≤ Fo < 70MHz	-				40	30	20	15	
70MHz ≤ Fo < 125MHz	-				40	30	20	20	
125MHz ≤ Fo ≤ 133MHz	-				-	40	30	-	
<b>Output Level (CMOS)</b>									
Output High (Logic "1")	90% V <sub>DD</sub>				-				V
Output Low (Logic "0")	-				10% V <sub>DD</sub>				
<b>Transition Time: Rise/Fall Time<sup>+</sup></b>									
0.012MHz ≤ Fo < 1.0MHz	-				200	200	200	-	nSec
1.0MHz ≤ Fo < 20MHz	-				8	10	10	10	
20MHz ≤ Fo < 50MHz	-				5	6	6	6	
50MHz ≤ Fo < 70MHz	-				2	3	3	3	
70MHz ≤ Fo < 125MHz	-				2	3	3	3	
125MHz ≤ Fo ≤ 133MHz	-				-	3	3	-	
<b>Start Time</b>	-				8				mSec
<b>Tri-State (Input to Pin 1)</b>									
Output Active	4.0	2.0	1.75	1.26	-				V
Output in High Impedance State	-				0.8	0.5	0.5	0.5	
<b>Absolute Clock Period Jitter</b>	-				40				pSec
<b>Standby Current</b>	-				10				μA
<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.

<sup>+</sup> Transition times are measured between 10% and 90% of V<sub>DD</sub>, with an output load of 15pF.