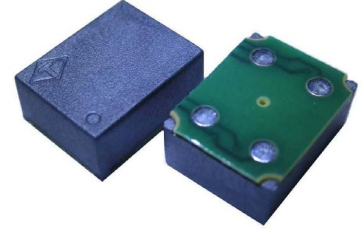


## Type NN (10.0 ~ 40.0)MHz

- ASIC technology
- Dimension (9.7 x 7.5)mm, miniaturized 4-Pad SMD package
- Low Power Consumption.
- $\pm 20$ ppb stability over -40 ~ 85°C
- Stratum 3 (Overall  $\pm 4.6$  ppm including 20 years aging)



### Electrical Specification

Parameter	Min.	Typ.	Max.	Unit	Test Conditions & Notes	
Output Frequency	10		40	MHz	Available frequency range is from 10MHz to 40MHz. Standard Frequencies :10, 12.8, 19.2, 20, 25 and 30.72MHz.	
Wave Form		Rectangular Clipped Sine			Please contact us for detail information	
Level						
"1"Level	2.4			V		
"0"Level			0.4			
Duty cycle	45	50	55	%	@+1.65 V	
	0.8			Vp-p		
Load(Rectangular/Clipped Sine)	15pF / 10Kohm//10pF					
Spurious			-60	dBc		
Frequency Stability	Ambient	-20	+20	ppb	-40 °C to +85 °C, referenced to (Fmax + Fmin)/2 Refer to Table : Freq.Stability vs Temp. Range. □	
	Aging					
	Daily	-3.0	+3.0	ppb	after 30 days continues operation	
	Yearly	-0.6	+0.6	ppm		
	10 years	-3.0	+3.0	ppm		
	Voltage	-5	+5	ppb	$\pm 5\%$ Change	
	Warm-up	-0.1	+0.1	ppm	In 5 minutes @ +25 °C, referenced to 1 hour	
Phase Noise (20MHz)		-98	-92	dBc/Hz □	@10Hz	
		-126	-120		@100Hz	
		-145	-140		@1KHz	
		-152	-150		@10KHz	
Electrical Frequency Adjustment					VCO @ 0V	
Range			-5.0	ppm	5.0 VCO @ 3.3V	
	5.0					
Control	0	1.65	3.3	V		
Slope		Positive				
Input Impedance	100		Kohm			
Input Power	Voltage	3.135	3.3	3.465	V	5.0V Input voltage is available. Please contact us for detail information.
	Current			350	mA	@ turn on
	Steady state		0.3	0.4	W	@ +25 °C

### FREQ. STBAILITY vs. TEMP. RANGE.

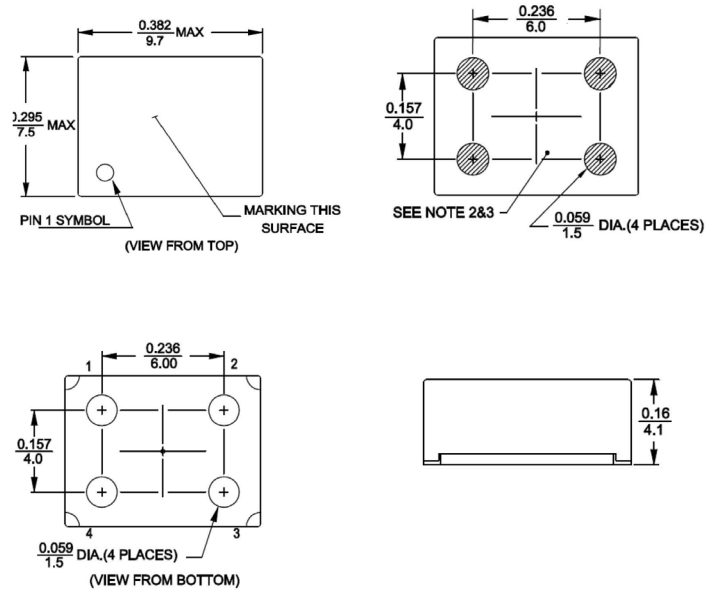
Temp (°C)	ppb				
	$\pm 5$	$\pm 10$	$\pm 20$	$\pm 30$	$\pm 50$
-20 ~ +70	▲	X	X	X	X
-40 ~ +85	O	▲	X	X	X

X : Available, O : Not available, ▲ : Conditional

Ordering Information

<b>EXAMPLE</b>	Type NN OCXO, 10.0MHz, +3.3V, ± 20ppb (-20 ~ +70)°C
<b>TFC PART No.</b>	NN 10.0M E C C
<b>NN</b>	Type NN OCXO
<b>E</b>	Supply voltage: E=+3.3Vd.c.
<b>C</b>	frequency stability= ±20ppb
<b>C</b>	Temp.range: C= (-20 ~ + 70)°C
<b>Options</b>	
<b>supply voltage</b>	E:3.3V, T:5V
<b>frequency Stability (ppb)</b>	A: ±5, B: ±10, C: ±20, E: ±30, E: ±50
<b>temperature range</b>	C: (-20 ~ +70)°C D: (-30 ~ +70)°C L: (-40 ~ +70)°C

NN dimensions(mm)



PIN CONNECTIONS	
PIN	FUNCTION
1 (See Note 1)	VCO INPUT or NOT CONNECTED
2	0 VOLTS & CASE
3	R. F. OUTPUT
4	+VDC

**Note 1.** If the specification does not specify parameters for PIN 1 then PIN 1 must remain unconnected.

**Note 2.** Copper in this area should be kept to a minimum to reduce heat loss from OCXO.

**Note 3.** Bottom side reflow is forbidden unless specified in the oscillator specification.

**Note 4.** Aqueous cleaning is FORBIDDEN.

**Note 5.** Test Conditions: A 0.1uF and 10uF X7R decoupling capacitor is required close to the unit.