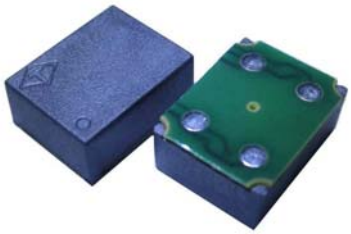
type NN smd ocxo (9.5x7.5)mm

April 20th 2018

Type NN
(10.0 ~ 40.0)MHz



- ASIC technology
- Dimension 9.7 x 7.5 mm, miniaturized 4-Pad SMD package
- Low Power Consumption.
- ±20 ppb stability over -40 to 85°C
- Stratum 3 (Overall ±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	Rectangular	2.4			V	
"0"Level	Rectangular			0.4	V	
Duty cycle	Rectangular	45	50	55	%	@+1.65 V
Clipped Sine		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	±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
Phase Noise (20MHz)			-126	-120	dBc/Hz	@100Hz
Phase Noise (20MHz)			-145	-140	dBc/Hz	@1KHz
Phase Noise (20MHz)			-152	-150	dBc/Hz	@10KHz
Electrical Frequency Adjustment					ppm	VCO @ 0V
	Range			-5.0	ppm	5.0 VCO @ 3.3V
	Range	5.0			ppm	5.0 VCO @ 3.3V
	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.

ppb / Temp (°C)	±5	±10	±20	±30	±50
-20 ~ +70	▲	x	x	x	x
-40 ~ +85	0	▲	x	x	x

X : Available, 0 : Not available, ▲: Conditional

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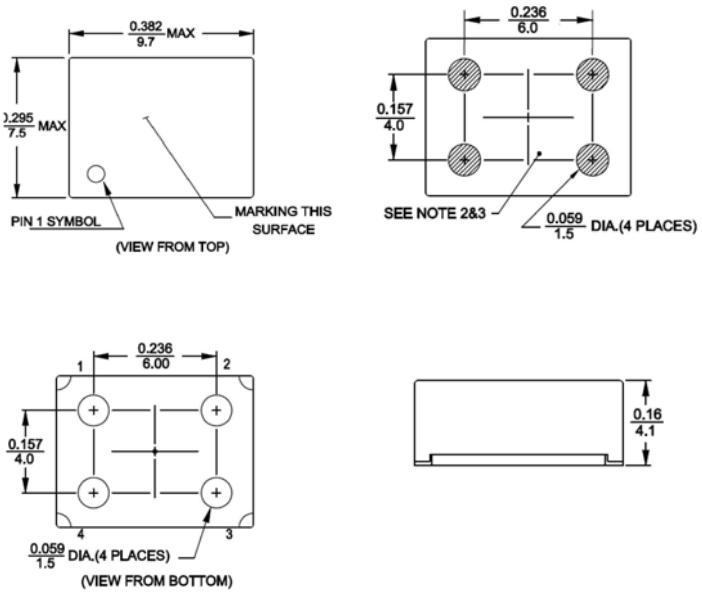
type NN smd OCXO (9.5x7.5)mm

April 20th 2018

Ordering Information

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

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