

ECOC-9775 LVC MOS SMD OCXO. The 9.7 x 7.5 x 5.65 mm package is ideal for 5G, Small Cells, SyncE and IEEE 1588 applications.

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OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

ECOC-9775



- LVC MOS OCXO
- 9.7x7.5 mm Footprint
- PbFree/RoHS Compliant
- Lead Finish Au

Note 1: Time needed for frequency to be within ± 50 ppb reference to frequency after 1 hour, at $+25^{\circ}\text{C}$

Note 2: At time of shipment, reference to nominal frequency at $+25^{\circ}\text{C} \pm 2^{\circ}\text{C}$

Note 3: After 1 hour recovery at $+25^{\circ}\text{C}$

*Aging
Daily ± 2 ppb Typ
1 st Year ± 0.8 ppm Max.
10 Years ± 2 ppm Max.

*After 30 days of operation

ECOC-9775					
Parameters	MIN	TYP	MAX	Units	Conditions
Frequency Range	10.000		48.000	MHz	
Input Voltage	+3.135	+3.3	+3.465	VDC	
Current Consumption @ $+25^{\circ}\text{C}$			750	mA	During Warm up
			200	mA	At steady state
Warm up Time			3	Min	Note 1:
Initial Frequency Tolerance			± 500	ppb	@ $+25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ Note 2:
Start-up Time			200	msec	
Reflow shift	-1		+1	ppm	Note 3:
Frequency Stability			± 20	ppb	Vs. Temp ($-40 \sim +85^{\circ}\text{C}$) DN Opt
		± 10		ppb	Vcc $\pm 2\%$
		± 10		ppb	Vs. Load Change ($\pm 5\%$)
Frequency Slope (In still air)			± 2	Ppb/ $^{\circ}\text{C}$	Temp ramp rate $0.5^{\circ}\text{C}/\text{Min}$.
Output Load		15		pF	LVC MOS
Output Voltage (VOH)	2.97			V	
Output Voltage (VOL)			0.3	V	
Rise/Fall Time			2	nS	
Duty Cycle	45		55	%	
Phase Noise @ 10.000 MHz		-85		dBc/Hz	@ 1 Hz Offset
		-117		dBc/Hz	@ 10 Hz Offset
		-139		dBc/Hz	@ 100 Hz Offset
		-156		dBc/Hz	@ 1 KHz Offset
		-162		dBc/Hz	@ 10 KHz Offset
		-163		dBc/Hz	@ 100 KHz Offset
		-164		dBc/Hz	@ 5 MHz Offset
Allan deviation (at $+25^{\circ}\text{C}$)		7.0		e-11	$\tau=1.0\text{s}$
ECOC-9775-VC					VC-OCXO Option
Control Voltage	+0.0	+1.65	+3.35	V	Input Impedance $100\text{k}\Omega$ Min
Pullability	± 2			ppm	Positive Slope $\leq 10\%$ Linearity
Operating Temperature	-40		+85	$^{\circ}\text{C}$	* N Option
Storage Temperature	-55		+95	$^{\circ}\text{C}$	

Part Numbering Guide: Example ECOC-9775-10.000-DN-TR

Series	-	Frequency	-	Stability	-	Temperature	-	Packaging
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ECOC-9775 = OCXO
ECOC-9775-VC = VC-OCXO

10.000 MHz
See Page 2
Developed
Frequencies

D= ± 20 ppb
C= ± 25 ppb
B= ± 50 ppb

M= $-20 \sim +70^{\circ}\text{C}$
Y= $-30 \sim +85^{\circ}\text{C}$
N= $-40 \sim +85^{\circ}\text{C}$

TR = Tape & Reel
(500/Reel)

Package Dimensions (mm)

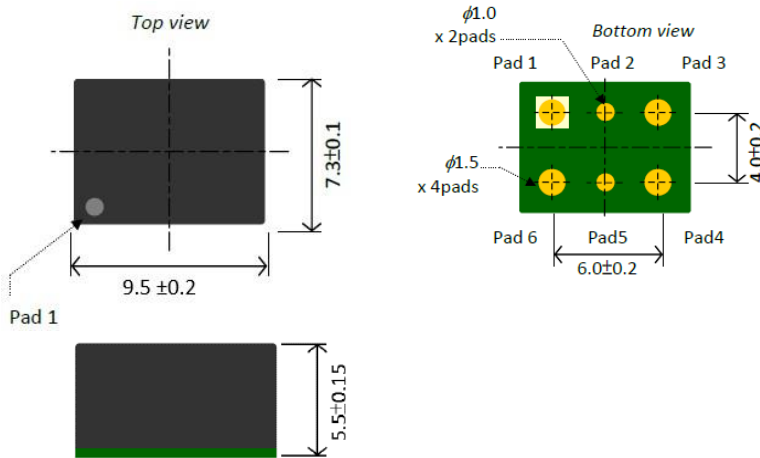


Figure 1) Top, Side, and Bottom views

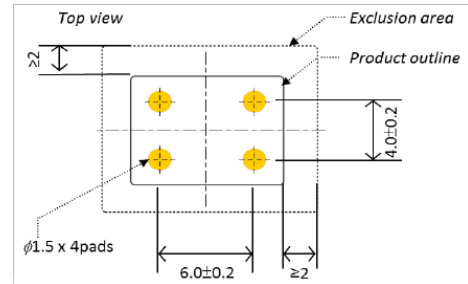


Figure 2) Land Pattern

ECOC-9775	
Pin Connections	
#1	NC
#2	DNC
#3	GND
#4	Output
#5	DNC
#6	Vcc

ECOC-9775-VC	
Pin Connections	
#1	Voltage Control
#2	DNC
#3	GND
#4	Output
#5	DNC
#6	Vcc

Frequency (MHz)
10.000
19.440
20.000
25.000
30.720
38.880
48.000

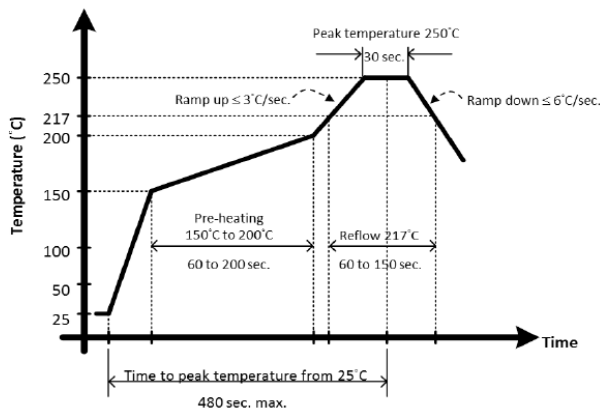


Figure 3) Suggested Reflow Profile

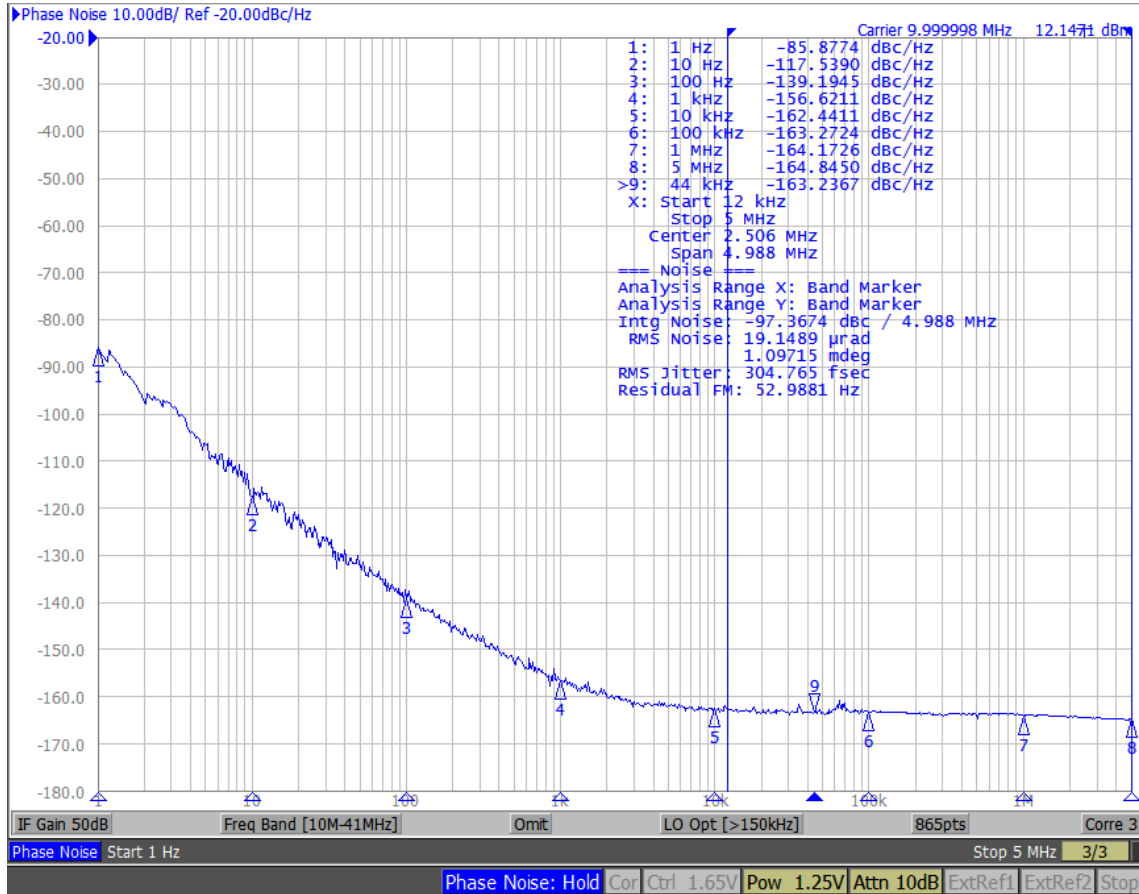


Figure 4) Typical Phase Noise Plot (10 MHz)

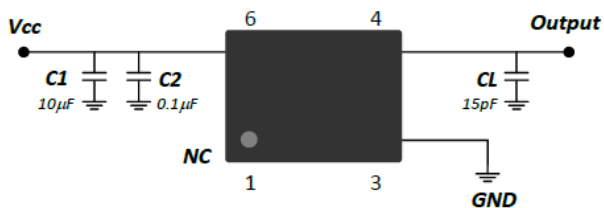


Figure 5) Test Circuit

External components:

Name	Function
C1	AC Noise Bypass for Vcc
C2	AC Noise Bypass for Vcc
CL	Load Capacitance

Note: Bypass capacitor should be placed.