

ECOC-7050 LVC MOS SMD OCXO. The 7.0 x 5.0 x 3.3 mm package is ideal for 5G, Small Cells, SyncE and IEEE 1588 applications.

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OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

ECOC-7050



- LVC MOS OCXO
- 7.0 x 5.0 mm Footprint
- PbFree/RoHS Compliant
- Lead Finish Au

Note 1: Time needed for frequency to be within ± 25 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 ± 3 ppb Typ

1st Year ± 1 ppm Max.

10 Years ± 2 ppm Max.

*After 30 days of operation

ECOC-7050					
Parameters	MIN	TYP	MAX	Units	Conditions
Frequency Range	10.000		50.000	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			1	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	-0.5		+0.5	ppm	Note 3:
Frequency Stability			± 50	ppb	Vs. Temp ($-40 \sim +85^{\circ}\text{C}$) BN Opt
		± 10		ppb	Vcc $\pm 2\%$
		± 10		ppb	Vs. Load Change ($\pm 5\%$)
Frequency Slope (In still air)			± 3	Ppb/ $^{\circ}\text{C}$	Temp ramp rate $1^{\circ}\text{C}/\text{Min}$.
Output Load		15		pF	LVC MOS
Output Voltage (VOH)	90% Vcc			V	
Output Voltage (VOL)			10% Vcc	V	
Rise/Fall Time			2	nS	
Duty Cycle	45		55	%	
Phase Noise @ 10.000 MHz		-76		dBc/Hz	@ 1 Hz Offset
		-108		dBc/Hz	@ 10 Hz Offset
		-131		dBc/Hz	@ 100 Hz Offset
		-149		dBc/Hz	@ 1 KHz Offset
		-155		dBc/Hz	@ 10 KHz Offset
		-158		dBc/Hz	@ 100 KHz Offset
		-159		dBc/Hz	@ 1 MHz Offset
Allan deviation (at $+25^{\circ}\text{C}$)		2.0	7.0	e-11	$\tau=1.0\text{s}$
ECOC-9775-VC					VC-OCXO Option
Control Voltage	+0.0	+1.65	+3.3	V	Input Impedance $100\text{k}\Omega$ Min
Pulling Range	± 3.6		± 5	ppm	Positive Slope $\leq 3\%$ Linearity
Operating Temperature	-40		+85	$^{\circ}\text{C}$	* N Option
Storage Temperature	-55		+95	$^{\circ}\text{C}$	

Part Numbering Guide: Example ECOC-7050-10.000-BN-TR

Series

-

Frequency

-

Stability

Temperature

Packaging

ECOC-7050 = OCXO
ECOC-7050-VC = VC-OCXO

10.000 MHz

See Page 2
Developed
Frequencies

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)

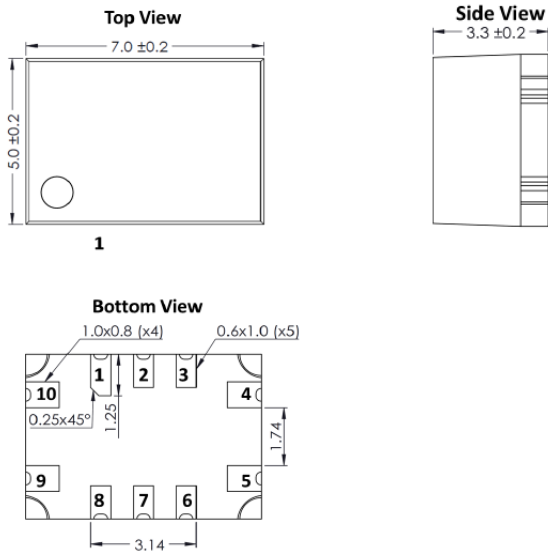


Figure 1) Top, Side, and Bottom views

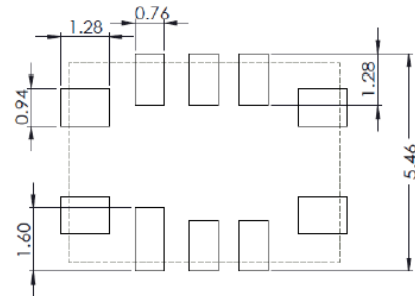


Figure 2) Land Pattern

ECOC-7050	
Pin Connections	
1,2,3	DNC
4	GND
5	Output
6,7,8	DNC
9	Vcc
10	DNC

ECOC-7050-VC	
Pin Connections	
1	Voltage Control
2,3	DNC
4	GND
5	Output
6,7,8	DNC
9	Vcc
10	DNC

Frequency (MHz)
10.000
19.440
20.000
38.880

Developed Frequencies

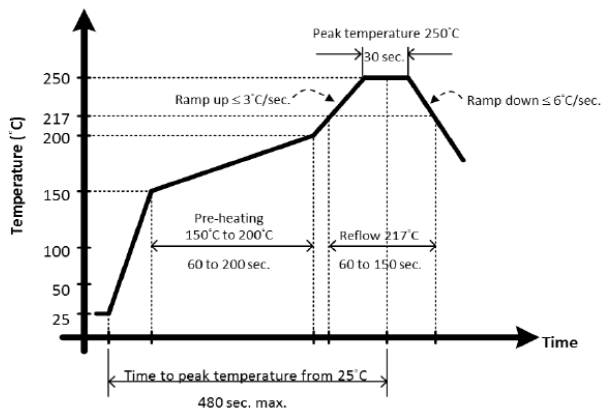


Figure 3) Suggested Reflow Profile

10.000 Mhz	1 Hz	-76	dBc/Hz
	10 Hz	-108	dBc/Hz
	100 Hz	-131	dBc/Hz
	1 kHz	-149	dBc/Hz
	10 kHz	-155	dBc/Hz
	100 kHz	-158	dBc/Hz
	1 MHz	-159	dBc/Hz
19.44 Mhz	1 Hz	-73	dBc/Hz
	10 Hz	-104	dBc/Hz
	100 Hz	-126	dBc/Hz
	1 kHz	-142	dBc/Hz
	10 kHz	-155	dBc/Hz
	100 kHz	-158	dBc/Hz
	1 MHz	-159	dBc/Hz
20.000 Mhz	1 Hz	-71	dBc/Hz
	10 Hz	-102	dBc/Hz
	100 Hz	-120	dBc/Hz
	1 kHz	-142	dBc/Hz
	10 kHz	-155	dBc/Hz
	100 kHz	-158	dBc/Hz
	1 MHz	-159	dBc/Hz
38.88 Mhz	1 Hz	-69	dBc/Hz
	10 Hz	-101	dBc/Hz
	100 Hz	-122	dBc/Hz
	1 kHz	-141	dBc/Hz
	10 kHz	-155	dBc/Hz
	100 kHz	-158	dBc/Hz
	1 MHz	-159	dBc/Hz

Figure 4) Typical Phase Noise

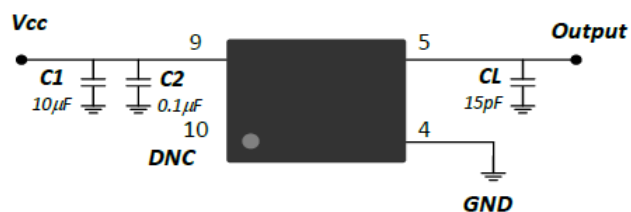


Figure 5) Test Circuit

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.

Mouser Electronics

Authorized Distributor

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[ECS:](#)

[ECOC-7050-19.440-BN-TR](#) [ECOC-7050-38.880-BN-TR](#) [ECOC-7050-10.000-BN-TR](#) [ECOC-7050-20.000-BN-TR](#)