ECOC-7050
LVCMOS OCXO

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

Request a Sample

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

ECOC-7050



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

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°C			750	mA	During Warm up
			200	mA	At steady state
Warm up Time			1	Min	Note 1:
Initial Frequency Tolerance			±500	ppb	@ +25°C ±2°C Note 2:
Start-up Time			200	msec	
Reflow shift	-0.5		+0.5	ppm	Note 3:
Frequency Stability			±50	ppb	Vs. Temp (-40 ~ +85°C) BN Opt
		±10		ppb	Vcc ±2%
		±10		ppb	Vs. Load Change (±5%)
Frequency Slope (In still air)			±3	Ppb/°C	Temp ramp rate 1°C/Min.
Output Load		15		pF	LVCMOS
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°C)		2.0	7.0	e-11	τ=1.0s
ECOC-9775-VC					VC-OCXO Option
Control Voltage	+0.0	+1.65	+3.3	V	Input Impedance 100kΩ Min
Pulling Range	±3.6		±5	ppm	Positive Slope ≤3% Linearity
Operating Temperature	-40		+85	°C	* N Option
Storage Temperature	-55		+95	°C	

Note 1: Time needed for frequency to be within ±25 ppb reference to frequency after 1 hour, at +25°C

Note 2: At time of shipment, reference to nominal frequency at +25°C ±2°C

Note 3: After 1 hour recovery at +25°C

*Aging
Daily ±3 ppb Typ
1st Year ±1 ppm Max.
10 Years ±2 ppm Max.

*After 30 days of operation

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 ~ +70°C Y = -30 ~ +85°C N = -40 ~ +85°C	TR = Tape & Reel (500/Reel)

Package Dimensions (mm)

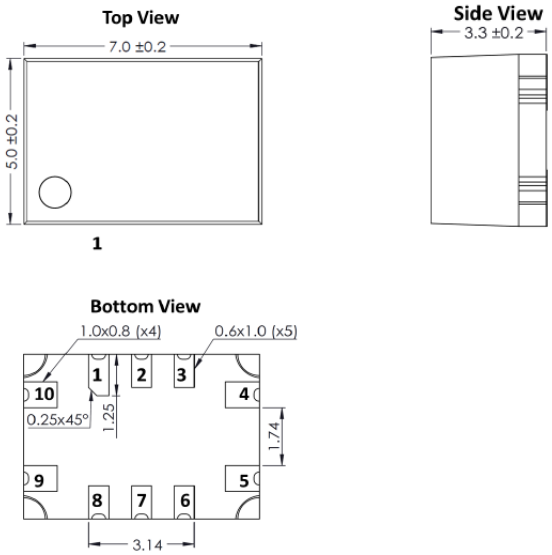


Figure 1) *Top, Side, and Bottom views*

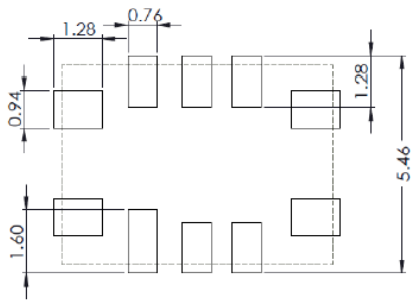


Figure 2) *Land Pattern*

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
40.000
50.000

Developed Frequencies

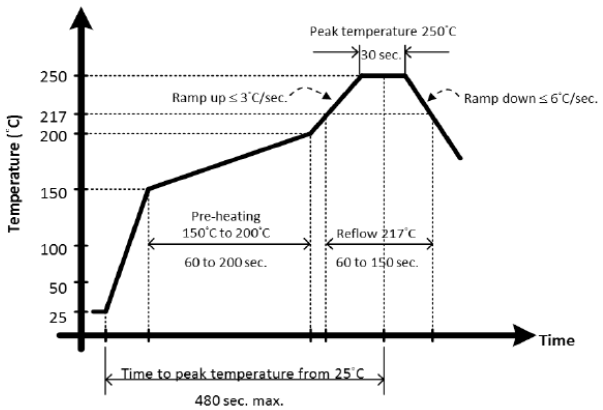


Figure 3) *Suggested Reflow Profile*

Figure 4) *Typical Phase Noise*

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
40.000 MHz	1 Hz	-70	dBc/Hz
	10 Hz	-101	dBc/Hz
	100 Hz	-125	dBc/Hz
	1 kHz	-145	dBc/Hz
	10 kHz	-158	dBc/Hz
	100 kHz	-159	dBc/Hz
	1 MHz	-160	dBc/Hz
50.000 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

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.

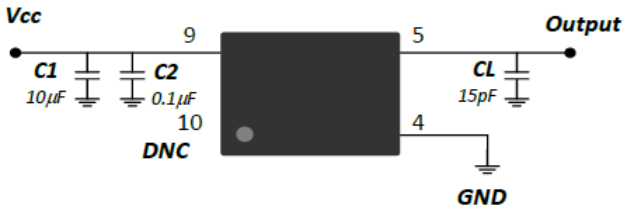


Figure 5) *Test Circuit*