

The ECS-3225MVLC is a miniature SMD low current CMOS Oscillator with MultiVolt™ capability of 1.6 ~ 3.6 V. The 3.2 x 2.5 x 1.0 mm ceramic package is ideal for LoRa WAN, Low Power/Portable, Industrial and IoT applications.

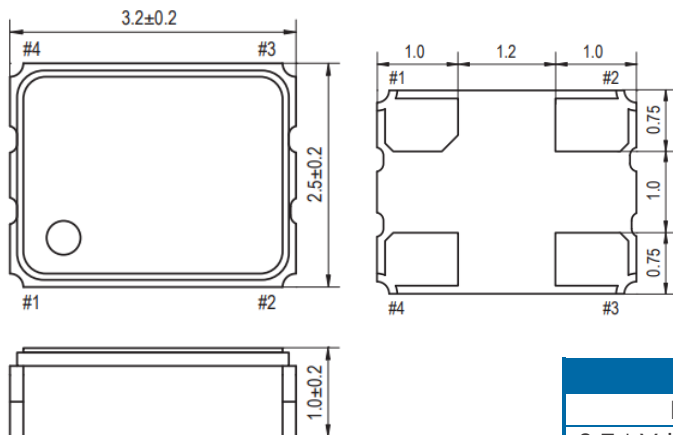
OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS



- 3.2 x 2.5 mm Footprint
- Low Current
- Extended Temp Range
- Wide Supply Voltage
- Low Jitter
- Compatible with 1.8V, 2.5V or 3.3V Power Supply

PARAMETERS	CONDITIONS	ECS-3225MVLC			UNITS
		MIN	TYP	MAX	
Frequency Range		1.000		75.000	MHz
* Frequency Stability	-40 ~ +85°C (CN Opt)			±25	ppm
Supply Voltage		1.6		3.6	V
Output Load	CMOS			15	pF
Output voltage Level	VOL: 10% Vdd max. / VOH: 90% Vdd min. V DC				
Rise & Fall time	10% Vdd – 90% Vdd			7	ns
Start Up Time	@ 90% Vdd			5	mS
Enable/Disable Time				150	µs
Phase Jitter	12 kHz to 20 MHz, F=50 MHz		150		fS
Duty Cycle	@ ½ Vdd			45/55	%
Standby Current				10	µA
Frequency Aging	@ +25°C, 1 st Year			±3	ppm
Operating Temp*		-40		+85	°C
Storage Temp		-55		+125	°C

DIMENSIONS (mm)



CURRENT CONSUMPTION (No Load) mA Max

FREQ.	≤ 20 MHz	≤ 40 MHz	≤ 50 MHz	≤ 60 MHz
+1.8V	1.5	1.8	2.1	2.4
+2.5V	1.6	2.0	2.4	2.8
+3.3V	1.8	2.2	2.6	3.0

PAD CONNECTIONS

1	Tri-state
2	Gnd
3	Output
4	Vdd

Standby Function

Pin 1	Output
0.7 * Vdd Min or NC	Active
0.3 * Vdd Max.	High Impedance

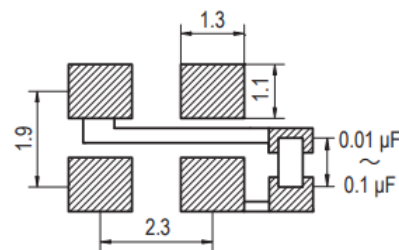


Figure 1) Top, Side, and Bottom views

Figure 2) Suggested Land

PART NUMBERING GUIDE: Example ECS-3225MVLC-250-CN-TR

ECS	-	SERIES	-	FREQUENCY ABBREVIATION	-	* STABILITY	-	TEMP RANGE	-	PACKAGING
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ECS

3225MVLC
3.2 x 2.5 mm
MultiVolt™ Oscillator
Low Current

250 = 25.000 MHz
See Developed
Frequencies Pg.2

A = ±100 ppm
B = ±50 ppm
± C = ±25 ppm
± D = ±20 ppm

M = -20 ~ +70°C
N = -40 ~ +85°C
P = -40 ~ +105°C
S = -40 ~ +125°C

-TR = Tape & Reel
3K/Reel

‡ Contact ECS for availability over extended temp.

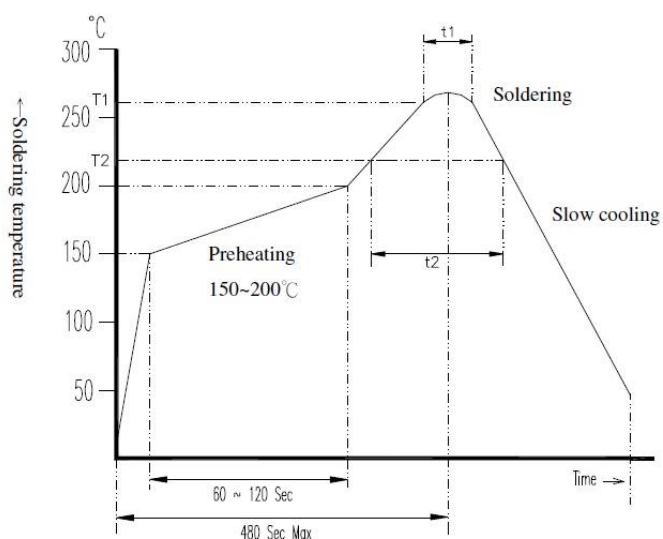
* Frequency Stability includes initial tolerance, temperature, supply voltage and load change and reflow.

Rev. 2022

DEVELOPED FREQUENCIES

FREQUENCY MHz	CODE
1.8432	018
4.000	040
7.3728	073
8.000	080
10.000	100
11.0592	110.5
12.000	120
14.7456	147.4
16.000	160
18.432	184
20.000	200

FREQUENCY MHz	CODE
24.000	240
24.576	245.7
25.000	250
26.000	260
27.000	270
30.000	300
32.000	320
33.3333	333.3
40.000	400
48.000	480
50.000	500



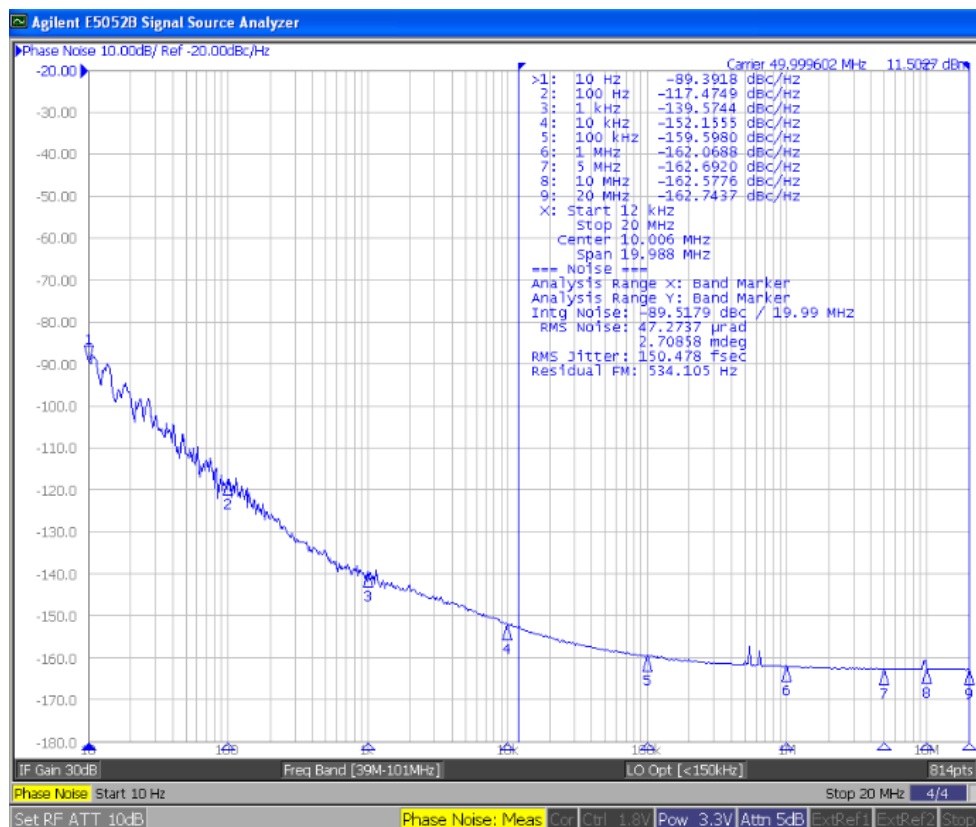
SOLDER PROFILE

Peak solder Temp +260°C ±5°C
10 ±5 Sec Max.
2 Cycles Max.
MSL 1, Lead Finish Au

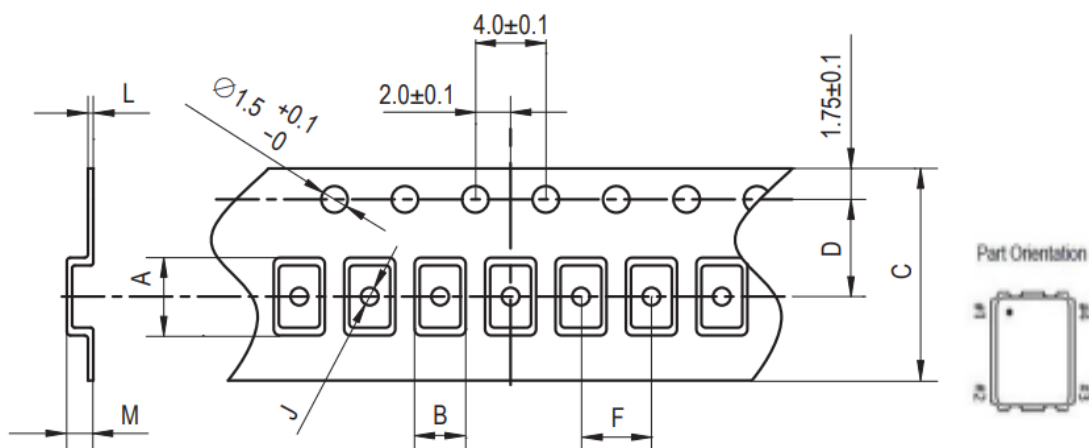
Application / Temperature Time	T1 / t1	T2 / t2
Lead Free	260 ± 5°C / 10 ± 5 Sec Max.	217°C Min / 60 ~ 150 Sec
Non-Lead Free	260 ± 5°C / 10 ± 5 Sec Max.	183°C Min / 60 ~ 150 Sec

Figure 3) Suggested Reflow Profile

Typical Phase Noise



POCKET TAPE DIMENSIONS (mm)



A	B	C	D	F	J	L	M	Reel Dia.
3.5	2.8	8.0	3.5	4.0	1.0	0.25	1.4	180