ECS-2520MVLC

SMD MultiVolt™ Low Current Crystal Oscillator

The ECS-2520MVLC is a miniature SMD low current CMOS Oscillator with MultiVolt™ capability of 1.6 ~ 3.6 V. The 2.5 x 2.0 x 0.8 mm ceramic package is ideal for LoRa WAN, Low Power/Portable, Industrial and IoT applications.

Request a Sample

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

ECS-2520MVLC SMD XO



- 2.5 x 2.0 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-2520MVLC			UNITS
		MIN	TYP	MAX	
Frequency Range		1.000		75.000	MHz
* Frequency Stability	-40 ~ +85°C (BN Opt)			±50	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
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, 1st Year			±3	ppm
Operating Temp*		-40		+85	°C
Storage Temp		-55		+125	°C

DIMENSIONS (mm)

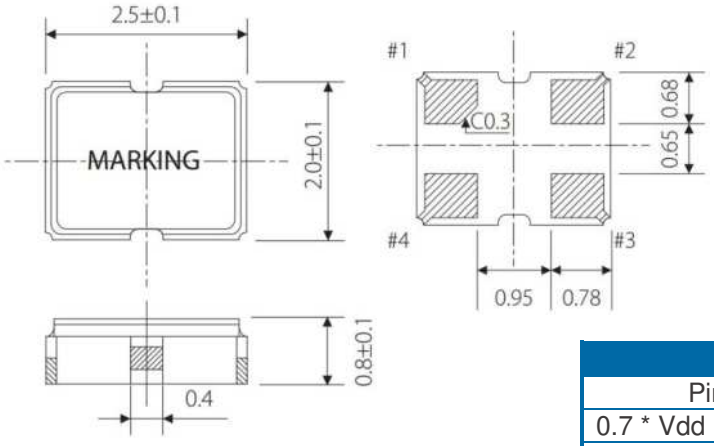


Figure 1) *Top, Side, and Bottom views*

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

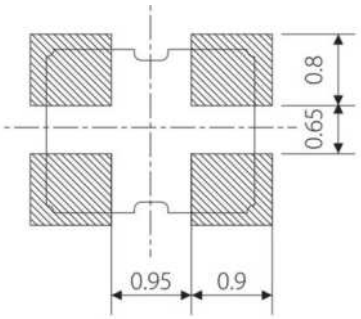


Figure 2) *Suggested Land*

PART NUMBERING GUIDE: Example ECS-2520MVLC-250-BN-TR

ECS	-	SERIES	FREQUENCY ABBREVIATION	-	* STABILITY	TEMP RANGE	-	PACKAGING
ECS		2520MVLC 2.5 x 2.0 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 = 1K/Reel -TR3 = 3K/Reel Qty/Reel

‡ Contact ECS for availability over extended temp.

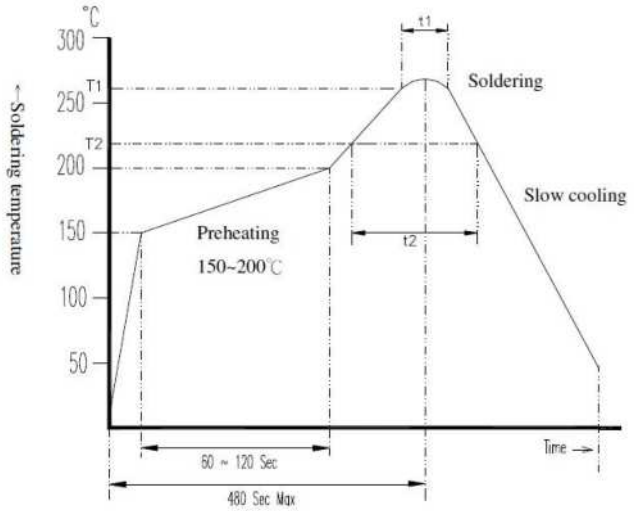
* Frequency Stability includes initial tolerance, temperature, supply voltage and load change and reflow.

Rev. 2022

DEVELOPED FREQUENCIES

FREQUENCY MHz	CODE
1.000	010
1.8432	018
2.000	020
2.048	020.48
3.6864	036
4.000	040
4.096	041
4.9152	049
7.3728	073
8.000	080
8.192	081.92
10.000	100
12.000	120
12.288	122.8
13.560	135.6
14.31818	143
14.7456	147.4
16.000	160
16.384	163

FREQUENCY MHz	CODE
19.200	192
20.000	200
22.5792	225.792
24.000	240
24.576	245.7
25.000	250
26.000	260
27.000	270
27.120	271.2
30.000	300
32.000	320
33.3333	333.3
40.000	400
48.000	480
50.000	500
52.000	520
54.000	540
60.000	600

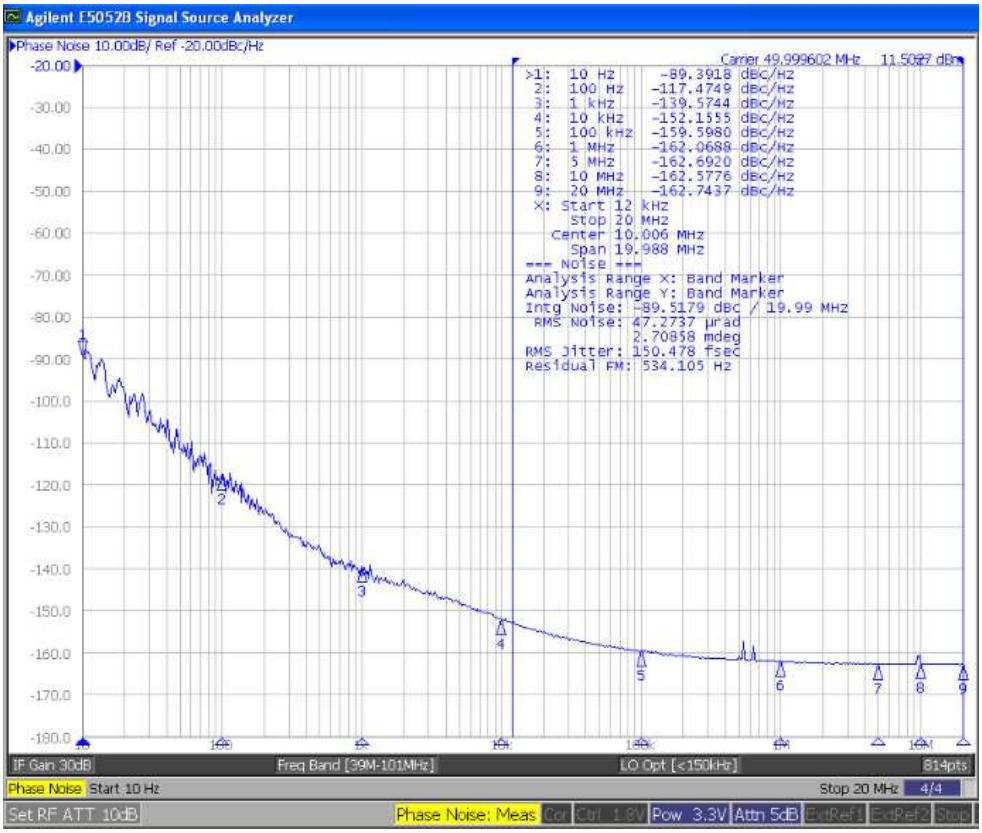


SOLDER PROFILE
Peak solder Temp +260°C ±5°C 10 ±5 Sec Max.
2 Cycles Max.
MSL 1, Lead Finish Au

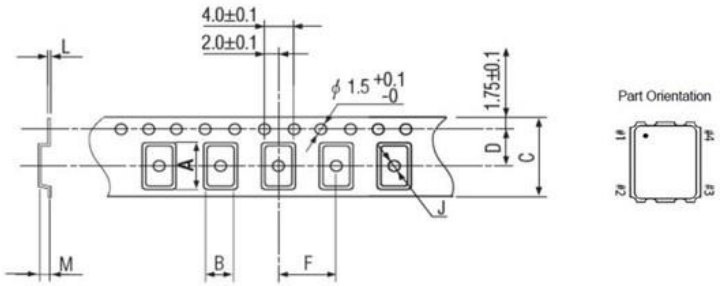
Application / Temperature Time	T1 / t1	T2 / t2
Lead Free	260 ± 5°C / 10 ± 5 See Max.	217°C Min / 60 ~ 150 Sec
Non-Lead Free	260 ± 5°C / 10 ± 5 See Max.	183°C Min / 60 ~ 150 Sec

Figure 3) *Suggested Reflow Profile*

Typical Phase Noise



POCKET TAPE DIMENSIONS (mm)



A	B	C	D	F	J	L	M	Reel Dia.
2.8	2.3	8.0	3.5	4.0	1.0	0.25	1.1	180