ECS-2520MVQ

SMD MultiVolt™ Crystal Oscillator

RoHS COMPLIANT

The ECS-2520MVQ is a miniature SMD HCMOS 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 Automotive applications.

Request a Sample

ECS INC INTERNATIONAL®

ECS-2520MVQ SMD XO

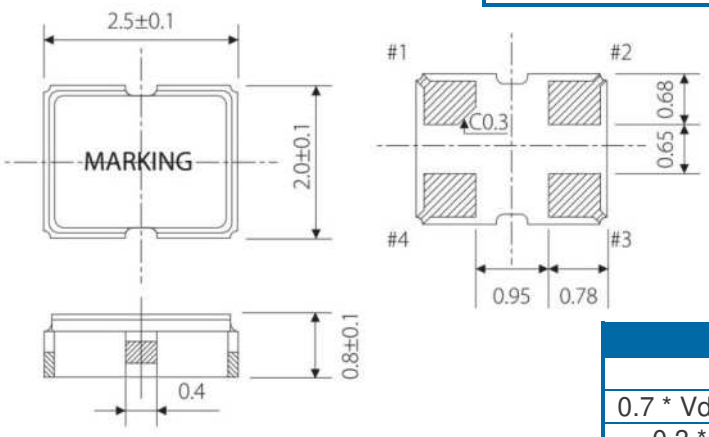


- 2.5 x 2.0 mm Footprint
- Extended Temp Range
- RoHS Compliant
- Wide Supply Voltage
- Low Jitter
- Compatible with 1.8V, 2.5V or 3.3V Power Supply
- AEC-Q200 Qualified

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECS-2520MVQ			UNITS
		MIN	TYP	MAX	
Frequency Range		1.000		160.000	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: 0.2 Vdd max. / VOH: 0.8 Vdd min.V DC				
Rise & Fall time	20% Vdd – 80% Vdd			7	ns
Start Up Time				10	mS
Phase Jitter	12 kHz to 20 MHz			1	pS
Duty Cycle	@ ½ Vdd		45/55		%
Input Current (No Load)	1.000 ~ 9.999 MHz			8	mA
	10.000 ~ 39.999 MHz			10	mA
	40.000 ~ 50.000 MHz			12	mA
	50.100 ~ 160.000 MHz			20	mA
Aging	Per year			±3	ppm
Standby Current				10	µA
Operating Temp*		-40		+85	°C
Storage Temp		-55		+125	°C

DIMENSIONS (mm)



PAD CONNECTIONS	
1	Tri-state
2	Gnd
3	Output
4	Vdd

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

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

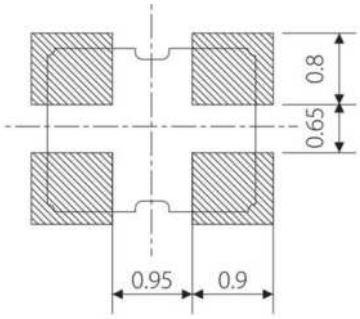


Figure 2) *Suggested Land*

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

ECS	-	SERIES	FREQUENCY ABBREVIATION	-	* STABILITY	TEMP RANGE	-	PACKAGING
ECS		2520MVQ 2.5 x 2.0 mm MultiVolt™ Oscillator	250 = 25.000 MHz See Developed Frequencies Pg.2		A= ±100 ppm B = ±50 ppm G = ±30 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 1K/Reel

* Frequency Stability includes initial tolerance, temperature, supply voltage load change and reflow frequency shift.
† Contact ECS for availability over extended temp range.

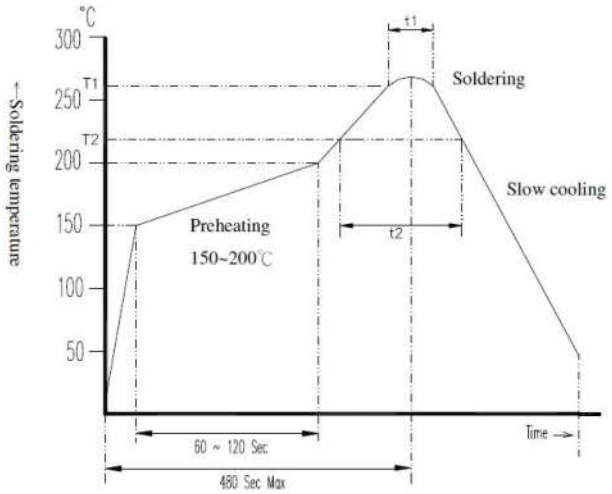
Rev. 2024

ECS-2520MVQ

SMD MultiVolt™ Crystal Oscillator

DEVELOPED FREQUENCIES

FREQUENCY MHz	CODE
8.000	080
12.000	120
16.000	160
20.000	200
24.000	240
25.000	250
26.000	260
27.000	270
32.000	320
33.3333	333.3
40.000	400
48.000	480
50.000	500
80.000	800
100.000	1000
125.000	1250

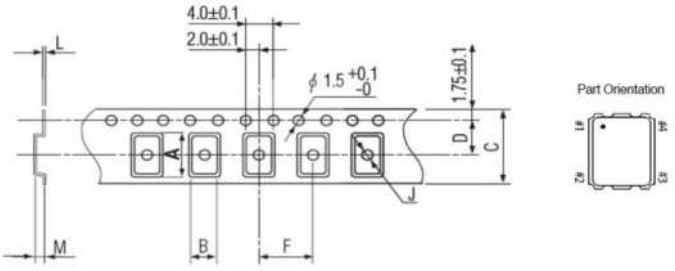


Application / Temperature Time	T1 / t1	T2 / t2
Lead Free	260 ± 5°C / 10 ± 5 See Max.	217°C Min / 60 ~ 150 Sec
Non-Lead Free	260 ± 5°C / 10 ± 5 See Max.	183°C Min / 60 ~ 150 Sec

Figure 3) *Suggested Reflow Profile*

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

POCKET TAPE DIMENSIONS (mm)



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
2.8	2.3	8.0	3.5	4.0	1.0	0.25	1.1	180	1000pcs