



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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The miniature ECS-2520S is a miniature SMD HCMOS Tight Stability Crystal Oscillator. The 2.5 x 2.0 x 0.9 mm ceramic package is ideal for wireless and IOT application where stability is critical.

# ECS-2520S SMD CRYSTAL OSCILLATOR



- Low Profile
- 2.5 x 2.0 mm Footprint
- Extended Temp Range
- RoHS Compliant

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECS-2520S			UNITS
		MIN	TYP	MAX	
Frequency Range		3.200		55.000	MHz
Frequency Stability *	EN (-40 ~ +85°C)			± 15	ppm
	FN (-40 ~ +85°C)			± 10	ppm
Power Supply	Vdd ±10%	+1.8, +2.5, +3.0, +3.3			V DC
Current Consumption				7	mA
Standby Current				10	µA
Output	HCMOS		15		pF
Output voltage Level	VOL:10%Vdd max./VOH:90%Vdd min.V DC				
Rise & Fall time	10%Vdd – 90%Vdd			5	ns
Duty Cycle	@ ½ Vdd			45/55	%
Phase Noise	@ 10 KHz offset		-145		dBc/Hz
Operating Temp		-40		+85	°C
Storage Temp		-55		+125	°C

## DIMENSIONS (mm)

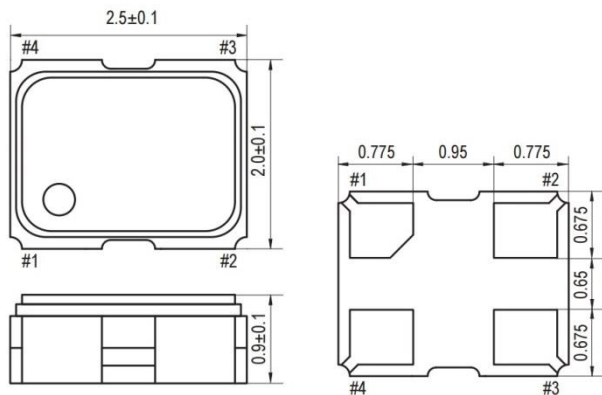


Figure 1) Top, Side, and Bottom views

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

Tri State Function	
Pin 1	Output
High or NC	Active
Low	High Impedance

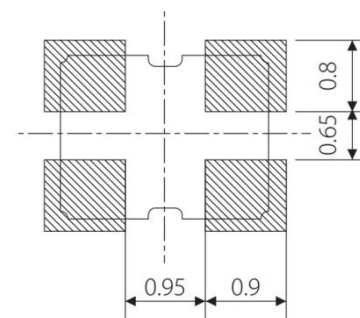


Figure 2) Suggested Land Pattern

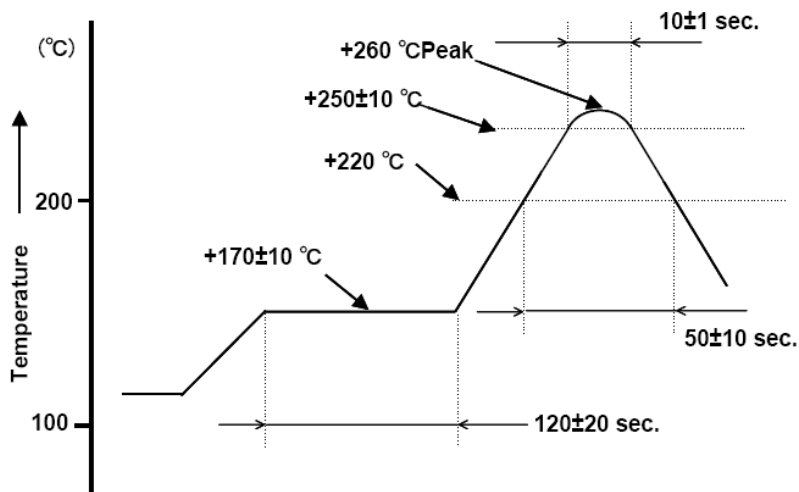
## PART NUMBERING GUIDE: Example ECS-2520S33-250-EN-TR

ECS - SERIES	Voltage	FREQUENCY ABBREVIATION	STABILITY	TEMP RANGE	PACKAGING
2520S 2.5 x 2.0 mm	18 = +1.8V 25 = +2.5V 20 = +3.0V 33 = +3.3V	250 = 25.000 MHz See Developed Frequencies Pg.2	E = ±15 ppm F = ± 10 ppm	N = -40 ~ +85°C	TR = Tape & Reel 1K/Reel

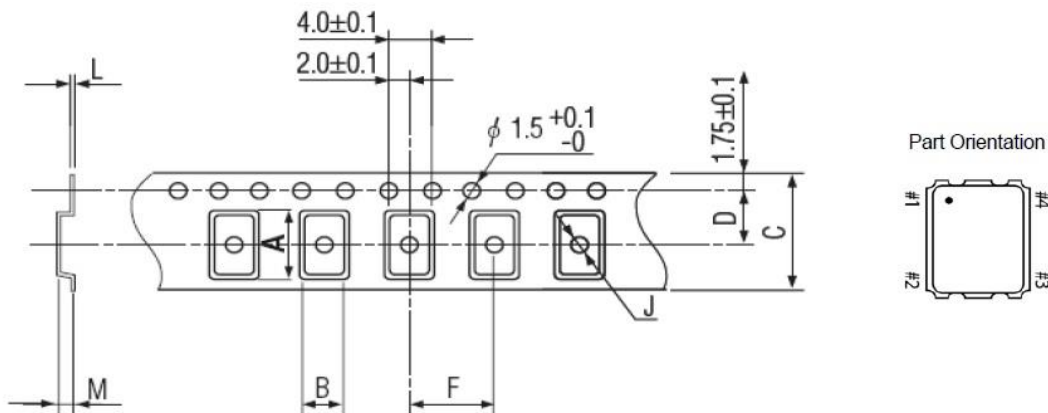
**FREQUENCY ABBREVIATIONS**

FREQUENCY MHz	CODE
5.000	050
10.000	100
12.000	120
16.000	160
20.000	200
24.000	240
25.000	250
26.000	260
32.000	320
40.000	400
44.000	440
50.000	500

SOLDER PROFILE
Peak solder Temp +260°C Max 10 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