

The miniature ECS-3225S is a miniature SMD HCMOS Tight Stability Crystal Oscillator. The 3.2 x 2.5 x 0.9 mm ceramic package is ideal for wireless and IOT application where stability is critical.

# ECS-3225S SMD CRYSTAL OSCILLATOR



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

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECS-3225S			UNITS
		MIN	TYP	MAX	
Frequency Range		2.500		55.000	MHz
Frequency Stability *	EN (-40 ~ +85°C)			± 15	ppm
	FN (-40 ~ +85°C)			± 10	ppm
Power Supply	V <sub>dd</sub> ±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	V <sub>OL</sub> :10%V <sub>dd</sub> max./V <sub>OH</sub> :90%V <sub>dd</sub> min.V DC				
Rise & Fall time	10%V <sub>dd</sub> – 90%V <sub>dd</sub>			5	ns
Duty Cycle	@ ½ V <sub>dd</sub>			45/55	%
Phase Noise	@ 10 KHz offset		-145		dBc/Hz
Operating Temp		-40		+85	°C
Storage Temp		-55		+125	°C

## DIMENSIONS (mm)

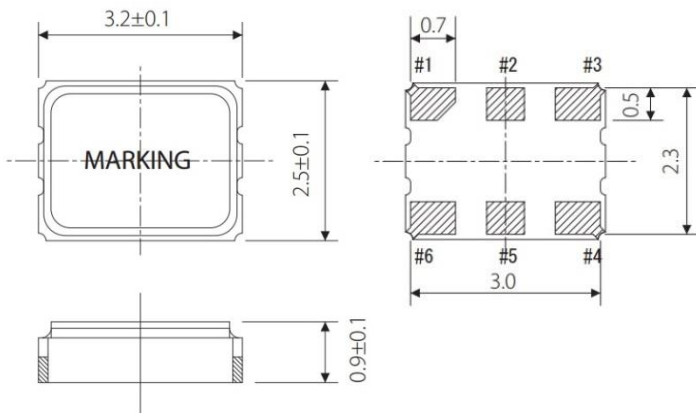


Figure 1) Top, Side, and Bottom views

PAD CONNECTIONS	
1	Tri-state
2	No Connect
3	Ground
4	Output
5	No Connect
6	V <sub>dd</sub>

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

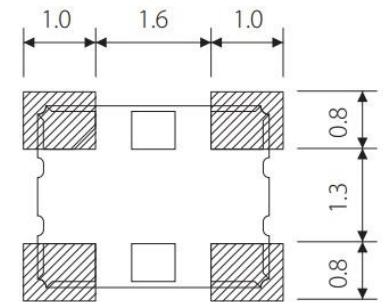


Figure 2) Suggested Land Pattern

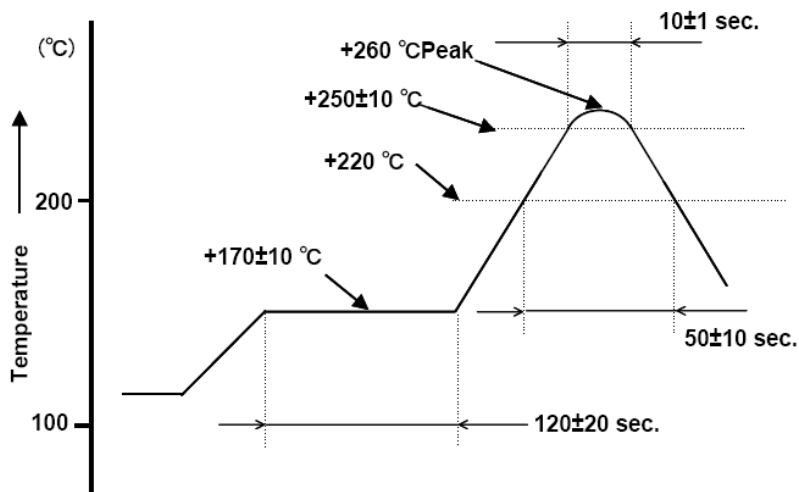
## PART NUMBERING GUIDE: Example ECS-3225S33-250-FN-TR

ECS - SERIES	Voltage	FREQUENCY ABBREVIATION	STABILITY	TEMP RANGE	PACKAGING
3225S 3.2 x 2.5 mm	18 = +1.8V 25 = +2.5V 30 = +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

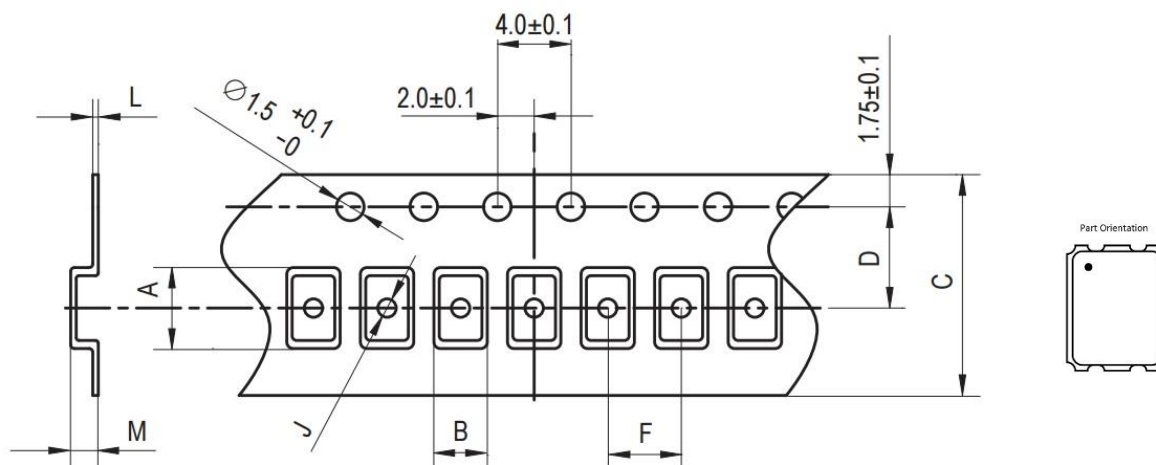
**FREQUENCY ABBREVIATIONS**

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
27.000	270
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
3.5	2.8	8.0	3.5	4.0	1.0	0.25	1.4	180	1000pcs