RoHS COMPLIANT

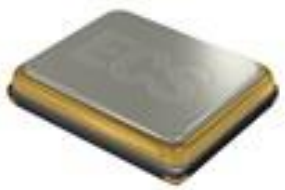
ECX-32
SMD CRYSTAL

The sub miniature ECX-32 is a compact SMD Crystal. The 3.2 x 2.5 x 0.8 mm ceramic package is ideal for LoRa WAN, wireless, and high density applications.

Request a Sample

ECS INC INTERNATIONAL®

ECX-32 SMD CRYSTAL



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

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECX-32			UNITS
		MIN	TYP	MAX	
Frequency		8.000		54.000	MHz
Mode of Oscillation	Fundamental				
Frequency Tolerance*	@ +25°C			± 50	ppm
Frequency Stability*	-20 ~ +70°C			± 50	ppm
Shunt Capacitance	Co			5	pF
Load Capacitance	Specify in P/N	4	20	Series	pF
Drive Level	DL			100	µW
Operating Temperature*	Topr	-20		+70	°C
Storage Temperature	Tstg	-55		+125	°C
Aging (First Year)	@ +25°C ±3°C			±5	ppm

DIMENSIONS (mm)

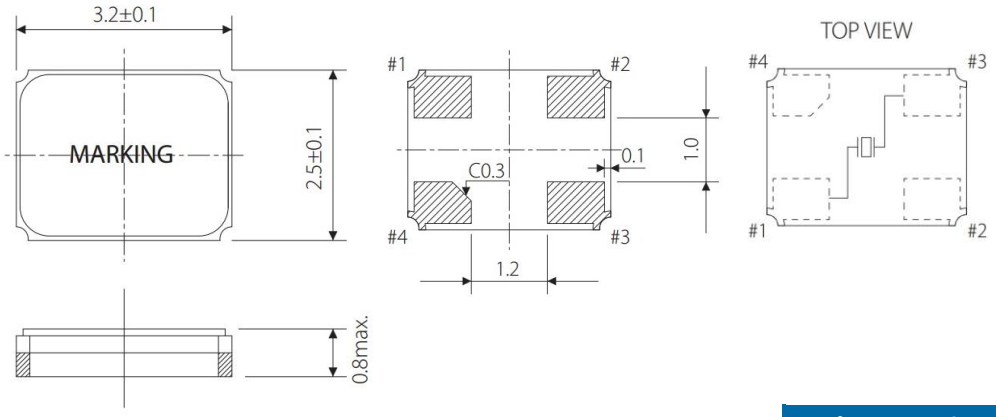


Figure 1) *Top, Side, and Bottom*

Crystal is symmetrical, pad 1 & 3 are interchangeable. Chamfer on the bottom can be on pad 4 or pad 1 and has no electrical significance.

Equivalent Series Resistance

Frequency (MHz)	ESR Ω Max.
8.000 ~ 9.999	400
10.000 ~ 15.999	100
16.000 ~ 19.999	80
20.000 ~ 23.999	60
24.000 ~ 54.000	40

Pad Connections	
1	In/Out
2	Gnd
3	Out/In
4	Gnd

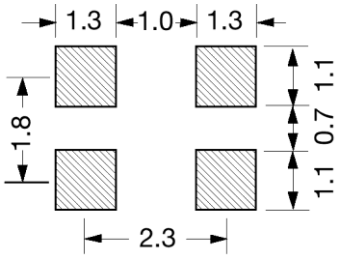


Figure 2) *Suggested land*

PART NUMBERING GUIDE: Example ECS-200-20-33-TR

ECS -	FREQUENCY ABBREVIATION	LOAD CAPACITANCE	PACKAGE	AVAILABLE OPTIONS			PACKAGING
				Tolerance	Stability	Temp Range	
ECS	200 = 20.000 MHz See P/N Guide	20 = 20 pF S = Series	33 = ECX-32	Blank = Std A = ± 25 ppm J = ± 20 ppm R = ± 15 ppm C = ± 10 ppm	Blank= Std D= ±100 ppm E = ± 50 ppm G = ± 30 ppm H = ± 25 ppm T = ± 20 ppm † W = ±15 ppm † K = ± 10 ppm †	Blank= Std L = -10 ~ +70°C M = -20 ~ +70°C Y = -30 ~ +85°C N = -40 ~ +85°C P = -40 ~ +105°C S = -40 ~ +125°C U = -55 ~ +125°C	TR = Tape & Reel 1K/Reel

* Specify available options in P/N.

† Contact ECS for availability over extended temp range.

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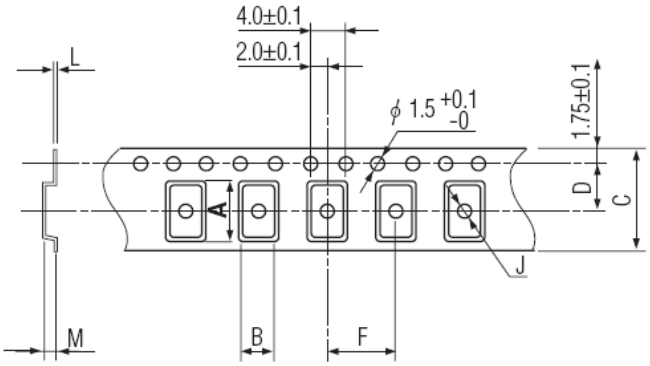
POCKET TAPE DIMENSIONS (mm)



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

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

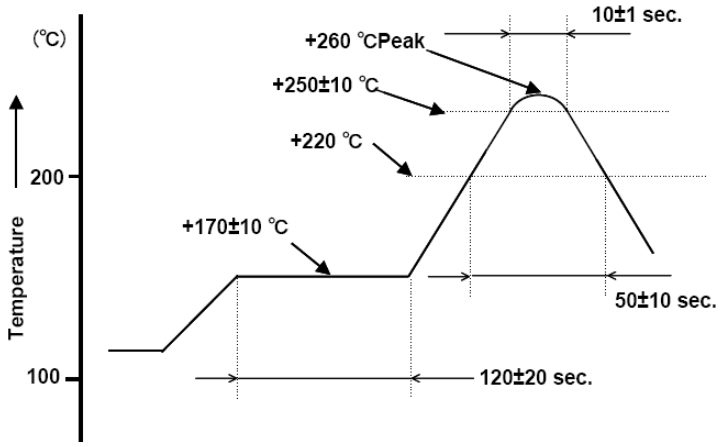


Figure 1) *Suggested Reflow Profile*

DEVELOPED FREQUENCIES	
Abbreviation	Frequency (MHZ)
80	8.000
100	10.000
120	12.000
122.8	12.288
143	14.31818
147.4	14.7456
160	16.000
184	18.432
192	19.200
196	19.6608
200	20.000
240	24.000
245.7	24.576
250	25.000
260	26.000
270	27.000
300	30.000
320	32.000
360	36.000
400	40.000
480	48.000