ECX-32
SMD QUARTZ CRYSTAL

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

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 today's SMD manufacturing environment.

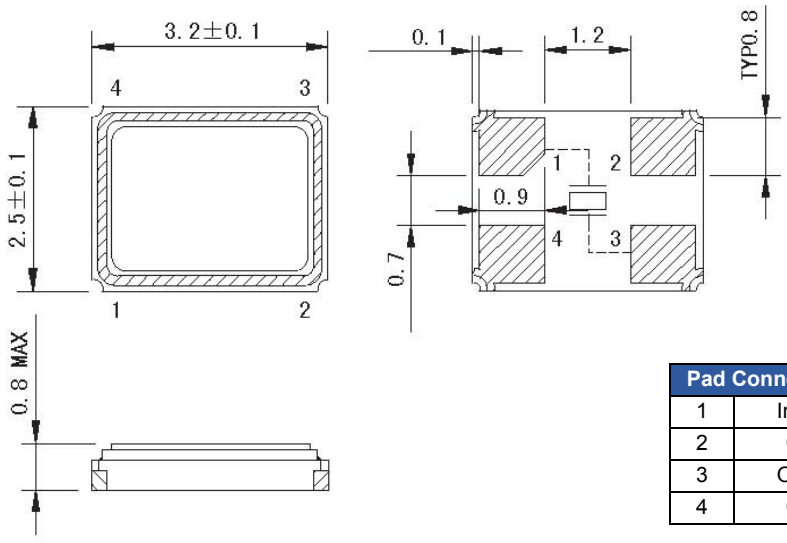
OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECX-32			UNITS
		MIN	TYP	MAX	
Frequency Range		12.000		50.000	MHz
Frequency Tolerance	at +25°C			± 50 *	ppm
Frequency Stability	-20 to +70°C			± 50 *	ppm
Shunt Capacitance				5	pF
Load Capacitance	Specify in P/N	10	20	Series	pF
Drive Level				100	µW
Operating Temperature		-20		+70	°C
Storage Temperature		-55		+125	°C
Aging (Per Year)	@ +25°C ±3°C			±5	ppm

EQUIVALENT SERIES RESISTANCE/MODE OF OSCILLATION

FREQUENCY RANGE (MHz)	MODE OF OSC	MAX ESR Ω	FREQUENCY RANGE (MHz)	MODE OF OSC	MAX ESR Ω
12.00 ~ 15.999	Fundamental	100	20.000 ~ 23.999	Fundamental	60
16.000 ~ 19.999	Fundamental	80	24.000 ~ 50.000	Fundamental	40

DIMENSIONS (mm)



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

Figure 1) Top, Side, and Bottom views

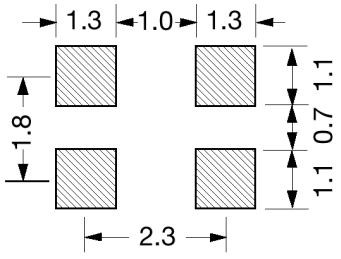


Figure 2) Suggested Land Pattern

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

ECS - Frequency Abbreviation - Load Capacitance - Package | **Custom Options: Tolerance * Stability Temp Range** - **Packaging**

Frequency Abbreviation	Load Capacitance	Package	Tolerance	* Stability	Temp Range	Packaging
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 M = -20 ~ +70°C N = -40 ~ +85°C P = -40 ~ +105°C S = -40 ~ +125°C U = -55 ~ +125°C	TR= Tape & Reel 1K/Reel

**Consult Factory for available stability options over extended temp range.*

Rev. 8/11

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Developed Frequencies

FREQUENCY MHz	CODE
16.000	160
18.432	184
19.6608	196
20.000	200
24.000	240
25.000	250
27.000	270
30.000	300
32.000	320
36.000	360
40.000	400
48.000	480

Sample P/N: ECS-200-20-33
ECS = Mfg Code
200 = Frequency Code 20.000 MHz
-20 = Load Capacitance 20 pF
-33 = Package, ECX-32

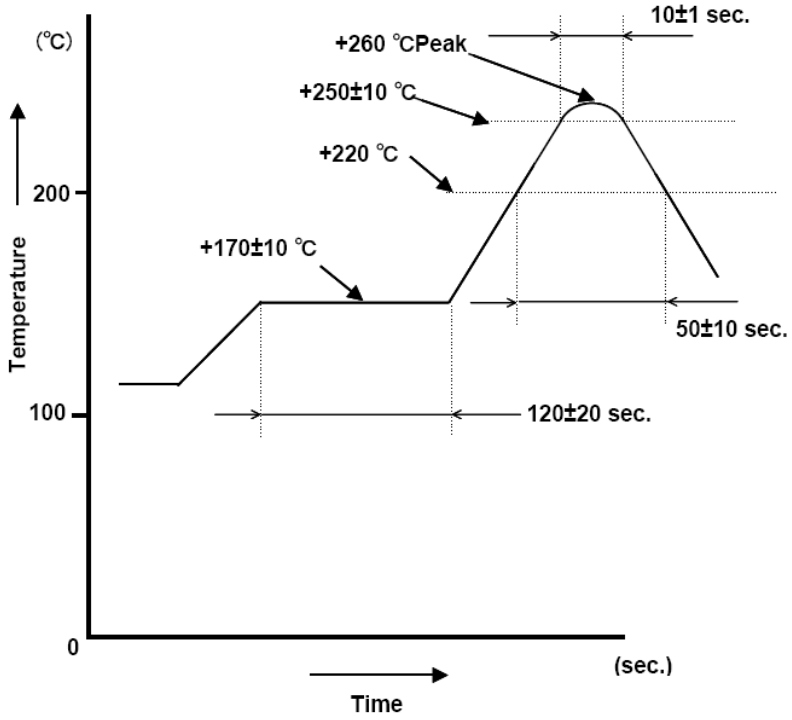
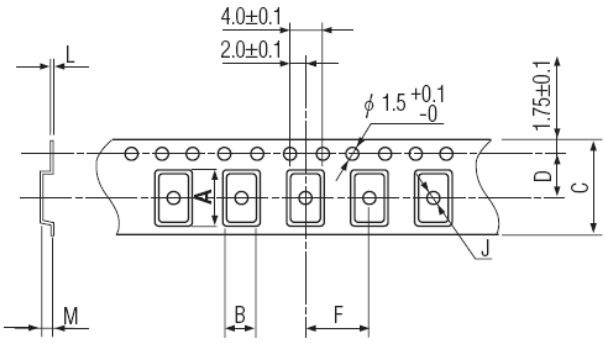


Figure 1) Suggested Reflow Profile

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

Figure 2) Pocket Tape Dimensions

Package Data	
Item	**Description**
Lid	Metal
Base	Ceramic
Sealing	Seam/EB
Terminal	Tungsten (metalized)
Plating	Gold/Nickel Surface/Under
RoHS	Compliant (Pb Free)

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