

The ultra-miniature ECX-12Q is a very compact SMD AEC-Q200 Qualified Tuning Fork Crystal. The 2.0 x 1.2 x 0.55 mm ceramic package is ideal for today's SMD manufacturing environment.

# ECX-12Q SMD 32.768 KHz CRYSTAL

[Request a Sample](#)



- RoHS Compliant (2011/65/EU)
- MSL: 1
- AEC-Q200 Qualified
- TS16949 certified production
- PPAP Supported

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECX-12Q			UNITS
		MIN	TYP	MAX	
Frequency			32.768		KHz
Frequency Tolerance	@ +25°C			± 20 *	ppm
Temperature Coefficient		-0.028	-0.034	-0.040	ppm/°C <sup>2</sup>
Shunt Capacitance	Co		1.2		pF
Load Capacitance	Specify in P/N		12.5		pF
Drive Level	DL		0.1	0.5	μW
Equivalent Series Resistance	R1			90K	Ω
Insulation Resistance	@ 100V DC	500M			Ω
Turnover Temperature		+20	+25	+30	°C
Operating Temperature	S Option	-40		+125	°C
Storage Temperature	Tstg	-55		+125	°C
Aging (First Year)	@ +25°C ±3°C			±3	ppm

## DIMENSIONS (mm)

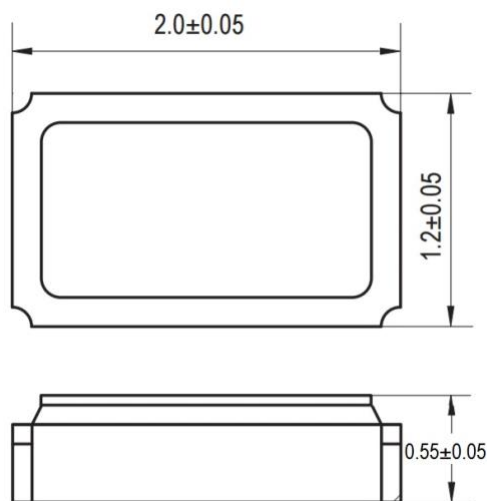


Figure 1) Top, Side, and Bottom views

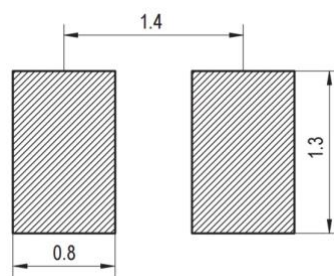
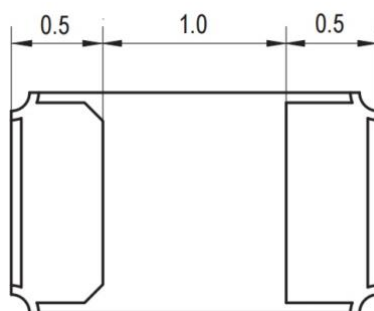


Figure 2) Suggested Land Pattern

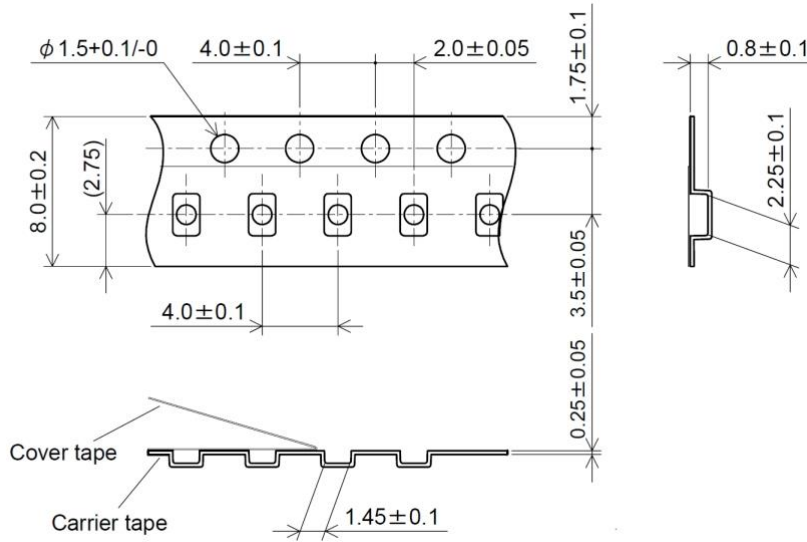
PAD CONNECTIONS	
1	In/Out
2	Out/In

## PART NUMBERING GUIDE: Example ECS-.327-12.5-12QS-TR

ECS - FREQUENCY ABBREVIATION	LOAD CAPACITANCE	PACKAGE	TOLERANCE	OPERATING TEMPERATURE	PACKAGING	
ECS	.327 = 32.768 KHz	12.5 = 12.5 pF 9 = 9 pF 7 = 7 pF	-12Q = ECX-12Q	Blank = ±20ppm * C = ± 10 ppm	N=-40 ~ +85°C S=-40 ~ 125°C	TR = Tape & Reel 3K/Reel

\*Contact ECS for availability

**POCKET TAPE DIMENSIONS (mm)**



**SOLDER PROFILE**

Peak solder Temp  $+260^\circ\text{C}$  Max 10 sec Max.

2 Cycles Max.

MSL 1, Lead Finish Au

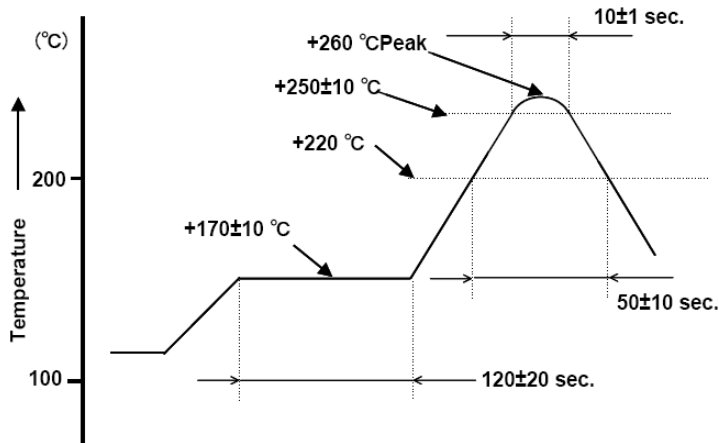


Figure 1) Suggested Reflow Profile