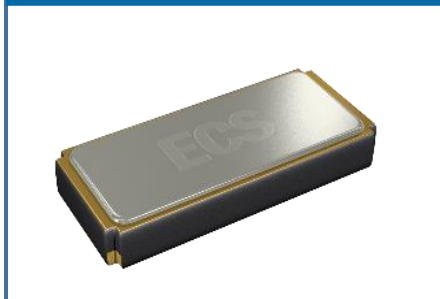


The ultra-miniature ECX-12L is a very compact SMD Tuning Fork Crystal. The 2.0 x 1.2 x 0.38 mm **low profile** ceramic package is ideal for smart cards, mobile devices, and industrial applications.

ECX-12L SMD CRYSTAL



- **Low Profile 0.38 mm H**
- 2.0 x 1.2 mm Footprint
- Low Power RTC Applications such as STM32 [AN2867](#)
- RoHS Compliant
- Applications: Automotive, COTS, Industrial, IOT

DIMENSIONS (mm)

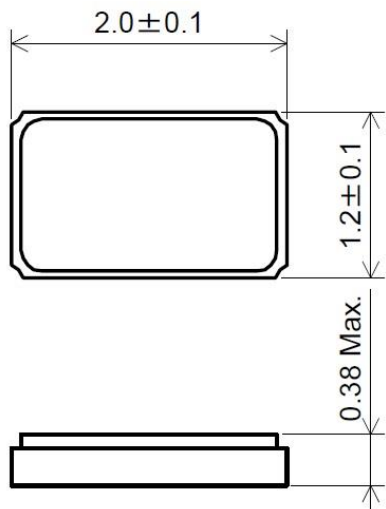
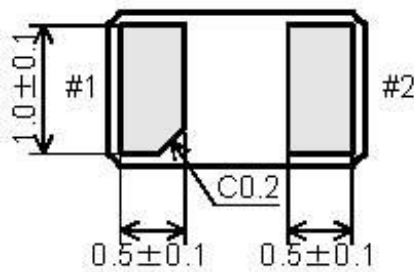


Figure 1) Top, Side, and Bottom views



PAD CONNECTIONS	
1	In/Out
2	Out/In

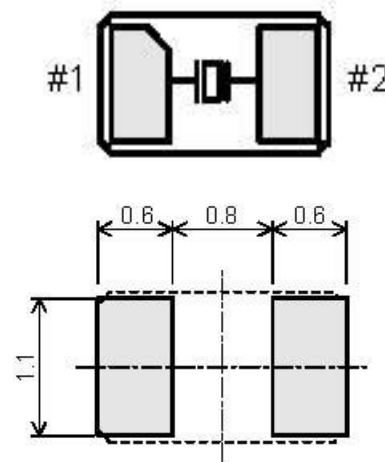


Figure 2) Suggested Land Pattern

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

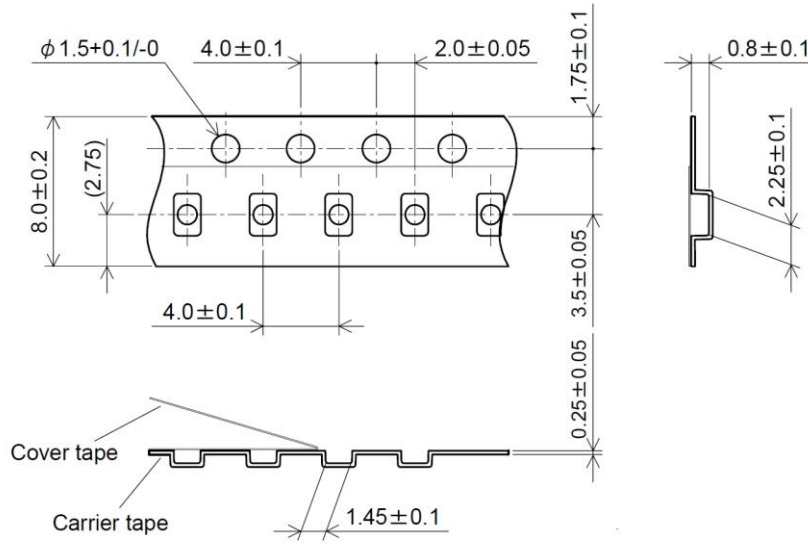
PARAMETERS	CONDITIONS	ECX-12L			UNITS
		MIN	TYP	MAX	
Frequency			32.768		KHz
Frequency Tolerance	@ +25°C			± 20 *	ppm
Load Capacitance	Specify in P/N		12.5		pF
Drive Level	DL		0.1	0.5	μW
Equivalent Series Resistance	R1			100K	Ω
Motional Capacitance			7.0		fF
Turnover Temperature		+20	+25	+30	°C
Temperature Coefficient		-0.02	-0.03	-0.040	ppm/°C ²
Shunt Capacitance	Co		1.3		pF
Aging (First Year)	@ +25°C ±3°C			±3	ppm
Operating Temperature	T _{opr}	-40		+85	°C
Storage Temperature	T _{stg}	-55		+125	°C

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

ECS - FREQUENCY ABBREVIATION	LOAD CAPACITANCE	PACKAGE	CUSTOM OPTIONS Tolerance	PACKAGING
ECS	.327 = 32.768 KHz 9 = 9 pF 7 = 7 pF 6 = 6 pF	-12L = ECX-12L	Blank = ±20 ppm * C = ± 10 ppm	TR = Tape & Reel 5K/Reel

*Contact ECS for availability

POCKET TAPE DIMENSIONS (mm)



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



Figure 1) Suggested Reflow Profile