



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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The ultra-miniature ECX-12 is a very compact SMD Tuning Fork Crystal. The 2.0 x 1.2 x 0.6 mm ceramic package is ideal for today's SMD manufacturing environment.

ECX-12

32.768 KHz

SMD Tuning Fork Crystal

ECX-31B SMD CRYSTAL



- Low Profile
- 2.0 x 1.2 mm Footprint
- Extended Temp. Range
- RoHS Compliant
- Applications: Automotive, COTS, Industrial, IOT

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECX-12			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			90K	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	Topr	-40		+85	°C
Storage Temperature	Tstg	-55		+125	°C

DIMENSIONS (mm)

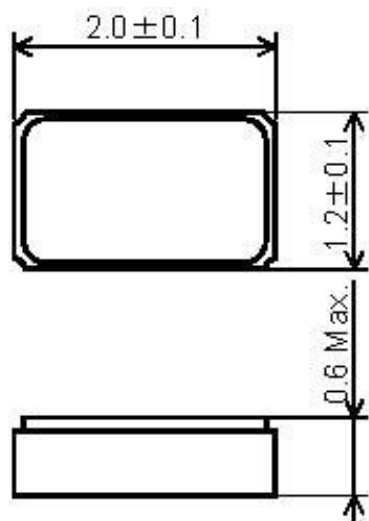
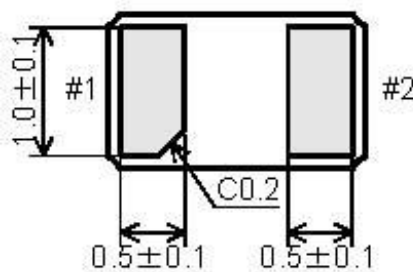


Figure 1) Top, Side, and Bottom views



PAD CONNECTIONS

1	In/Out
2	Out/In

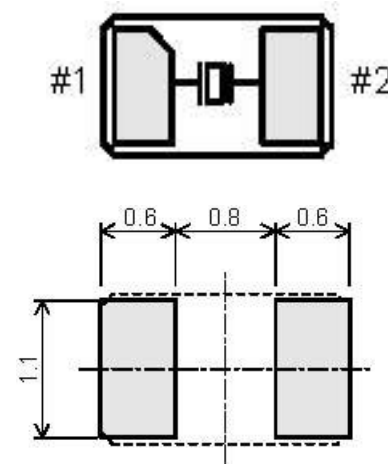


Figure 2) Suggested Land Pattern

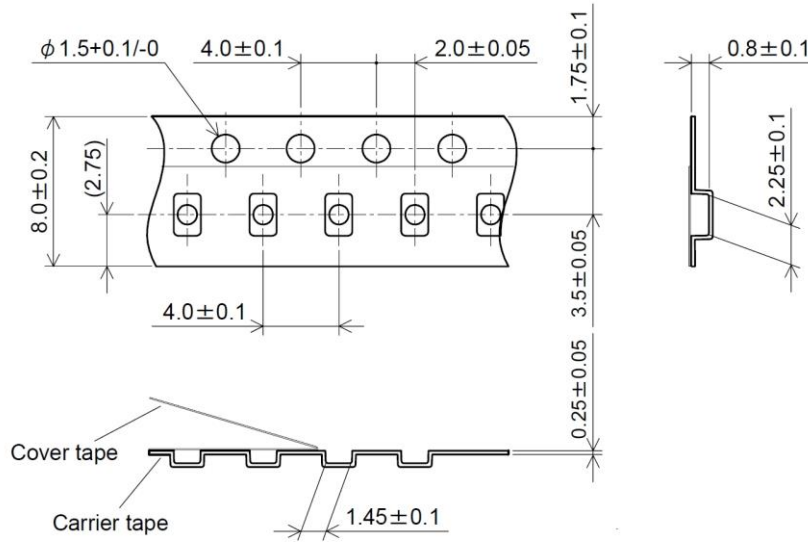
PART NUMBERING GUIDE: Example ECS-.327-12.5-12-TR

ECS - FREQUENCY ABBREVIATION	LOAD CAPACITANCE	PACKAGE	CUSTOM OPTIONS Tolerance	PACKAGING
ECS	.327 = 32.768 KHz 9 = 9 pF 7 = 7 pF 6 = 6 pF	-12 = ECX-12	Blank = ±20 ppm * C = ± 10 ppm	TR = Tape & Reel 3K/Reel

*Contact ECS for availability

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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

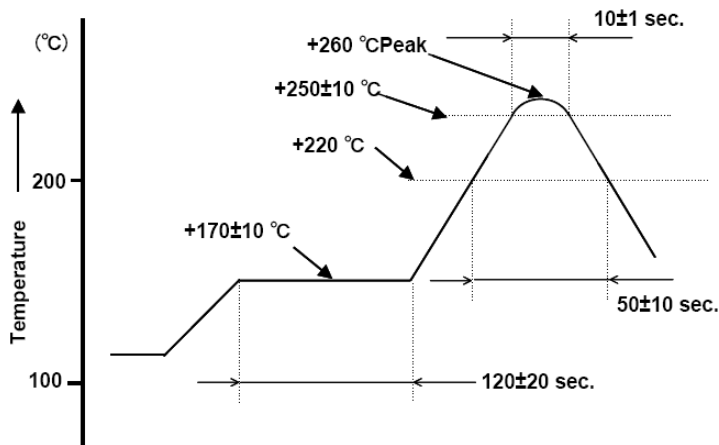


Figure 1) Suggested Reflow Profile