



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-12R is a very compact SMD Tuning Fork Crystal. The 2.0 x 1.2 x 0.6 mm ceramic package with reduced ESR is ideal for IOT and Wearable technology.

# ECX-12R

32.768 KHz  
SMD Tuning Fork Crystal  
Low ESR

[Request a Sample](#)



- Low ESR 70K Ohms Max.
- 2.0 x 1.2 mm Footprint
- Extended Temp. Range
- RoHS Compliant
- Applications: Metering, Automotive, Industrial, IOT and Wearables.

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECX-12R			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			1.0	μW
Equivalent Series Resistance	R1			70K	Ω
Turnover Temperature		+20	+25	+30	°C
Temperature Coefficient		-0.03	-0.033	-0.036	ppm/°C <sup>2</sup>
Shunt Capacitance	Co		1.3		pF
Aging (First Year)	@ +25°C ±3°C			±3	ppm
Operating Temperature	T <sub>opr</sub>	-40		+85	°C
Storage Temperature	T <sub>stg</sub>	-55		+125	°C

## DIMENSIONS (mm)

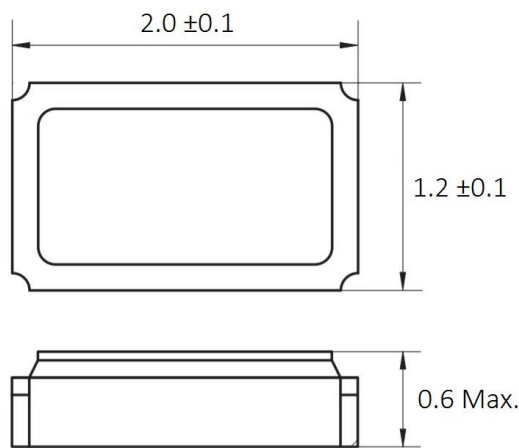


Figure 1) Top, Side, and Bottom views

PAD CONNECTIONS	
1	In/Out
2	Out/In

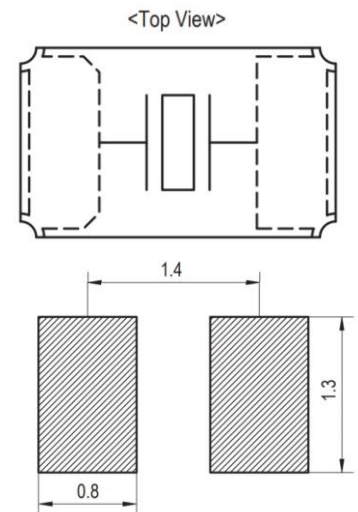


Figure 2) Suggested Land Pattern

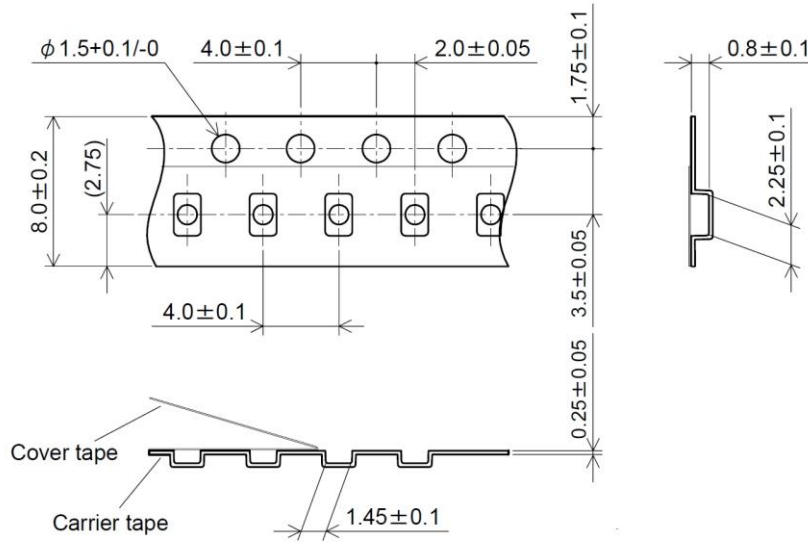
## PART NUMBERING GUIDE: Example ECS-.327-12.5-12R-TR

ECS - FREQUENCY ABBREVIATION	LOAD CAPACITANCE	PACKAGE	CUSTOM OPTIONS Tolerance	PACKAGING
ECS	.327 = 32.768 KHz 9 = 9 pF 7 = 7 pF 6 = 6 pF	-12R = ECX-12R	Blank = ±20 ppm * C = ± 10 ppm	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

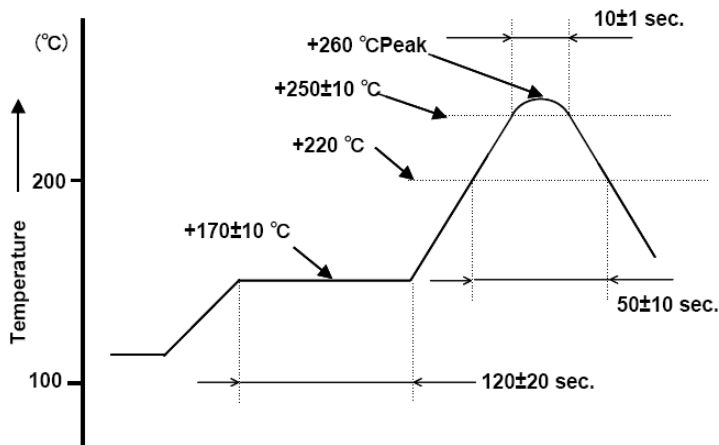


Figure 1) Suggested Reflow Profile