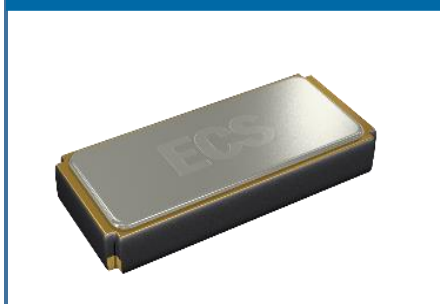


The ultra-miniature ECX-12R is a very compact SMD Tuning Fork Crystal. The 2.0 x 1.2 x 0.6 mm ceramic package with reduced ESR is ideal for IOT and Wearable technology.

ECX-12R

32.768 KHz
SMD Tuning Fork Crystal
Low ESR

ECX-12R SMD CRYSTAL

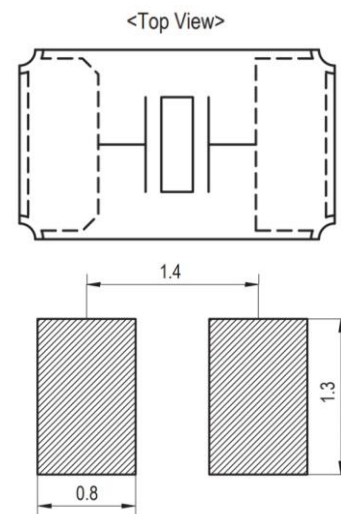
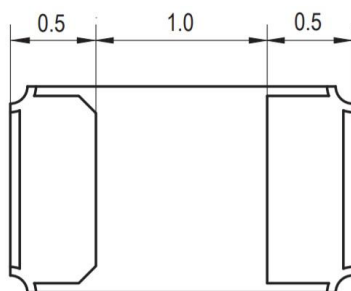
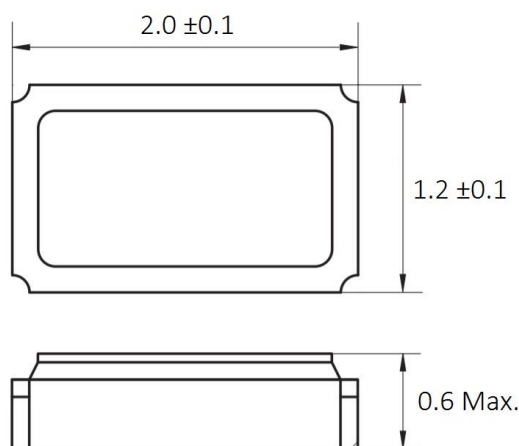


- Low ESR 70K Ohms Max.
- 2.0 x 1.2 mm Footprint
- Extended Temp. Range
- RoHS Compliant
- Applications: Metering, Automotive, Industrial, IOT and Wearables.

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 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

DIMENSIONS (mm)



PAD CONNECTIONS

1	In/Out
2	Out/In

Figure 1) Top, Side, and Bottom views

Figure 2) Suggested Land Pattern

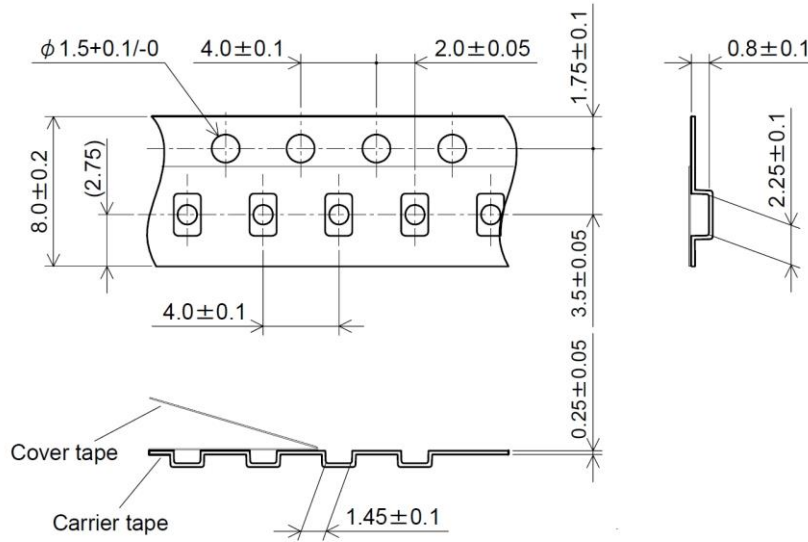
PART NUMBERING GUIDE: Example ECS-.327-12.5-12R-TR

ECS - FREQUENCY ABBREVIATION	LOAD CAPACITANCE	PACKAGE	CUSTOM OPTIONS Tolerance	PACKAGING
ECS	.327 = 32.768 KHz 12.5 = 12.5 pF 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

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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

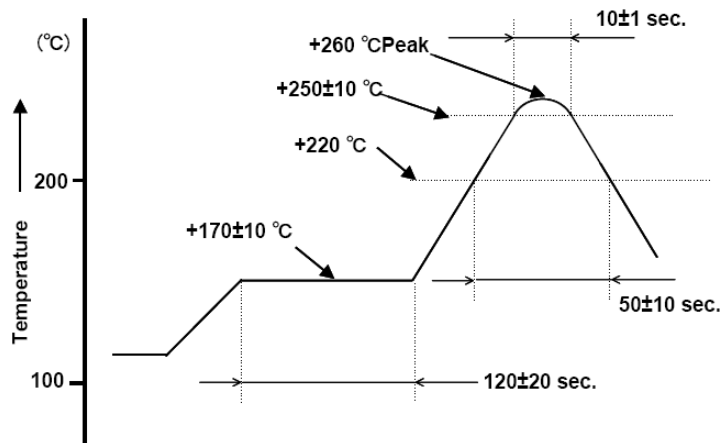


Figure 1) Suggested Reflow Profile