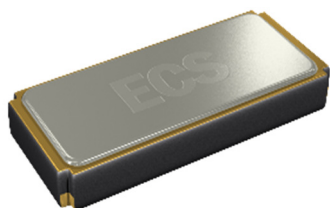


The ultra-miniature ECX-12RR is a very compact SMD Tuning Fork Crystal. The 2.0 x 1.2 x 0.6 mm ceramic package with reduced ESR is ideal for IOT and Wearable technology.

ECX-12RR

32.768 KHz
SMD Tuning Fork Crystal
Low ESR

ECX-12RR SMD CRYSTAL

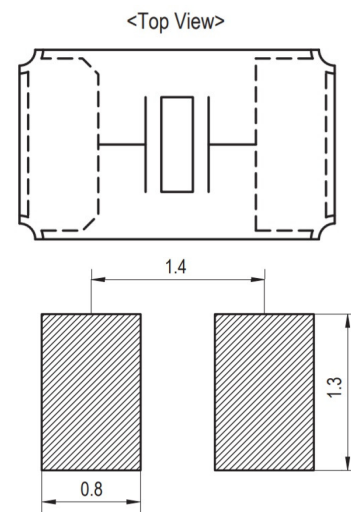
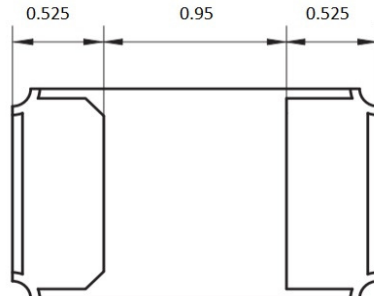
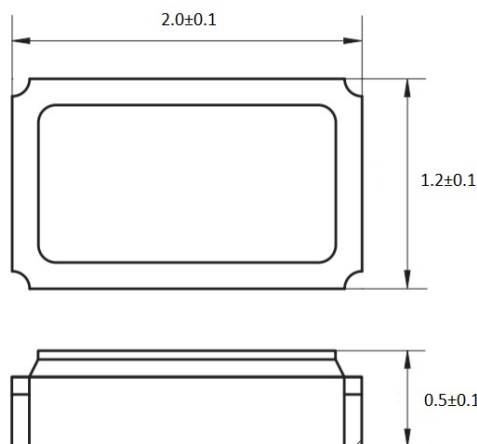


- Low ESR 50K Ohms Max.
- 2.0 x 1.2 mm Footprint
- Extended Temp. Range
- RoHS Compliant
- Applications: Metering, Automotive, Industrial, IOT and Wearables.

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECX-12RR			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		35K	50K	Ω
Turnover Temperature		+20	+25	+30	°C
Temperature Coefficient			-0.030	-0.040	ppm/°C ²
Shunt Capacitance	Co		1.7	2.0	pF
Aging (First Year)	@ +25°C ±3°C			±3	ppm
Operating Temperature	T _{opr}	-40		+85	°C
Storage Temperature	T _{stg}	-40		+85	°C

DIMENSIONS (mm)



PAD CONNECTIONS

1	In/Out
2	Out/In

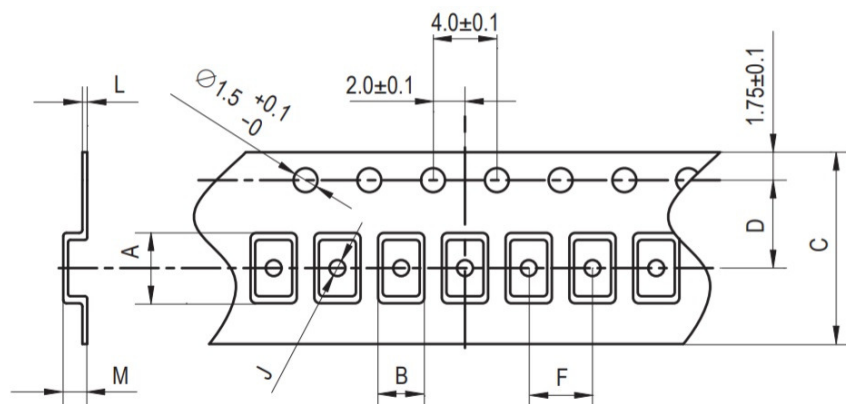
Figure 1) Top, Side, and Bottom views

Figure 2) Suggested Land Pattern

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

ECS	FREQUENCY ABBREVIATION	LOAD CAPACITANCE	PACKAGE	PACKAGING
ECS	.327 = 32.768 KHz	12.5 = 12.5 pF 9 = 9 pF 6 = 6 pF	-12RR = ECX-12RR	TR = Tape & Reel 3K/Reel

POCKET TAPE DIMENSIONS (mm)



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
2.25	1.45	8.0	3.5	4.0	1.0	0.25	0.75	180	3000pcs

SOLDER PROFILE

Peak solder Temp +260°C Max 10 sec Max.

2 Cycles Max.

MSL 1, Lead Finish Au

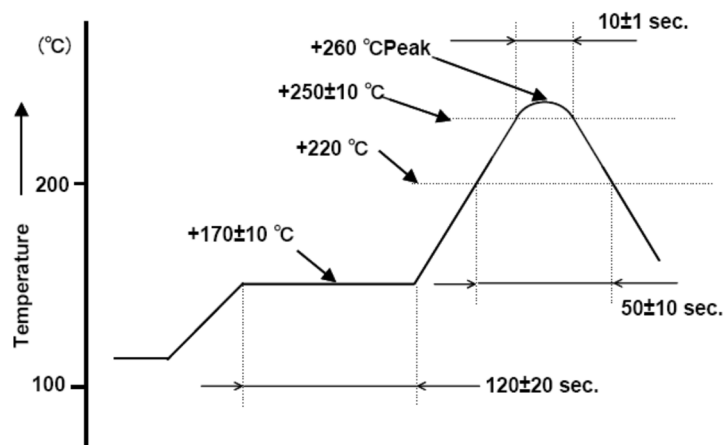


Figure 1) Suggested Reflow Profile