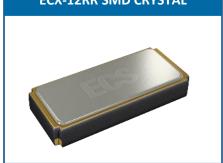


The ultra-miniature ECX-12RR is a very compact SMD Tuning Fork Crystal. The $2.0 \times 1.2 \times 0.6$ mm ceramic package with reduced ESR is ideal for IoT and Wearale technology.

ECX-12RR 32.768 KHz SMD Tuning Fork Crystal Low ESR



ECX-12RR SMD CRYSTAL

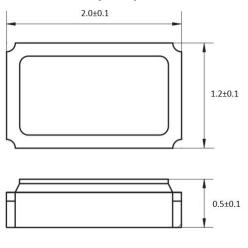


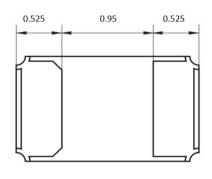
- Low ESR 50K Ohms Max.
- 2.0 x 1.2 mm Footprint
- Low Power RTC Applications such as STM32 AN2867
- RoHS Compliant
- Applications: Metering, Automotive, Industrial, IOT and Wearables.

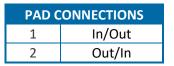
OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

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/°C²
Shunt Capacitance	Со		1.7	2.0	pF
Aging (First Year)	@ +25°C ±3°C			±3	ppm
Operating Temperature	Topr	-40		+85	°C
Storage Temperature	Tstg	-40		+85	°C

DIMENSIONS (mm)







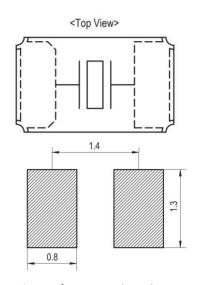


Figure 2) Suggested Land Pattern

Figure 1) Top, Side, and Bottom views

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	-12RR = ECX-12RR	TR = Tape & Reel		
		6 = 6 pF		3K/Reel		

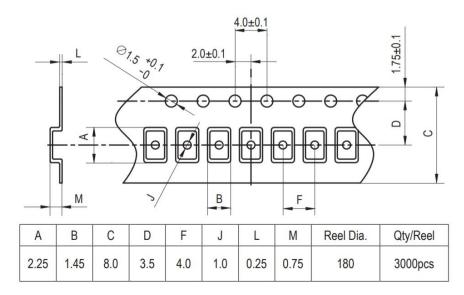
Rev.2018



32.768 KHz SMD Tuning Fork Crystal Low ESR



POCKET TAPE DIMENSIONS (mm)



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

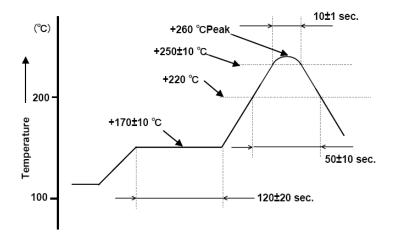


Figure 1) Suggested Reflow Profile