

The ultra-miniature ECX-49 is a very compact SMD Tuning Fork Crystal. The 4.1 x 1.5 x 0.9 mm ceramic package is ideal for Industrial applications.

[Request a Sample](#)

## ECX-49 SMD CRYSTAL



- Low Profile
- 4.1 x 1.5 mm Footprint
- Extended Temp. Range
- RoHS Compliant
- Low Power RTC Applications such as STM32 [AN2867](#)

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECX-49			UNITS
		MIN	TYP	MAX	
Frequency			32.768		KHz
Frequency Tolerance	@ +25°C			± 20 *	ppm
Temperature Coefficient	β	-0.028	-0.034	-0.040	ppm/°C <sup>2</sup>
Shunt Capacitance	C <sub>0</sub>		1.10		pF
Load Capacitance	Specify in P/N		12.5		pF
Drive Level	DL			1.0	μW
Equivalent Series Resistance	R <sub>1</sub>			70K	Ω
Turnover Temperature	T <sub>M</sub>	+20	+25	+30	°C
Operating Temperature	T <sub>opr</sub>	-40		+85	°C
Storage Temperature	T <sub>stg</sub>	-55		+125	°C
Aging (First Year)	@ +25°C ±3°C			±3	ppm

## DIMENSIONS (mm)

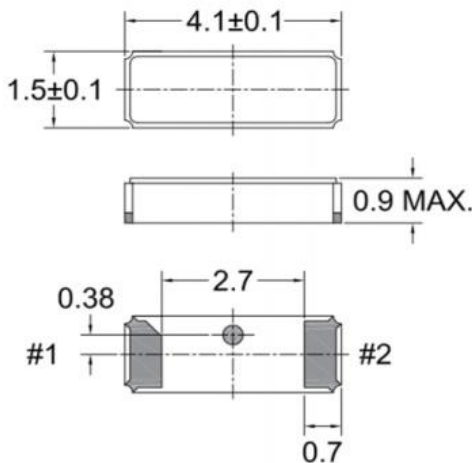


Figure 1) Top, Side, and Bottom views

### PAD CONNECTIONS

1	In/Out
2	Out/In

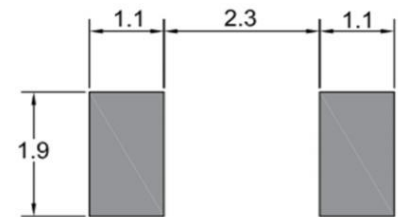


Figure 2) Suggested Land Pattern

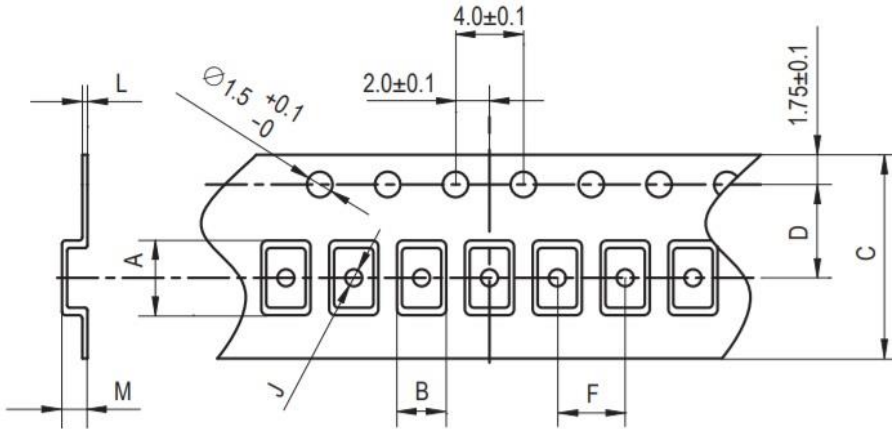
## PART NUMBERING GUIDE: Example ECS-.327-12.5-49-TR

ECS - FREQUENCY ABBREVIATION	LOAD CAPACITANCE	PACKAGE	CUSTOM OPTIONS Tolerance	PACKAGING
ECS	.327 = 32.768 KHz	-49 = ECX-49	Blank = ±20 ppm * C = ± 10 ppm	TR = Tape & Reel 3K/Reel
	12.5 = 12.5 pF 9 = 9 pF 7 = 7 pF 6 = 6 pF			

\*Contact ECS for availability

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**POCKET TAPE DIMENSIONS (mm)**



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
4.5	1.9	12.0	5.5	4.0	1.0	0.24	1.0	180	3000pcs

**SOLDER PROFILE**

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

2 Cycles Max.

MSL 1, Lead Finish Au

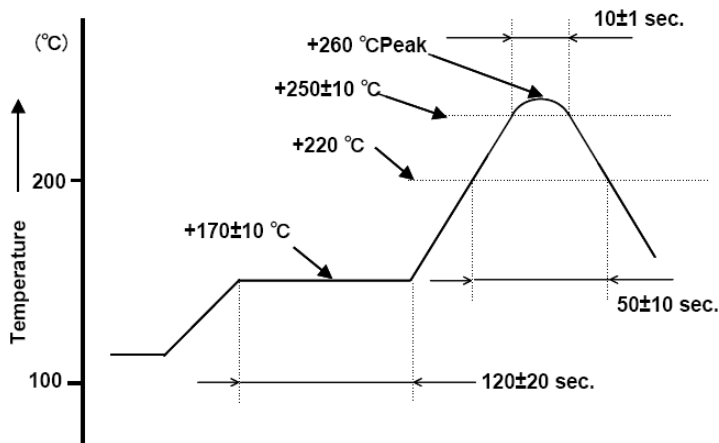


Figure 1) Suggested Reflow Profile