

The ultra-miniature ECX-34RR is a very compact SMD Tuning Fork Crystal with a Typical ESR of 20K  $\Omega$ . The 3.2 x 1.5 x 0.9 mm ceramic package is ideal for today's SMD manufacturing environment.

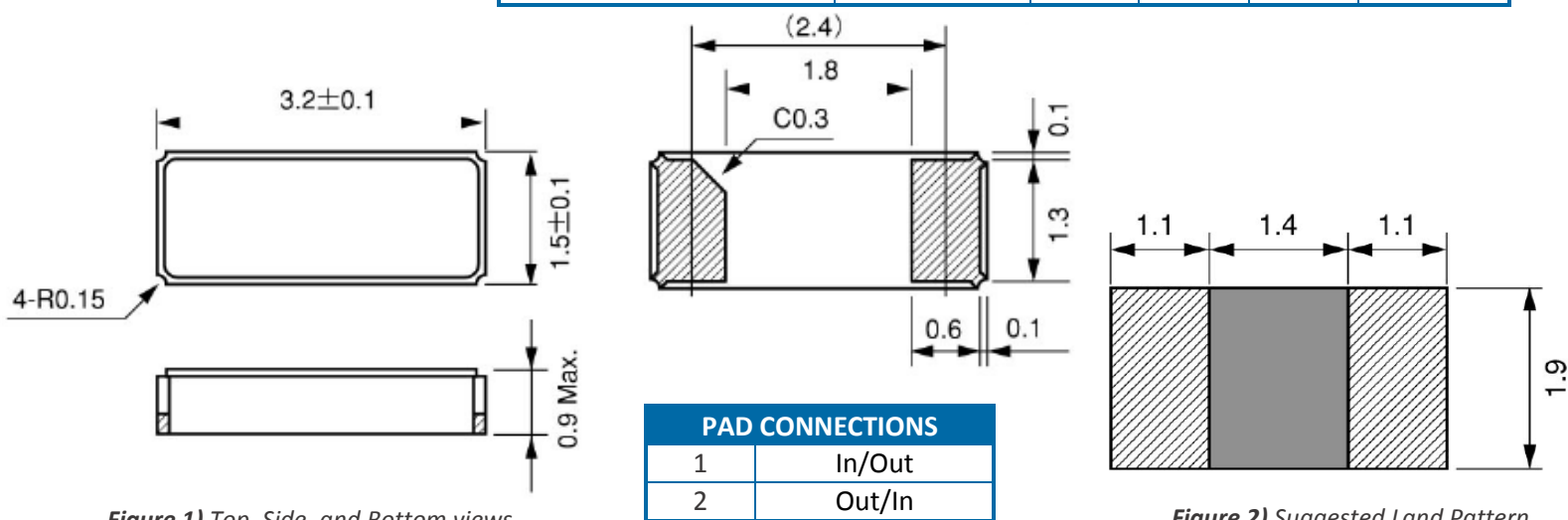
## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS



- Low Profile
- 20K Typ ESR
- 3.2 x 1.5 mm Footprint
- Extended Temp. Range
- RoHS Compliant

PARAMETERS	CONDITIONS	ECX-34RR			UNITS
		MIN	TYP	MAX	
Frequency	Fo		32.768		KHz
Frequency Tolerance	@ +25°C			± 20 *	ppm
Load Capacitance	Specify in P/N		12.5		pF
Equivalent Series Resistance	R1		20K	40K	$\Omega$
Drive Level	DL		0.1	0.5	$\mu$ W
Quality Factor	Q	20K	30K		
Turnover Temperature		+20	+25	+30	°C
Temperature Coefficient		-0.028	-0.034	-0.040	ppm/°C <sup>2</sup>
Shunt Capacitance	Co		1.3	1.6	pF
Motional Capacitance	C1		3.8		fF
Aging (First Year)	@ +25°C ±3°C			±3	ppm
Operating Temperature	Topr	-40		+85	°C
Storage Temperature	Tstg	-40		+85	°C
Insulation Resistance	@ 100V DC	500M			$\Omega$

## DIMENSIONS (mm)

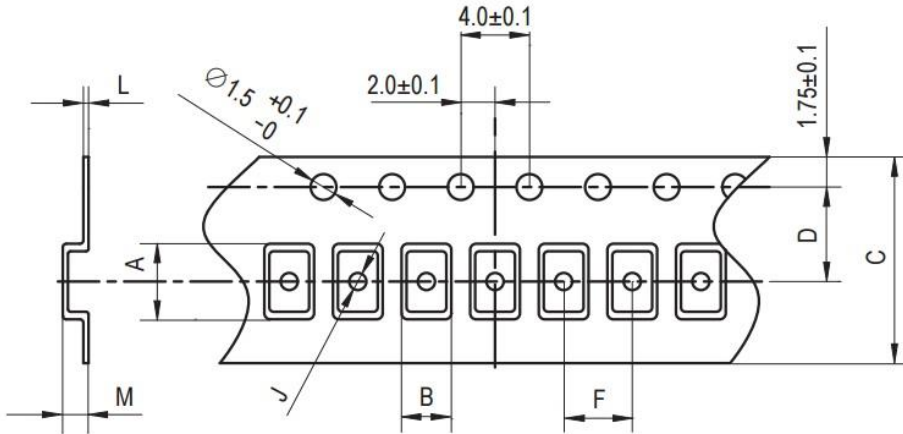


## PART NUMBERING GUIDE: Example ECS-.327-12.5-34RR-TR

ECS - FREQUENCY ABBREVIATION	LOAD CAPACITANCE	PACKAGE	CUSTOM OPTIONS Tolerance	PACKAGING
ECS	.327 = 32.768 KHz 12.5 = 12.5 pF 9 = 9 pF 6 = 6 pF	-34RR = ECX-34RR	Blank = ±20 ppm * C = ± 10 ppm	TR = Tape & Reel 3K/Reel

\*Contact ECS for availability

**POCKET TAPE DIMENSIONS (mm)**



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
3.4	1.7	12.0	5.5	4.0	1.0	0.3	1.2	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