



THE DATASHEET OF ECS-240-12-36Q-CWY-TR

The ECX-2236Q is a miniature SMD Crystal with a 2.5 x 2.0 mm footprint. AEC-Q200 Qualified

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS



- Low Profile
- 2.5 x 2.0 mm Footprint
- RoHS Compliant
- AEC-Q200 Qualified

DIMENSIONS (mm)

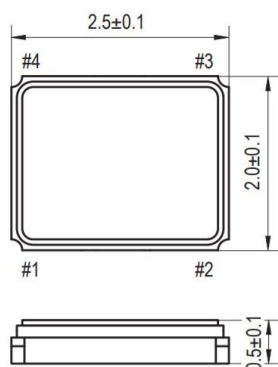
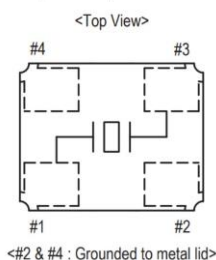
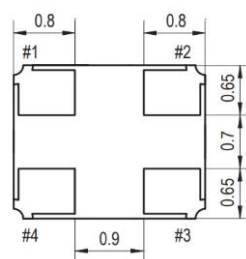


Figure 1) Top, Side, and Bottom

Crystal is symmetrical, pad 1 & 3 are interchangeable. Chamfer on the bottom pad has no electrical significance.

PARAMETERS	CONDITIONS	ECX-2236Q			UNITS
		MIN	TYP	MAX	
Frequency		12.000		60.000	MHz
Mode of Oscillation	Fundamental				
Frequency Tolerance*	@ +25°C			± 30	ppm
Frequency Stability*	-40 ~ +125°C (ES Option)			± 50	ppm
Shunt Capacitance	Co			5	pF
Load Capacitance	Specify in P/N		8		pF
Drive Level	DL		10	100	μW
Operating Temperature*	T _{opr} (ES Option)	-40		+125	°C
Storage Temperature	T _{stg}	-40		+125	°C
Aging (First Year)	@ +25°C ±3°C			±5	ppm



<#2 & #4 : Grounded to metal lid>

Frequency (MHz)	ESR Ω Max.
12.000 ~ 15.999	150
16.000 ~ 19.999	80
20.000 ~ 29.999	60
30.000 ~ 34.999	50
35.000 ~ 60.000	40

Pad Connections	
1	In/Out
2	Gnd
3	Out/In
4	Gnd

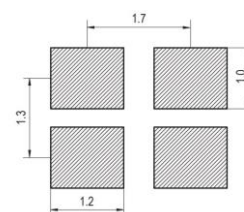


Figure 2) Suggested land pattern

PART NUMBERING GUIDE: Example ECS-240-8-36Q-ES-TR

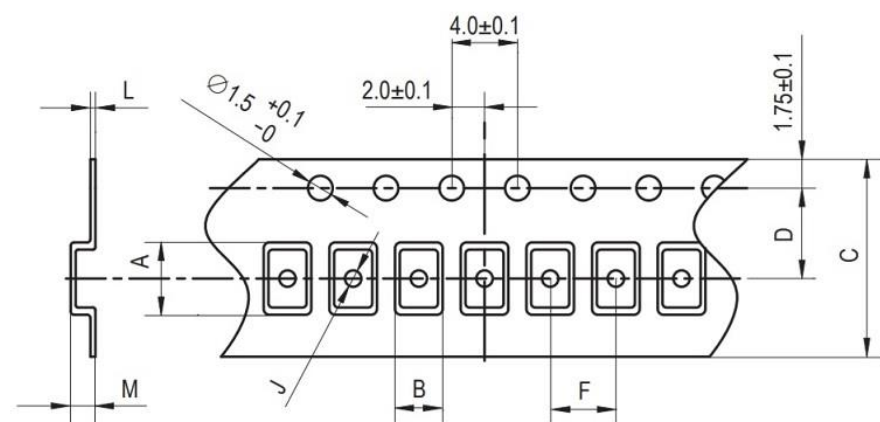
ECS - FREQUENCY ABBREVIATION		LOAD CAPACITANCE	PACKAGE	Tolerance Range	AVAILABLE OPTIONS		Temp	PACKAGING
ECS	240 = 24.000 MHz See P/N Guide	8 = 8 pF S = Series	36Q = ECX-2236Q	Blank = Std A = ± 25 ppm J = ± 20 ppm R = ± 15 ppm C = ± 10 ppm	Blank= Std D= ±100 ppm E = ± 50 ppm G = ± 30 ppm H = ± 25 ppm T = ± 20 ppm † W = ±15 ppm † K = ±10 ppm †	Blank= Std L = -10 ~ +70°C M = -20 ~ +70°C Y = -30 ~ +85°C N = -40 ~ +85°C P = -40 ~ +105°C S = -40 ~ +125°C U = -55 ~ +125°C	TR = T & Re 3K/Re	

* Specify available options in P/N.

† Contact ECS for availability over extended temp range.

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POCKET TAPE DIMENSIONS (mm)



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
2.8	2.3	8.0	3.5	4.0	1.05	0.25	0.75	180	3000

SOLDER PROFILE

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

2 Cycles Max.

MSL 1, Lead Finish Au

DEVELOPED FREQUENCIES

Abbreviation	Frequency (MHZ)
120	12.000
160	16.000
200	20.000
240	24.000
245.7	24.5760
250	25.000
260	26.000
270	27.000
300	30.000
320	32.000
400	40.000
480	48.000
540	54.000

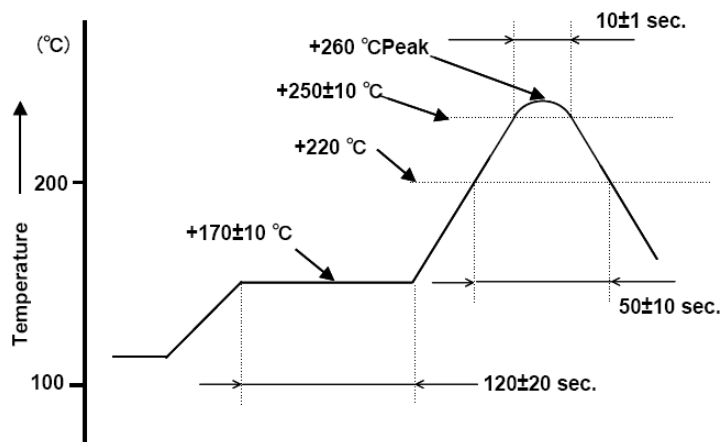


Figure 1) Suggested Reflow Profile