



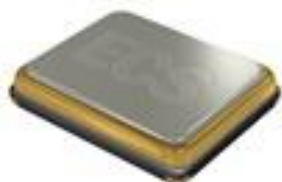
# THE DATASHEET OF ECS-240-12-30BQ-AEN-TR

The ECX-53BQ is a miniature SMD Crystal with a 3.2 x 5 mm footprint. AEC-Q200 Qualified.

# ECX-53BQ SMD CRYSTAL

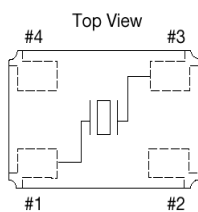
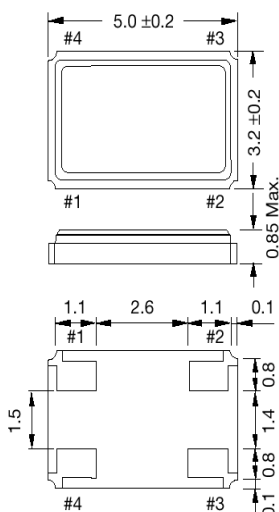
## Request a Sample

## ECX-53BQ SMD CRYSTAL



- Compact and low profile
- Extended Temp. Range Option
- RoHS Compliant
- AEC-Q200 Qualified

### DIMENSIONS (mm)



**Figure 1) Top, Side, and Bottom**

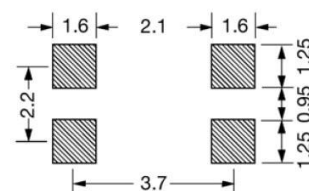
Crystal is symmetrical, pad 1 & 3 are interchangeable.  
Chamfer on the bottom pad has no electrical significance.

| PARAMETERS             | CONDITIONS                  | ECX-53BQ |     |        | UNITS |
|------------------------|-----------------------------|----------|-----|--------|-------|
|                        |                             | MIN      | TYP | MAX    |       |
| Frequency              |                             | 8.000    |     | 54.000 | MHz   |
| Mode of Oscillation    | Fundamental                 |          |     |        |       |
| Frequency Tolerance*   | @ +25°C                     |          |     | ± 30   | ppm   |
| Frequency Stability*   | -40 ~ +125°C<br>(DS Option) |          |     | ± 100  | ppm   |
| Shunt Capacitance      | Co                          |          |     | 7      | pF    |
| Load Capacitance       | Specify in P/N              | 6        | 20  | Series | pF    |
| Drive Level            | DL                          |          |     | 100    | μW    |
| Operating Temperature* | Topr<br>(DS Option)         | -40      |     | +125   | °C    |
| Storage Temperature    | Tstg                        | -55      |     | +125   | °C    |
| Aging (First Year)     | @ +25°C ±3°C                |          |     | ±5     | ppm   |

| Frequency (MHz) | ESR $\Omega$ Max. |
|-----------------|-------------------|
| 8.000 ~ 9.999   | 100               |
| 10.000 ~ 15.999 | 80                |
| 16.000 ~ 19.999 | 50                |
| 20.000 ~ 23.999 | 40                |
| 24.000 ~ 54.000 | 30                |

## Pad Connections

|   |        |
|---|--------|
| 1 | In/Out |
| 2 | Gnd    |
| 3 | Out/In |
| 4 | Gnd    |



**Figure 2) Suggested land**

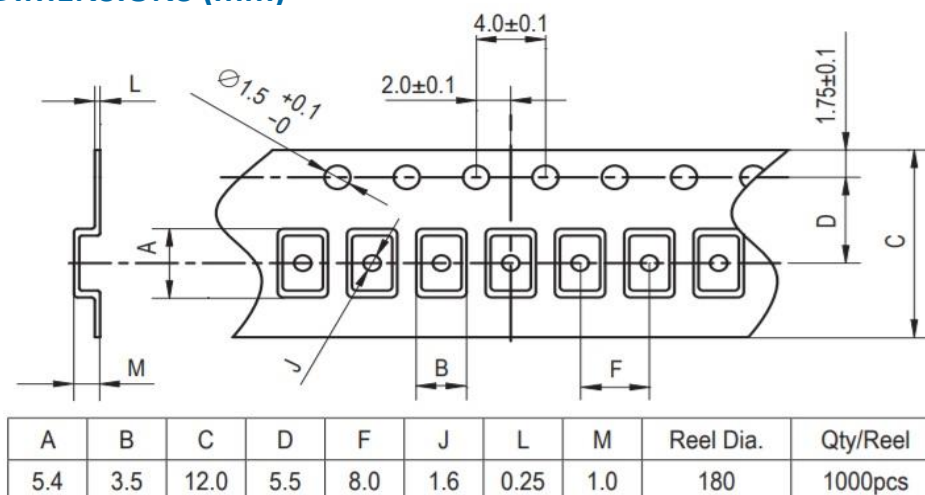
## PART NUMBERING GUIDE: Example ECS-200-20-30BQ-DU-TR

| ECS - FREQUENCY ABBREVIATION |                                   | LOAD CAPACITANCE         | PACKAGE            | AVAILABLE OPTIONS                                                           |                                                                                                                                 |                                                                                                                                                    | PACKAGING                         |
|------------------------------|-----------------------------------|--------------------------|--------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
|                              |                                   |                          |                    | Tolerance                                                                   | Stability                                                                                                                       | Temp Range                                                                                                                                         |                                   |
| ECS                          | 200 = 20.000 MHz<br>See P/N Guide | 20 = 20 pF<br>S = Series | 30BQ =<br>ECX-53BQ | Blank = Std<br>A = ± 25 ppm<br>J = ± 20 ppm<br>R = ± 15 ppm<br>C = ± 10 ppm | Blank= Std<br>D = ±100 ppm<br>E = ± 50 ppm<br>G = ± 30 ppm<br>H = ± 25 ppm<br>T = ± 20 ppm †<br>W = ±15 ppm †<br>K = ± 10 ppm † | Blank= Std<br>L = -10 ~ +70°C<br>M = -20 ~ +70°C<br>Y = -30 ~ +85°C<br>N = -40 ~ +85°C<br>P = -40 ~ +105°C<br>S = -40 ~ +125°C<br>U = -55 ~ +125°C | TR =<br>Tape<br>& Reel<br>1K/Reel |

\* Specify available options in P/N.  
† Contact ECS for availability over extended temp range.

Rev.2020

## POCKET TAPE DIMENSIONS (mm)



### SOLDER PROFILE

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

2 Cycles Max.

MSL 1, Lead Finish Au

### DEVELOPED FREQUENCIES

| Abbreviation | Frequency (MHZ) |
|--------------|-----------------|
| 80           | 8.000           |
| 100          | 10.000          |
| 120          | 12.000          |
| 135.6        | 13.560          |
| 143          | 14.31818        |
| 160          | 16.000          |
| 184          | 18.432          |
| 196.6        | 19.6608         |
| 200          | 20.000          |
| 240          | 24.000          |
| 250          | 25.000          |
| 260          | 26.000          |
| 270          | 27.000          |
| 300          | 30.000          |
| 320          | 32.000          |
| 400          | 40.000          |

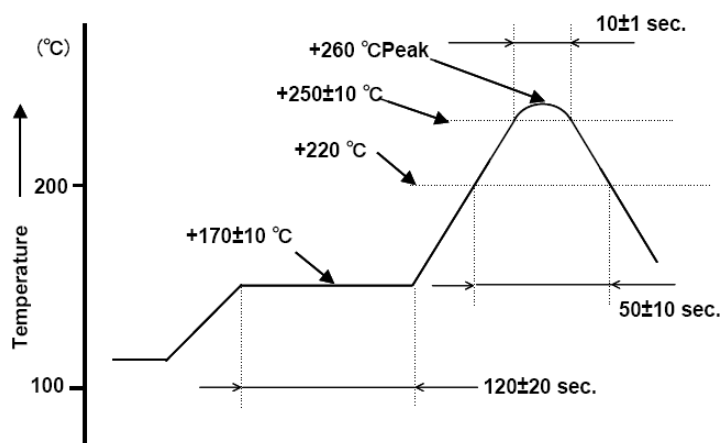


Figure 1) Suggested Reflow Profile