



**THE DATASHEET OF  
ECS-120-S-20A-TR**



The CSM-8A Series is a very cost effective, low profile SMD quartz crystal. The glass sealed ceramic package is ideal for PCMCIA, ethernet and fax modem card applications.

Request a Sample

### CSM-8A SMD CRYSTAL

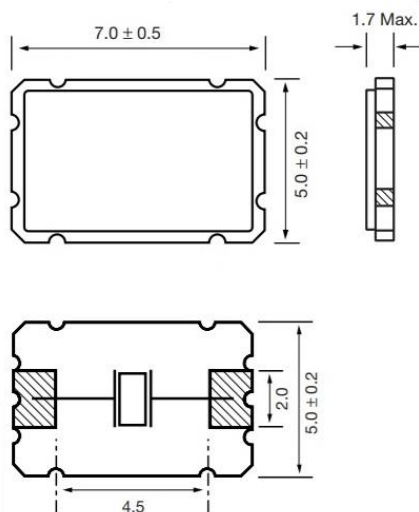


- Glass Sealed Ceramic Package
- Tight Stability/High Reliability
- Wide Frequency Range
- RoHS Compliant(7(c) Exemption)

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS             | CONDITIONS     | CSM-8A |     |         | UNITS |
|------------------------|----------------|--------|-----|---------|-------|
|                        |                | MIN    | TYP | MAX     |       |
| Frequency              |                | 6.000  |     | 100.000 | MHz   |
| Frequency Tolerance*   | @ +25°C        |        |     | ± 30    | ppm   |
| Frequency Stability*   | -10 ~ +70°C    |        |     | ± 50    | ppm   |
| Shunt Capacitance      | Co             |        |     | 5       | pF    |
| Load Capacitance       | Specify in P/N | 10     | 20  | Series  | pF    |
| Drive Level            | DL             |        |     | 500     | μW    |
| Operating Temperature* | Topr           | -10    |     | +70     | °C    |
| Storage Temperature    | Tstg           | -40    |     | +85     | °C    |
| Aging (First Year)     | @ +25°C ±3°C   |        |     | ±5      | ppm   |

### DIMENSIONS (mm)



| Frequency (MHz)<br>Max. | ESR Ω | Mode of Osc.             |
|-------------------------|-------|--------------------------|
| 6.000 ~ 6.999           | 100   | Fundamental              |
| 7.000 ~ 9.799           | 80    | Fundamental              |
| 9.800 ~ 15.999          | 60    | Fundamental              |
| 16.000 ~ 42.000         | 40    | Fundamental              |
| 35.000 ~ 100.000        | 60    | 3 <sup>rd</sup> Overtone |

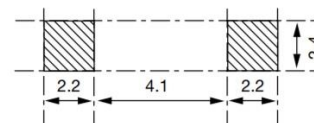


Figure 2) Suggested land

Figure 1) Top, Side, and Bottom

### PART NUMBERING GUIDE: Example ECS-160-20-20A-TR

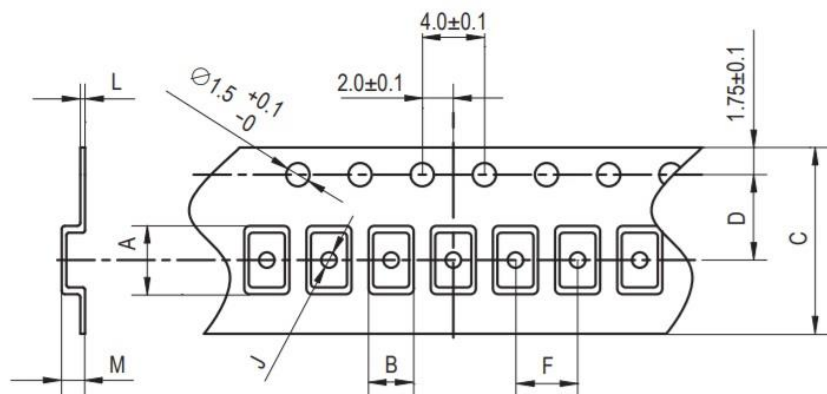
| ECS - FREQUENCY ABBREVIATION | LOAD CAPACITANCE                  | PACKAGE                  | AVAILABLE OPTIONS |   |   | PACKAGING  |                           |
|------------------------------|-----------------------------------|--------------------------|-------------------|---|---|--|---------------------------|
|                              |                                   |                          | Tolerance         | Stability                                       | Temp Range  |  |                           |
| ECS                          | 160 = 16.000 MHz<br>See P/N Guide | 20 = 20 pF<br>S = Series | 20A =<br>CSM-8A   | Blank = ±30 ppm<br>A = ± 25 ppm<br>J = ± 20 ppm | Blank= ±50 ppm<br>D= ±100 ppm<br>E = ± 50 ppm<br>G = ± 30 ppm †<br>H = ± 25 ppm † | Blank= -10 ~ +70°C<br>L = -10 ~ +70°C<br>M = -20 ~ +70°C<br>Y = -30 ~ +85°C<br>N = -40 ~ +85°C | TR =<br>Tape<br>&<br>Reel |

\* 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 |
| 7.4 | 5.4 | 16.0 | 7.5 | 8.0 | 1.5 | 0.3 | 1.8 | 178       | 1000pcs  |

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

| DEVELOPED FREQUENCIES |                 |
|-----------------------|-----------------|
| Abbreviation          | Frequency (MHZ) |
| 060                   | 6.000           |
| 080                   | 8.000           |
| 098.3                 | 9.8304          |
| 100                   | 10.000          |
| 110.5                 | 11.0592         |
| 120                   | 12.000          |
| 122.8                 | 12.288          |
| 143                   | 14.31818        |
| 147.4                 | 14.7456         |
| 160                   | 16.000          |
| 184                   | 18.432          |
| 196.6                 | 19.6608         |
| 200                   | 20.000          |
| 240                   | 24.000          |
| 240.                  | 24.00014        |
| 270                   | 27.000          |
| 300                   | 30.000          |
| 320                   | 32.000          |
| 330                   | 33.000          |
| 352.512               | 35.2512         |
| 360                   | 36.000          |
| 400                   | 40.000          |
| 403.2                 | 40.320          |
| 480                   | 48.000          |

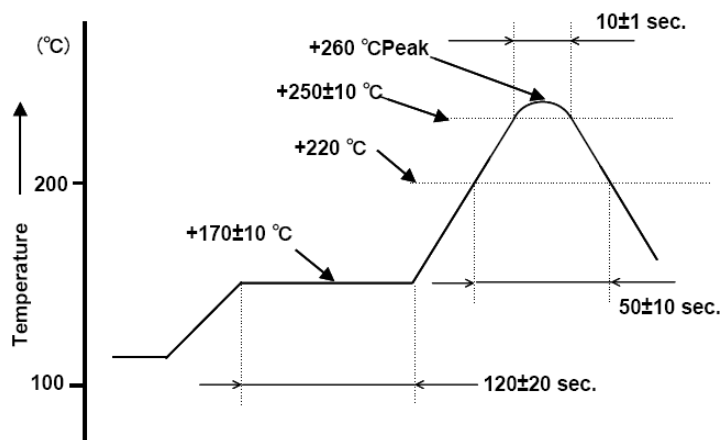




Figure 1) Suggested Reflow Profile

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View ECS-120-S-20A-TR on WIN SOURCE](#)
-  [ECS Inc. Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

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