

The CSM-12 is a low profile SMD Crystal with a 11.8 x 5.5 mm footprint. This cost effective package offers a height of 2.5 mm.

[Request a Sample](#)

CSM-12 SMD CRYSTAL

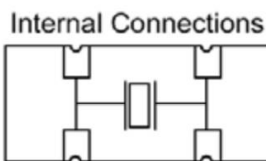
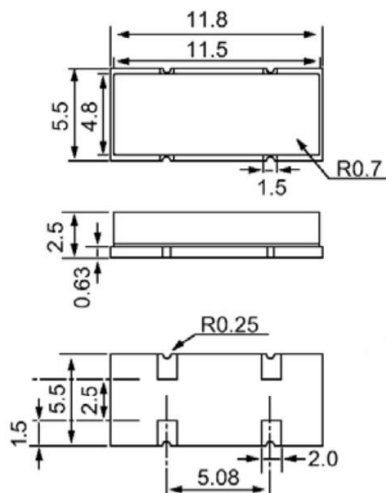


- Cost Effective
- Low Profile
- Industrial Temp. Range
- RoHS Compliant

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS | CONDITIONS | CSM-12 | | | UNITS |
|------------------------|------------------|--------|-----|--------|-------|
| | | MIN | TYP | MAX | |
| Frequency | | 3.579 | | 30.000 | MHz |
| Mode of Oscillation | Fundamental | | | | |
| Frequency Tolerance | @ +25°C | | | ± 30 | ppm |
| Frequency Stability | -10 ~ +70°C | | | ± 50 | ppm |
| | -40 ~ +85°C | | | ±100 | ppm |
| Shunt Capacitance | Co | | | 7 | pF |
| Load Capacitance | Specify in P/N | 10 | 20 | Series | pF |
| Drive Level | DL | | | 100 | μW |
| Operating Temperature* | T _{opr} | -40 | | +85 | °C |
| Storage Temperature | T _{stg} | -55 | | +125 | °C |
| Aging (First Year) | @ +25°C ±3°C | | | ±5 | ppm |

DIMENSIONS (mm)



| Frequency (MHz) | ESR Ω Max. |
|-----------------|------------|
| 3.579 ~ 3.999 | 200 |
| 4.000 ~ 5.999 | 150 |
| 6.000 ~ 9.999 | 100 |
| 10.000 ~ 13.999 | 80 |
| 14.000 ~ 24.999 | 50 |
| 25.000 ~ 30.000 | 40 |

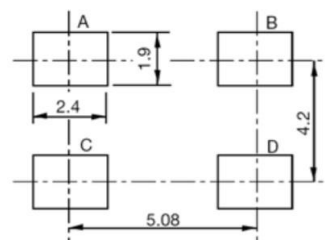


Figure 1) Top, Side, and Bottom

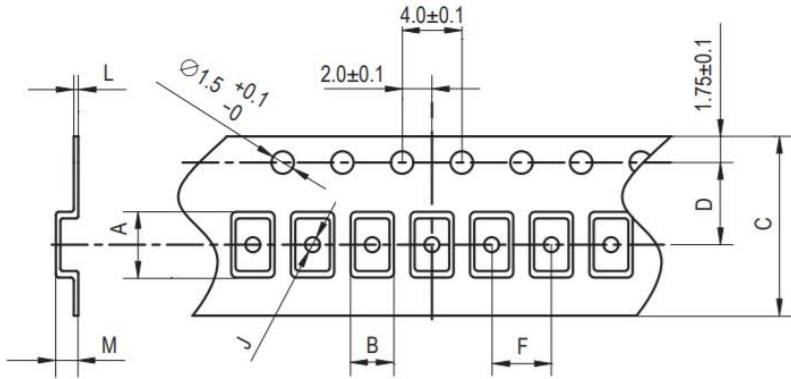
Figure 2) Suggested land

PART NUMBERING GUIDE: Example ECS-200-20-18-TR

| ECS - FREQUENCY ABBREVIATION | LOAD CAPACITANCE | PACKAGE | PACKAGING |
|------------------------------|-----------------------------------|--------------------------|-----------------------------------|
| ECS | 200 = 20.000 MHz See P/N Guide | 20 = 20 pF S = Series | 18 = CSM-12 |
| | | | TR = Tape & Reel 1K/Reel |

* Specify available options in P/N.

POCKET TAPE DIMENSIONS (mm)



| A | B | C | D | F | J | L | M | Reel Dia. | Qty/Reel |
|------|-----|------|------|------|-----|-----|-----|-----------|----------|
| 12.2 | 5.8 | 24.0 | 11.5 | 12.0 | 2.1 | 0.3 | 2.0 | 330 | 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) |
| 035 | 3.579545 |
| 036 | 3.6864 |
| 040 | 4.000 |
| 041 | 4.096 |
| 049 | 4.9152 |
| 050 | 5.000 |
| 060 | 6.000 |
| 061 | 6.144 |
| 073 | 7.3728 |
| 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 |
| 245.7 | 24.576 |
| 250 | 25.000 |
| 270 | 27.000 |

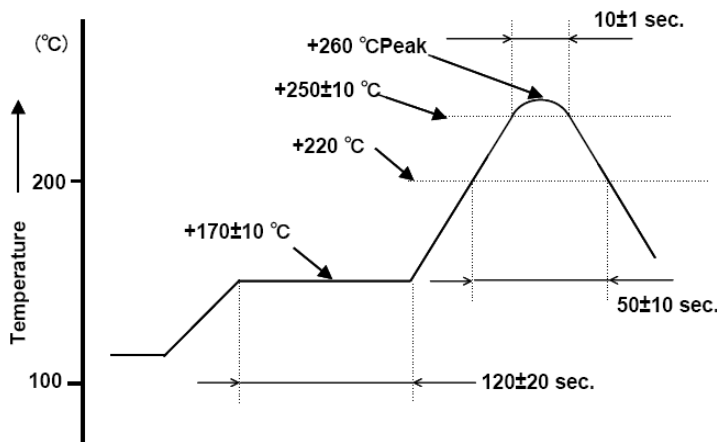


Figure 1) Suggested Reflow Profile

Mouser Electronics

Authorized Distributor

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ECS:

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[ECS-166.66-18-18-TR](#) [ECS-184-18-18-TR](#) [ECS-200-18-18-TR](#) [ECS-204.8-18-18-TR](#) [ECS-221-18-18-TR](#) [ECS-240-](#)
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[41-18-18-TR](#) [ECS-49-18-18-TR](#) [ECS-50-18-18-TR](#) [ECS-60-18-18-TR](#) [ECS-61-18-18-TR](#) [ECS-73-18-18-TR](#) [ECS-80-](#)
[18-18-TR](#) [ECS-36-20-18-TR](#) [ECS-040-S-18-TR](#) [ECS-036-S-18-TR](#) [ECS-073-S-18-TR](#) [ECS-098.3-S-18-TR](#) [ECS-](#)
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[80-S-18-TR](#) [ECS-73-S-18-TR](#) [ECS-80-20-18-TR](#) [ECS-100-S-18-TR](#) [ECS-240-20-18-TR](#) [ECS-196.6-S-18-TR](#) [ECS-](#)
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