

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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#### **CARDINAL COMPONENTS**

### **Low Profile Surface Mount Crystals**

Cardinal "AT-Strip" surface mount crystals are among the most readily available on the market today. Many popular frequencies are kept in stock at our facility.





Part Numbering Example: CSM1 Z - A1 B2 C2 200 - 3.579545 D18 - 3

| CSM1   | Z                 | <b>A1</b> *                  | B2                     | C <sub>2</sub>   | - I -      | 3.579545         | _ [ -          | - 3        |
|--------|-------------------|------------------------------|------------------------|------------------|------------|------------------|----------------|------------|
| SERIES | ADDED FEATURES    | <b>OPERATING TEN</b>         | IP. STABILITY          | <b>TOLERANCE</b> | RESISTANCE | <b>FREQUENCY</b> | LOAD CAP.      | OVERTONE   |
| CSM1   | BLANK = BULK PACK | $A0 = -10^{\circ}C \sim +60$ | $^{\circ}$ C B1 = ±100 | $C1 = \pm 100$   | SEE CHART  |                  | D16,18,20,ETC. |            |
|        | Z = TAPE AND REEL | $A1 = -10^{\circ}C \sim +70$ | $^{\circ}$ C B2 = ± 50 | $C2 = \pm 50$    | BELOW      |                  | DS = SERIES    | -3: 3rd OT |
|        |                   | $A2 = -40^{\circ}C \sim +85$ | $^{\circ}$ C B3 = ± 30 | $C3 = \pm 30$    |            |                  |                |            |
|        |                   |                              | $B4 = \pm 10$          | $C4 = \pm 10$    |            |                  |                |            |

\*NOTE: The above ABC combinations cover basic specification options. We tailor our crystal specifications to meet customer requirements. Please contact our sales department if you don't see exactly what you need.

#### **Specifications:**

#### Frequency Range:

3.579545~36.000 MHz AT Cut Fundamental 36.000000~80.000 MHz AT Cut 3rd Overtone

**Operating Temperature:** -10°C ~ +70°C Standard -40°C ~ +85°C Frequency Stability: ±100 ppm ± 50 ppm Standard ± 30 ppm ± 15 ppm **Frequency Tolerance:** ±100 ppm (at 25°C) ± 50 ppm Standard ± 30 ppm ± 10 ppm

**Load Capacitance:** Standard 18 pF or series.

Please specify your required load.

**Resistance:** Maximum resistance corresponds to frequency.

See chart below.

Standard: Mode: Fundamental or 3rd Overtone

Shunt Capacitance: 7 pF Max

Aging: ± 5 ppm/year Drive Level: 1.0 mW Max

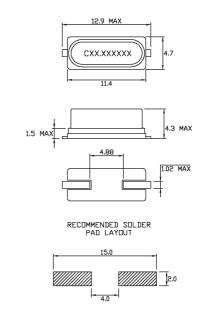
Optional Features: Tape and Reel (1K per Reel)

Note: Not all combinations of the above tolerances, stabilities, and temperature ranges are available. Consult the factory if your requirement is not standard.

#### Resistance Chart: All resistances are maximum values.

| Frequency Range            | MODE | E.S.R  |
|----------------------------|------|--------|
| Fo≦ 3.58 MHz               | A1   | <140 € |
| 4 MHz < Fo < 5 MHz         | A1.  | <120 Ω |
| 5 MHz ≦ Fo < 7 MHz         | A1   | <80 Ω  |
| 7 MHz ≦ Fo < 9 MHz         | A1   | <45 Ω  |
| 9 MHz <b>≤</b> Fo < 13 MHz | A1   | <40 Ω  |
| 13 MHz ≦ Fo < 16 MHz       | A1   | <35 ∩  |
| 16 MHz ≦ Fo < 20 MHz       | A1   | <30 Ω  |
| 20 MHz ≤ Fo < 30 MHz       | A1   | <25 Ω  |
| 30 MHz ≦ Fo < 36 MHz       | A1   | <25 Ω  |
| 30 MHz ≦ Fo < 36 MHz       | A3   | <80 0  |
| 36 MHz ≦ Fo ≦ 80 MHz       | A3   | <80 Ω  |

#### CSM1



## **Cardinal Components, Inc.**

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