

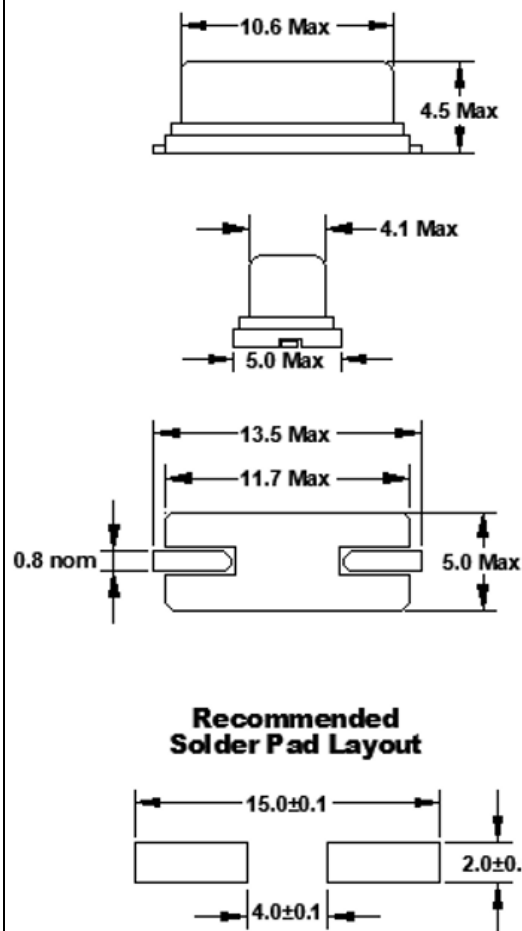
## Features

- Tolerances down to  $\pm 10$  ppm
- Stabilities down to  $\pm 5$  ppm
- Operating Temperature Range to  $-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$

| STANDARD SPECIFICATIONS                        |                                                 |
|------------------------------------------------|-------------------------------------------------|
| PARAMETERS                                     | MAX (Unless otherwise noted)                    |
| Frequency Range                                | 3.200 ~ 80.000 MHz                              |
| Frequency Tolerance @ 25°C                     | (See options below)                             |
| Frequency Stability, ref 25°C                  |                                                 |
| Over Operating Temp Range                      | (See options below)                             |
| Temperature Range                              |                                                 |
| Operating ( $T_{OPR}$ )                        | (See options below)                             |
| Storage ( $T_{STG}$ )                          | $-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$ |
| Shunt Capacitance ( $C_0$ )                    | 7 pF                                            |
| Load Capacitance ( $C_L$ )                     | (See options below)                             |
| Drive Level                                    | 0.5mW (100 $\mu$ W Typical)                     |
| Aging per year (@ 25°C)                        | $\pm 3$ PPM                                     |
| Maximum Soldering Temp / Time                  | 260°C / 10 Seconds x 2                          |
| Moisture Sensitivity Level (MSL) per J-STD-033 | 1                                               |
| Termination Finish                             | Sn/Ag3.0/Cu0.5                                  |
| Seal Method                                    | Resistance Weld                                 |
| Lead (Pb) Free                                 | Yes                                             |
| RoHS Compliant                                 | Yes-No Exemptions                               |

| Frequency Range (MHz) | Operating Mode | Max ESR $\Omega$ |
|-----------------------|----------------|------------------|
| 3.200 ~ 3.500         | Fundamental    | 300              |
| >3.500 ~ 4.000        | Fundamental    | 200              |
| >4.000 ~ 5.000        | Fundamental    | 150              |
| >5.000 ~ 6.000        | Fundamental    | 120              |
| >6.000 ~ 7.000        | Fundamental    | 100              |
| >7.000 ~ 9.000        | Fundamental    | 80               |
| >9.000 ~ 13.000       | Fundamental    | 60               |
| >13.000 ~ 20.000      | Fundamental    | 40               |
| >20.000 ~ 40.000      | Fundamental    | 30               |
| 24.000 ~ 70.000       | 3rd OT         | 100              |
| >70.000 ~ 80.000      | 3rd OT         | 70               |

## DIMENSIONS / MECHANICAL SPECIFICATIONS



Dimensions are in millimeters.

Note: Dimensional drawing is for reference to critical specifications defined by size measurements. Certain non-critical visual attributes, such as side castellations, etc. may vary.

## AVAILABLE OPERATING TEMPERATURES AND STABILITIES\*

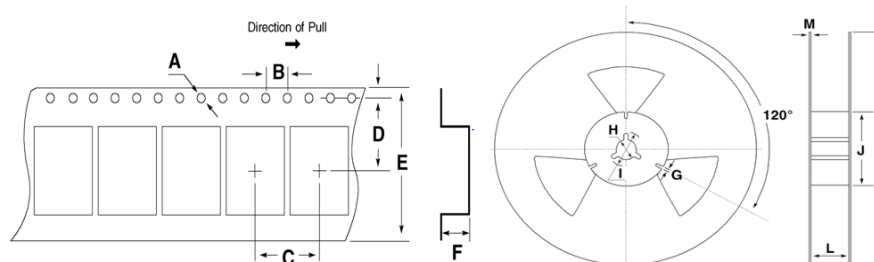
| Operating Temperature | ±5 PPM | ±10 PPM | ±15 PPM | ±20 PPM | ±25 PPM | ±30 PPM | ±50 PPM | ±100 PPM |
|-----------------------|--------|---------|---------|---------|---------|---------|---------|----------|
| -10°C to +60°C        | O      | O       | O       | O       | O       | O       | O       | O        |
| -20°C to +70°C        | Δ      | O       | O       | O       | O       | O       | O       | O        |
| -40°C to +85°C        | X      | X       | O       | O       | O       | O       | O       | O        |
| -40°C to +105°C       | X      | X       | X       | X       | X       | Δ       | O       | O        |
| -40°C to +125°C       | X      | X       | X       | X       | X       | X       | Δ       | O        |
| -55°C to +125°C       | X      | X       | X       | X       | X       | X       | Δ       | O        |

Key: O = Available, X = Not Available, Δ = Consult Fox Technical Support \*Does not imply a stocked part.

## TAPE SPECIFICATIONS (mm)

| A     | B   | C    | D    | E    | F   | REEL QTY    | G   | H   | I   | J   | K    | L    | M   |
|-------|-----|------|------|------|-----|-------------|-----|-----|-----|-----|------|------|-----|
| ø1.55 | 4.0 | 12.0 | 11.5 | 24.0 | 4.8 | -T1 = 1,000 | 2.0 | ø13 | ø21 | ø80 | ø330 | 25.5 | 2.0 |

## REEL SPECIFICATIONS (mm)



## Available Options & Part Identification for Crystal Model C4SD<sup>1</sup>

Sample PN: **FC4SDCBMF25.0-T1**

| F          | C4SD                | C                                                                                                           | B                                                                                                                                               | M                                                                                                                                | F                                                                                                                                                              | 25.0                   | -T1                                                           |
|------------|---------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------------------------------------------------|
| <b>Fox</b> | <b>Model Number</b> | <b>Tolerance</b><br>B = ±50ppm<br><b>C = ±30ppm</b><br>D = ±25ppm<br>E = ±20ppm<br>F = ±15ppm<br>H = ±10ppm | <b>Stability</b><br>A = ±100 ppm<br><b>B = ±50 ppm</b><br>C = ±30 ppm<br>D = ±25 ppm<br>E = ±20 ppm<br>F = ±15 ppm<br>H = ±10 ppm<br>L = ±5 ppm | <b>Load Capacitance<sup>2</sup></b><br>A = Series<br>E = 10pF<br>G = 12pF<br>J = 15pF<br>K = 16pF<br>L = 18pF<br><b>M = 20pF</b> | <b>Operating Temperature</b><br>D = -10 to +60°C<br><b>F = -20 to +70°C</b><br>M = -40 to +85°C<br>P = -40 to +105°C<br>I = -40 to +125°C<br>T = -55 to +125°C | <b>Frequency (MHz)</b> | <b>Values Added Options</b><br>Blank = Bulk<br>T1 = 1,000 pcs |

1 Not all frequency, tolerance, stability, load, and operating temperature combinations may be available.

2 Listed load capacitances represent the most commonly used. Other load capacitances are available. Contact us for assistance

## Reliability Test Conditions

Please contact Abracon Quality Assurance department

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