

Features

- Tolerances down to ± 10 PPM
- Stabilities down to ± 10 PPM
- Temperature Ranges as wide as -55°C to $+125^{\circ}\text{C}$

| STANDARD SPECIFICATIONS | |
|--|--|
| PARAMETERS | MAX (Unless otherwise noted) |
| Frequency Range | 16.000 ~ 200.000 MHz |
| Frequency Tolerance @ 25°C | (See options below) |
| Frequency Stability, ref 25°C | (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) | 3 pF |
| Load Capacitance (C_L) | (See options below) |
| Drive Level | 100 μW |
| Aging per year (@ 25°C) | ± 5 PPM |
| Maximum Soldering Temp / Time | 260°C / 10 Seconds x 2 |
| Moisture Sensitivity Level (MSL) per J-STD-033 | N/A |
| Termination Finish | Au (0.3~1.0 μm) over Ni (1.27~8.89 μm) |
| Seal Method | Seam Seal |
| Lead (Pb) Free | Yes |
| RoHS Compliant | Yes, no exemptions |
| REACH Compliant (latest version) | Yes |

| Frequency Range (MHz) | Operating Mode | Max ESR Ω |
|-----------------------|----------------|------------------|
| 16.000 ~ 19.199999 | Fundamental | 200 |
| 20.000 ~ 23.999999 | Fundamental | 120 |
| 24.000 ~ 29.999999 | Fundamental | 100 |
| 30.000 ~ 39.999999 | Fundamental | 80 |
| 40.000 ~ 200.000 | Fundamental | 60 |

| AVAILABLE OPERATING TEMPERATURES AND STABILITIES | | | | | | | |
|--|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Operating Temperature | ± 10 PPM | ± 15 PPM | ± 20 PPM | ± 25 PPM | ± 30 PPM | ± 50 PPM | ± 100 PPM |
| 0°C ~ +70°C | O | O | O | O | O | O | N/A |
| -10°C ~ +60°C | O | O | O | O | O | O | N/A |
| -10°C ~ +70°C | O | O | O | O | O | O | N/A |
| -20°C ~ +70°C | O | O | O | O | O | O | N/A |
| -30°C ~ +85°C | O | O | O | O | O | O | N/A |
| -40°C ~ +85°C | X | O | O | O | O | O | N/A |
| -40°C ~ +105°C | X | X | X | X | X | O | O |
| -40°C ~ +125°C | X | X | X | X | X | O | O |
| -55°C ~ +125°C | X | X | X | X | X | O | O |

Key: O = Available, X = Not Available, N/A = Not Applicable

| DIMENSIONS / MECHANICAL SPECIFICATIONS | |
|---|--------------------------------------|
| <p>Top View</p> | <p>0.55 max</p> |
| <p>Bottom View</p> | <p>Recommended Solder Pad Layout</p> |
| <p>Dimensions are in millimeters.</p> <p>Pin Connections #1 Crystal #3 Crystal #2 Lid/Gnd #4 Lid/Gnd</p> | |
| <p>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.</p> | |

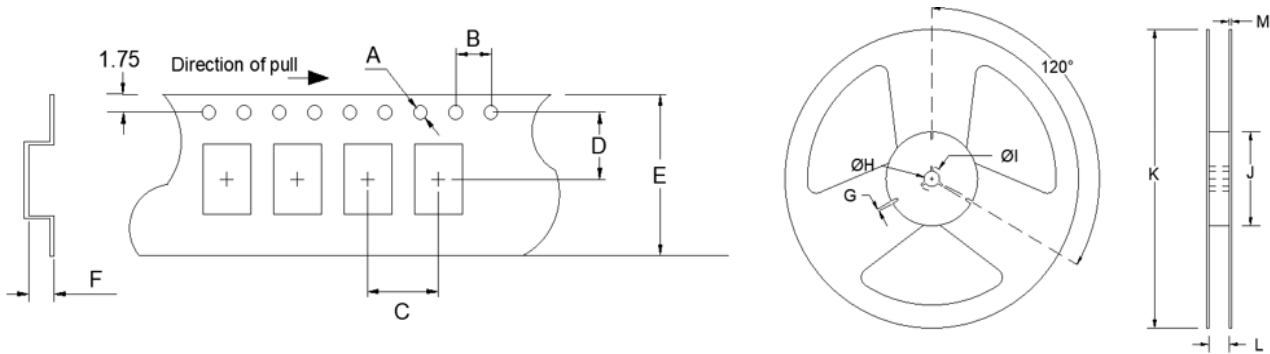
FC1BS

(Former FX2016B)

2.0mm x 1.6mm
Ceramic SMD Crystal



| TAPE SPECIFICATIONS (mm) | | | | | | | REEL SPECIFICATIONS (mm) | | | | | | |
|--------------------------|-----|-----|-----|-----|------|---|--------------------------|-------|-------|-------|--------|-----|-----|
| A | B | C | D | E | F | REEL QTY | G | H | I | J | K | L | M |
| ø1.55 | 4.0 | 4.0 | 3.5 | 8.0 | 0.65 | -T3 = 3,000 -T2 = 2,000 -T1 = 1,000 | 2.0 | ø13.0 | ø21.0 | ø60.0 | ø180.0 | 9.0 | 2.0 |



Available Options & Part Identification for Crystal Model C1BS¹

Sample PN: FC1BSEEEM32.0-T1

| F | C1BS | E | E | E | M | 32.0 | -T1 |
|------------|---------------------|---|---|--|---|------------------------|--|
| Fox | Model Number | Tolerance | Stability | Load Capacitance² | Operating Temperature | Frequency (MHz) | Values Added Options |
| | | B = ±50 PPM C = ±30 PPM D = ±25 PPM E = ±20 PPM F = ±15 PPM H = ±10 PPM | B = ±50 PPM C = ±30 PPM D = ±25 PPM E = ±20 PPM F = ±15 PPM H = ±10 PPM | V=7pF D=8pF W=9pF E=10pF G=12pF J=15pF L=18pF M=20pF | C = 0 ~ +70°C D = -10 ~ +60°C E = -10 ~ +70°C F = -20 ~ +70°C K = -30 ~ +85°C M = -40 ~ +85°C P = -40 ~ +105°C I = -40 ~ +125°C T = -55 ~ +125°C | | Blank = Bulk T1 = 1,000 pcs T2 = 2,000 pcs T3 = 3,000 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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[ABRACON:](#)

[FC1BSCCEM16.0-T3](#) [FC1BSHFDM96.0-T1](#) [FC1BSEEEM27.12-T1](#) [FC1BSEEEM27.120-T1](#)