



# 2.0x1.6mm Ceramic SMD Crystal C1BS

(former FX216B)

## DATASHEET

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

### • SPECIFICATIONS

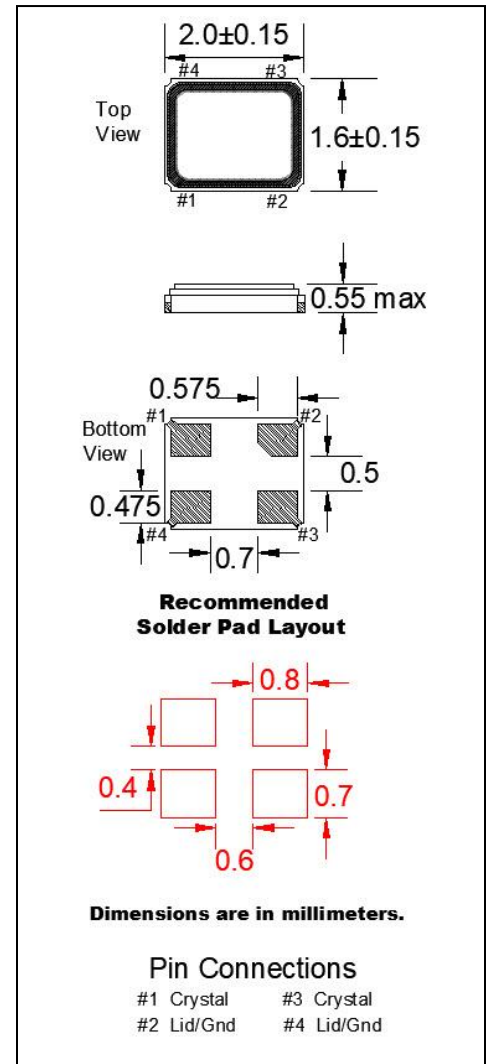
PARAMETERS	MAX (unless otherwise noted)
Frequency Range	16.000 ~ 200.000 MHz
Frequency Tolerance @ $25^{\circ}\text{C}$	(See options on page 2)
Frequency Stability, ref @ $25^{\circ}\text{C}$	(See options below)
Temperature Range	
Operating (TOPR)	(See options below)
Storage (TSTG)	$-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$
Shunt Capacitance ( $C_0$ )	3 pF
Load Capacitance ( $C_L$ )	(See options on page 2)
Drive Level	0.1 mW
Aging per year	$\pm 5$ PPM
Maximum Soldering Temp / Time	$260^{\circ}\text{C}$ / 10 Seconds x 2
Moisture Sensitivity Level (MSL) per J-STD-033	N/A
Termination Finish	Au ( $0.3 \sim 1\mu\text{m}$ ) over Ni ( $1.27 \sim 8.89\mu\text{m}$ )
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 $\Omega$
16.000 ~ 19.999999	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	$\pm 10$ PPM	$\pm 15$ PPM	$\pm 20$ PPM	$\pm 25$ PPM	$\pm 30$ PPM	$\pm 50$ PPM	$\pm 100$ PPM
0 ~ $+70^{\circ}\text{C}$	O	O	O	O	O	O	N/A
-10 ~ $+60^{\circ}\text{C}$	O	O	O	O	O	O	N/A
-10 ~ $+70^{\circ}\text{C}$	O	O	O	O	O	O	N/A
-20 ~ $+70^{\circ}\text{C}$	O	O	O	O	O	O	N/A
-30 ~ $+85^{\circ}\text{C}$	O	O	O	O	O	O	N/A
-40 ~ $+85^{\circ}\text{C}$	X	O	O	O	O	O	N/A
-40 ~ $+105^{\circ}\text{C}$	X	X	X	X	X	O	O
-40 ~ $+125^{\circ}\text{C}$	X	X	X	X	X	O	O
-55 ~ $+125^{\circ}\text{C}$	X	X	X	X	X	O	O

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



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.

7/23/2020 – Added thickness info to termination metals, adjusted MSL info to include J-STD-033 and N/A. Increased freq range to 200MHz.

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Title / Description: C1BS SERIES STANDARD SPECIFICATIONS

Drawing Number: C1BS-DOC-1

Part Number:

Draftsperson: BEC

Approved: MAJ

Size: A

Cage: 61429

Revision Date: 07/23/2020



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## DATASHEET

• TAPE SPECIFICATIONS (millimeters)							• REEL SPECIFICATIONS (millimeters)						
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 default -T2 = 2,000 -T1 = 1,000	2.0	Ø13.0	21.0	60.0	180.0	9.0	2.0

### Available Options & Part Identification for Crystal Model C1BS<sup>1</sup>

#### F C1BS E E E M 32.0

F	C1BS	E	E	E	M	32.0
<b>FOX</b>	<b>Model Number</b>	<b>Tolerance</b> B = ±50 PPM C = ±30 PPM D = ±25 PPM <b>E = ±20 PPM</b> F = ±15 PPM H = ±10 PPM	<b>Stability</b> B = ±50 PPM C = ±30 PPM D = ±25 PPM <b>E = ±20 PPM</b> F = ±15 PPM H = ±10 PPM	<b>Load Capacitance<sup>2</sup></b> V = 7 pF D = 8 pF W = 9 pF <b>E = 10 pF</b> G = 12 pF J = 15 pF L = 18 pF M = 20 pF	<b>Operating Temperature</b> C = 0 ~ +70°C D = -10 ~ +60°C E = -10 ~ +70°C F = -20 ~ +70°C K = -30 ~ +85°C <b>M = -40 ~ +85°C</b> P = -40 ~ +105°C I = -40 ~ +125°C T = -55 ~ +125°C	<b>Frequency (MHz)</b>

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

<sup>2</sup>Listed load capacitances represent the most commonly used.

Other load capacitances are available. Contact Fox Technical Support for assistance.



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