



# 7x5mm Ceramic SMD Crystal

# C7BS

(former FD)

## DATASHEET

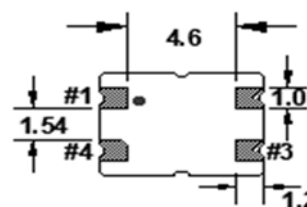
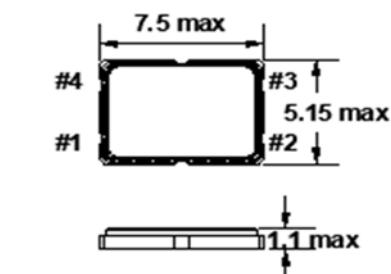
Tolerances down to  $\pm 10$  PPM

Stabilities down to  $\pm 5$  PPM

Operating Temperature Range to  $-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$

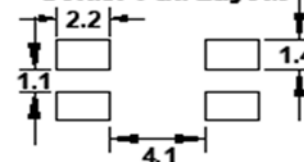
Fundamental (Inverted Mesa) > 50 MHz

• SPECIFICATIONS	
PARAMETERS	MAX (unless otherwise noted)
Frequency Range ( $F_o$ )	6.000 ~ 312.000 MHz
Frequency Tolerance @ 25°C	(See options on page 2)
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 ( $C_o$ )	5 pF
Load Capacitance ( $C_L$ )	(See options on page 2)
Drive Level	
6.000 ~ 100.000 MHz (Fund to 50MHz, 3rd OT, 5th OT)	0.5 mW
>50.000 ~ 312 MHz (Fund Inverted Mesa)	0.1 mW
Aging per year	$\pm 3$ PPM
Maximum Soldering Temp / Time	$260^{\circ}\text{C} / 10$ Seconds x 2
Moisture Sensitivity Level (MSL)	1
Termination Finish	Au over Ni
Seal Method	Seam
Lead (Pb) Free	Yes
RoHS/REACH Compliant	Yes



Dimensions in mm

### Recommended Solder Pad Layout



### Pin Connections

#4 - Lid/Gnd #3 - Crystal  
#1 - Crystal #2 - Lid/Gnd

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.

Frequency Range (MHz)	Operating Mode	Max ESR ( $\Omega$ )
6.000 ~ 9.999999	Fundamental	80
10.000 ~ 15.999999	Fundamental	50
16.000 ~ 31.999999	Fundamental	40
32.000 ~ 39.999999	Fundamental	30
40.000 ~ 312.000	Fundamental	20
28.000 ~ 84.000	3 <sup>RD</sup> OT	70
84.000 ~ 100.000	5 <sup>TH</sup> OT	80

### •Available Operating Temperatures and Stabilities

Operating Temperature	$\pm 5$ PPM	$\pm 10$ PPM	$\pm 15$ PPM	$\pm 20$ PPM	$\pm 25$ PPM	$\pm 30$ PPM	$\pm 50$ PPM	$\pm 100$ PPM
0 ~ +70°C	X	O	O	O	O	O	O	N/A
-10 ~ +60°C	O	O	O	O	O	O	O	N/A
-10 ~ +70°C	X	O	O	O	O	O	O	N/A
-20 ~ +70°C	X	O	O	O	O	O	O	N/A
-30 ~ +85°C	X	X	O	O	O	O	O	N/A
-40 ~ +85°C	X	X	O	O	O	O	O	N/A
-40 ~ +105°C	X	X	X	X	X	X	O	O
-40 ~ +125°C	X	X	X	X	X	X	O	O
-55 ~ +155°C	X	X	X	X	X	X	O	O

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



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Title / Description: C7BS SERIES STANDARD SPECIFICATIONS

Drawing Number: C7BS-DOC-2

Size: A

Part Number:

Cage: 61429

Draftsperson: BEC

Approved: MAJ

Revision Date: 06/04/2019



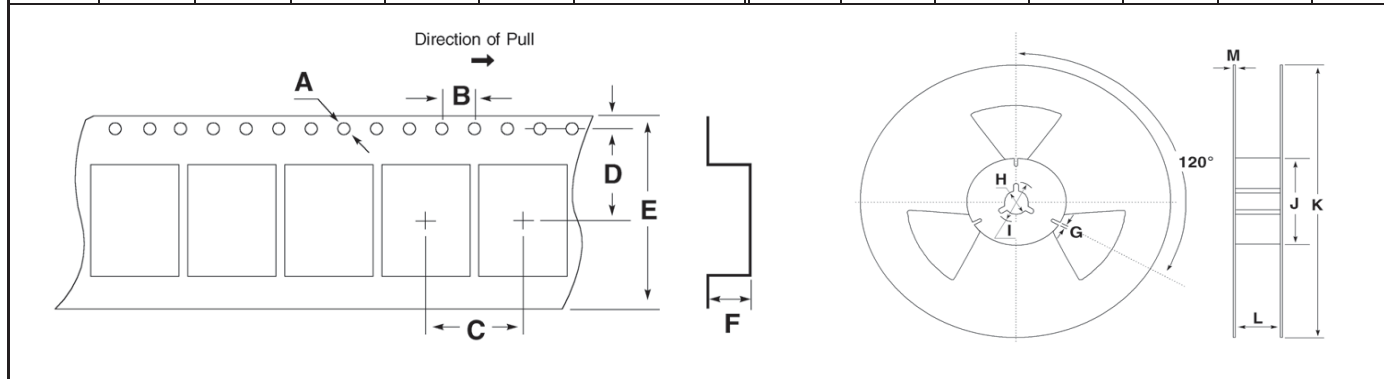
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• TAPE SPECIFICATIONS (millimeters)							• REEL SPECIFICATIONS (millimeters)						
A	B	C	D	E	F	Reel QTY	G	H	I	J	K	L	M
Ø1.55	4.0	8.0	7.5	16.0	1.7	-T1 = 1,000 -T2 = 2,000	2.0	Ø13	Ø21	Ø80	Ø250	17.5	2.0



### Available Options & Part Identification for Crystal Model C7BS<sup>1</sup>

#### F C7BS B B M D 25.0

F	C7BS	B	B	M	D	25.0
FOX	Model Number	Tolerance	Stability	Load Capacitance <sup>2</sup>	Operating Temperature	Frequency (MHz)
		<b>B = ±50 PPM</b> C = ±30 PPM D = ±25 PPM E = ±20 PPM F = ±15 PPM H = ±10 PPM	A = ±100 PPM <b>B = ±50 PPM</b> C = ±30 PPM D = ±25 PPM E = ±20 PPM F = ±15 PPM H = ±10 PPM L = ±5 PPM	E = 10 pF G = 12 pF J = 15 pF K = 16 pF L = 18 pF <b>M = 20 pF</b>	C = 0 to +70°C <b>D = -10 to +60°C</b> E = -10 to +70°C F = -20 to +70°C K = -30 to +85°C M = -40 to +85°C P = -40 to +105°C I = -40 to +125°C T = -55 to +125°C	

<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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<b>Drawing Number:</b> C7BS-DOC-2	<b>Size:</b> A
<b>Part Number:</b>	<b>Case:</b> 61429
<b>Draftsperson:</b> BEC	<b>Approved:</b> MAJ
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