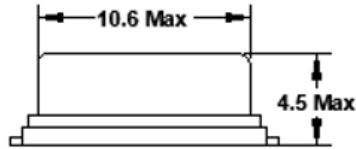
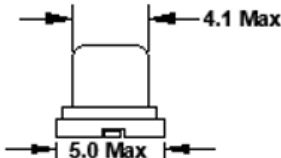
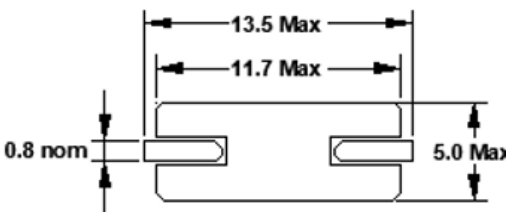
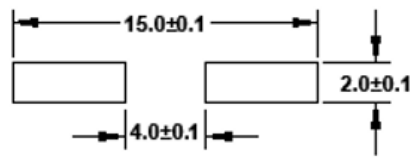


### Features

- 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



<p><b>Recommended Solder Pad Layout</b></p>  <p>Dimensions are in millimeters.</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>

### AVAILABLE OPERATING TEMPERATURES AND STABILITIES\*

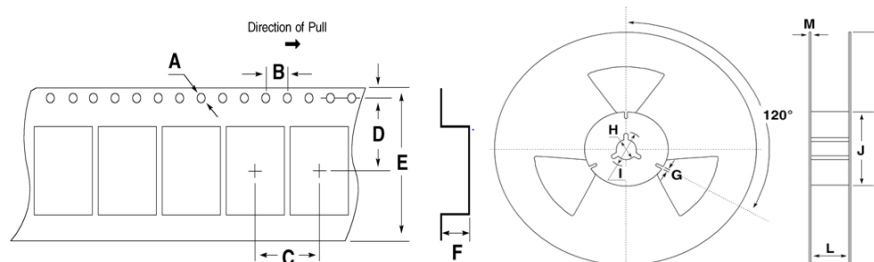
Operating Temperature	±5 PPM	±10 PPM	±15 PPM	±20 PPM	±25 PPM	±30 PPM	±50 PPM	±100 PPM
-10°C to+60°C	O	O	O	O	O	O	O	O
-20°C to +70°C	Δ	O	O	O	O	O	O	O
-40°C to +85°C	X	X	O	O	O	O	O	O
-40°C to+105°C	X	X	X	X	X	Δ	O	O
-40°C to+125°C	X	X	X	X	X	X	Δ	O
-55°C to+125°C	X	X	X	X	X	X	Δ	O

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

### TAPE SPECIFICATIONS (mm)

### REEL 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



### 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> B = ±50ppm <b>C = ±30ppm</b> D = ±25ppm E = ±20ppm F = ±15ppm H = ±10ppm	<b>Stability</b> 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	<b>Load Capacitance<sup>2</sup></b> A = Series E = 10pF G = 12pF J = 15pF K = 16pF L = 18pF <b>M = 20pF</b>	<b>Operating Temperature</b> D = -10 to +60°C <b>F = -20 to +70°C</b> M = -40 to +85°C P = -40 to +105°C I = -40 to +125°C T = -55 to +125°C	<b>Frequency (MHz)</b>	<b>Values Added Options</b> Blank = Bulk 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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[FC4SDDAMM6.0-T1](#) [FC4SDEBLF8.0-T1](#) [FC4SDBBMF3.2-T1](#) [FC4SDCBGF24.0-T1](#) [FC4SDCCEM15.0-T1](#)  
[FC4SDCCEM8.0-T1](#) [FC4SDBBLM10.0-T1](#) [FC4SDBBMM6.0-T1](#) [FC4SDEBLM8.0-T1](#) [FC4SDCBLM8.0-T1](#)  
[FC4SDCCEM12.12187-T1](#) [FC4SDCCMF4.0-T1](#) [FC4SDBBMM8.0-T1](#) [FC4SDCBEP13.52313-T1](#) [FC4SDCCGM12.0-T1](#)  
[FC4SDCBLM12.0-T1](#) [FC4SDCBLM4.0-T1](#) [FC4SDCBMC20.0-T1](#)  
[FC4SDCCGF8.0-T1](#) [FC4SDCCGM4.0-T1](#) [FC4SDBAMF16.0-T1](#) [FC4SDBBGF16.0-T1](#) [FC4SDBALF25.0-T1](#)  
[FC4SDBALF16.0-T1](#) [FC4SDCBGF8.0-T1](#) [FC4SDCCGM4.19-T1](#) [FC4SDCCLM6.0-T1](#) [FC4SDCCEM9.81293-T1](#)  
[FC4SDBBLM12.0-T1](#) [FC4SDCCLF16.0-T1](#) [FC4SDHHUE44.545-1-T1](#) [FC4SDBBEF11.0592-T1](#) [FC4SDCBQM25.0-T1](#)  
[FC4SDDDMC32.768-T1](#) [FC4SDCBKC20.0-T1](#) [FC4SDCBRF14.31818-T1](#) [FC4SDDDMC25.0-T1](#)  
[FC4SDECKF13.4916-T1](#) [FC4SDEEMM10.0-T1](#) [FC4SDBBLM8.0-T1](#) [FC4SDCBGM12.0-T1](#) [FC4SDCBKF8.0-T1](#)  
[FC4SDCCEM12.14-T1](#) [FC4SDCCEM16.0-T1](#) [FC4SDDDMC24.0-T1](#) [FC4SDCBMF48.0-1-T1](#) [FC4SDCBMF3.579545-T1](#)  
[FC4SDCBLM10.0-T1](#) [FC4SDCBLM16.0-T1](#) [FC4SDCBLM4.9125-T1](#) [FC4SDCCMF32.11-T1](#)  
[FC4SDBALF3.6864-T1](#) [FC4SDBAMF25.0-T1](#) [FC4SDBBAF8.0-T1](#) [FC4SDBBKE9.216-T1](#) [FC4SDBBKM9.216-T1](#)  
[FC4SDBBLF4.0-T1](#) [FC4SDCCQE38.88-1-T1](#) [FC4SDDDMC32.768-T1](#) [FC4SDFBMM25.0-T1](#) [FC4SDFEUF44.545-1-T1](#)  
[FC4SDHCMM25.0-T1](#) [FC4SDCBMM11.0592-T1](#) [FC4SDCBQM13.56-T1](#) [FC4SDCCGF4.0-T1](#)  
[FC4SDCCLF7.3728-T1](#) [FC4SDCCMM24.576-T1](#) [FC4SDCBMF11.0592-T1](#) [FC4SDCBMF14.7456-T1](#)  
[FC4SDCBMF6.144-T1](#) [FC4SDCBLF4.545-T1](#) [FC4SDCBLF7.3728-T1](#) [FC4SDCBLM3.6864-T1](#) [FC4SDCBLM4.9152-T1](#)  
[FC4SDCBME14.7456-T1](#) [FC4SDBBLM7.3728-T1](#) [FC4SDCADT24.576-T1](#) [FC4SDCBGM4.096-T1](#)  
[FC4SDCBKM25.0-T1](#) [FC4SDCBLF16.0-T1](#) [FC4SDBBAF7.3728-T1](#) [FC4SDBBMF30.0-T1](#) [FC4SDEEKM8.0-T1](#)  
[FC4SDBBGM12.0-T1](#) [FC4SDCBEF8.0-T1](#) [FC4SDBBLM3.579545-T1](#) [FC4SDCBEF24.0-T1](#) [FC4SDCBMF8.004-T1](#)  
[FC4SDCCMF25.0-T1](#) [FC4SDCBAF4.9152-T1](#)