



PRODUCT APPROVAL SHEET



Product Type	XSD-49SMD Quartz Crystal
Spec No.	CXB006XSD055
CREC's P/N	01.X.SD.112JLRI0025000000
Description	XSD 25MHz 12pF ± 20 ppm 35ohm (± 30 ppm -20~70°C)
Customer Number	CXB006
Customer P/N	-
Customer Name	-
Version	A0

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Assembly				
Test				
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1 Parts explanation

This part is a miniature AT cut stirp crystal units with 49SMD Q miniature BASE. It is mainly used in mobile , wifi, bluetooth and telecommunications application.

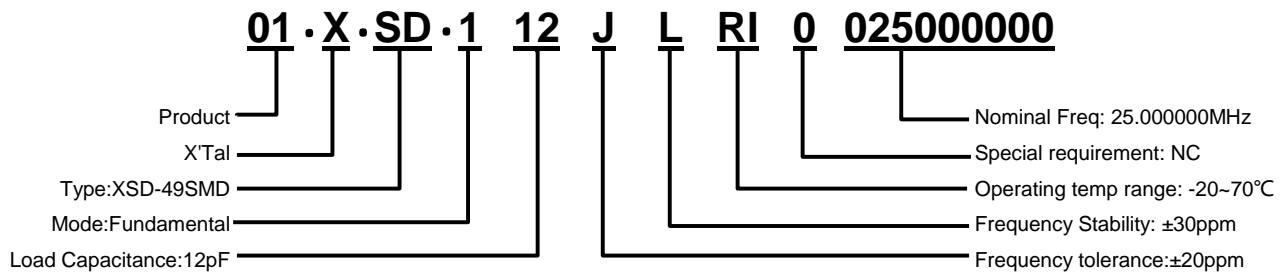
2 SCOPE

This specification only covers CREC's CXB006XSD055

3 Reference Standard

- 3.1 MIL-STD-883H :Environmental tests' Mechanical tests.
- 3.2 MIL-STD-202 : Test Methods for Electronic and Electrical component part.
- 3.3 IEC 60068-2 :Environmental tests' Mechanical tests.
- 3.4 ANSI/EIA-481-C : 8mm through 200mm enbossed carrier taping and 24mm punched
- 3.5 JEDEC J-STD-020C: Soldering

4 Title Guide



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5 Performance

Electrical Performance. Electrical characteristics measured by S&A250B.

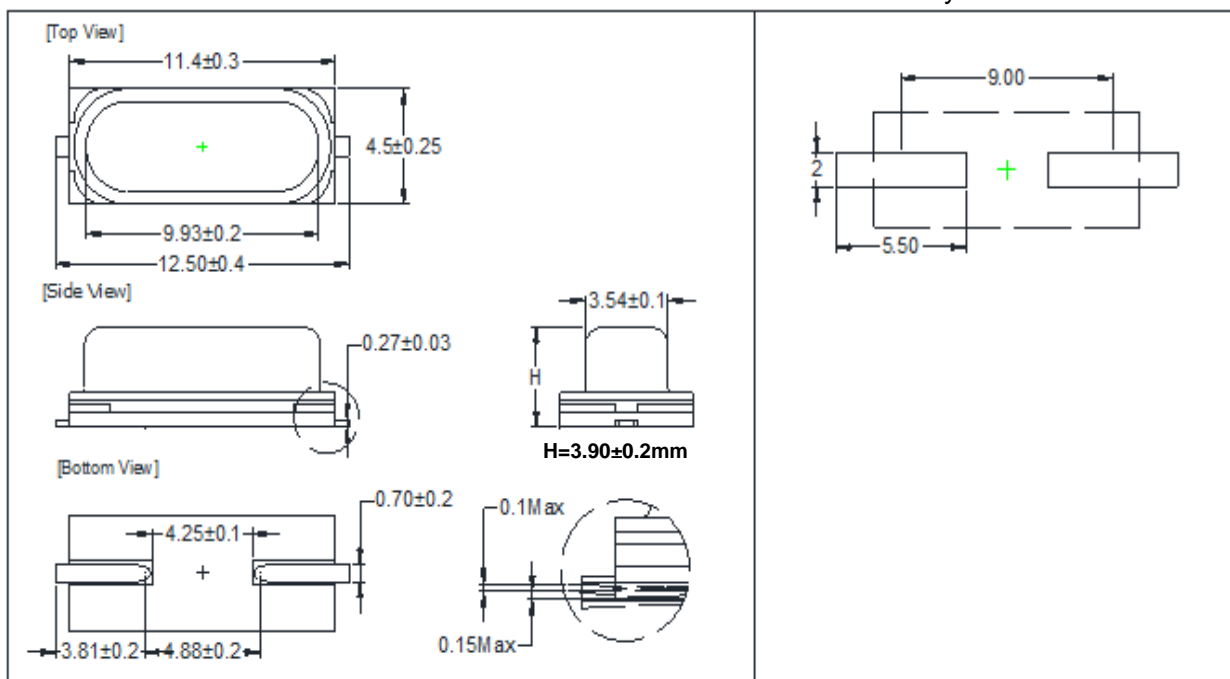
No.	Item	Symb.	Electrical Specification				Remark (Humidity: 40%~60%)	
			Min.	Type	Max.	Unit		
1	Nominal Frequency	F0	25.000000				MHz	-
2	Mode of vibration	-	Fundamental				-	-
3	Frequency tolerance	$\Delta F/F0$	-20	-	20	ppm	25°C±3°C	
4	Operating Temperature Range	T _{OPR}	-20	-	70	°C	-	
5	Frequency Stability	T _c	-30	-	30	ppm	-20~70°C	
6	Storage Temperature	T _{stg}	-55	-	125	°C	-	
7	Load Capacitance	CL	-	12	-	pF	-	
8	Equivalent Series Resistance	ESR	-	-	35	Ω	25°C±3°C	
9	Drive Level	DL	-	100	-	μW	-	
10	Insulation Resistance	IR	500	-	-	Mohm	@DC100V	
11	Shunt Capacitance	C0	-	-	7	pF	25°C±3°C	
12	Motional Capacitance	C1	-	-	-	fF	25°C±3°C	
13	Trim Sensitivity	T _s	-	-	-	ppm/pF	25°C±3°C	
14	Spurious	SPDB	-	-	-	dB	-	
15	Aging	Aging	-5	-	5	ppm	First Year	

6 Figure

6.1 Product Dimensions and Solder Pad Layout Dimensions

Product Dimensions

Solder Pad Layout Dimensions



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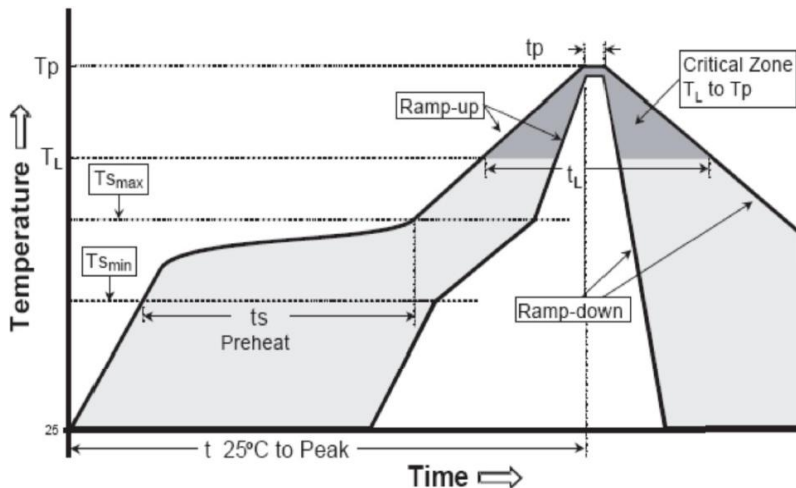


6.2 Marking



No.	Item		E.G.	Remark
1	CREC	LOGO	CREC	-
2	XX.XXX	Nominal Frequency (MHz) 6digit	25.000	25.000=25.000000MHz

7 IR Reflow Profile



Remark: Reference JEDEC J-STD-020C

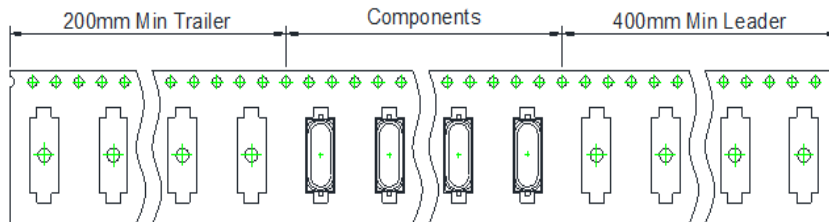
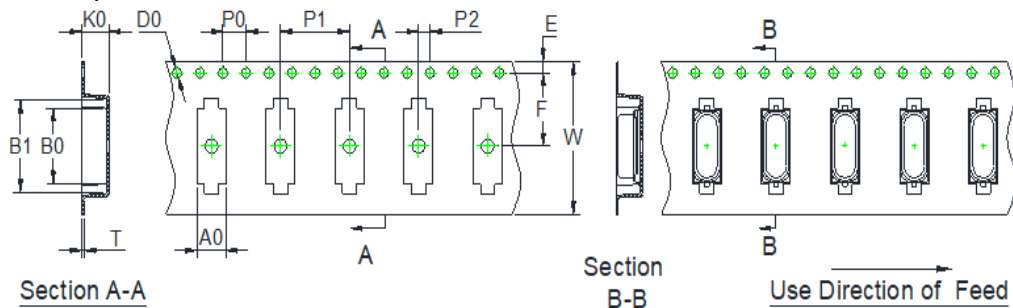
Profiles Feature	Pb-Free Assembly
Average Ramp-up Rate (Ts max to Tp)	3°C/second max.
Preheat	
■ Temperature Min (Ts min)	125°C
■ Temperature Max (Ts max)	200°C
■ Time (ts min to ts max)	60~180 seconds
Time maintained above	
■ Temperature (TL)	217°C
■ Time (tL)	60~150 seconds
Peak/Classification Temperature (Tp)	260°C
Time within 5°C of actual Peak	20~40 seconds
Temperature (tp)	
Ramp-down rate	6°C/second Max
Time 25°C to Peak Temperature	8 minutes Max
Suggest reflow times	3 times

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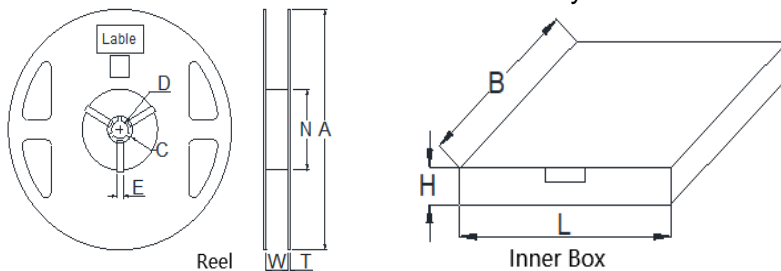
8 Packing specification

8.1 Tape Dimensions



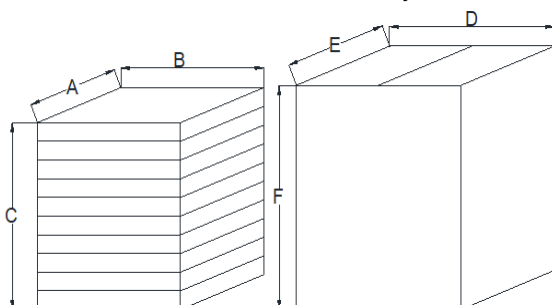
ITEM	W	P1	E	F	D0	P0	P2	A0	B0	B1	K0	T
Spec(mm)	24.0	12.0	1.75	11.5	1.55	4.00	2.00	5.00	11.7	15.0	4.25	0.40
Tol.(mm)	±0.50	±0.20	±0.2	±0.20	±0.05	±0.10	±0.10	±0.20	±0.20	±0.2	±0.20	±0.05

8.2 Reel and Inner Box Dimensions and Q'ty



Item	Reel							Inner Box		
	A	W	N	C	D	E	T	L	B	H
SPEC(mm)	330	25.0	100	20.0	13.0	2.5	2.4	340	340	40
Tol.(mm)	±2.0	±0.5	±0.5	±1.0	±0.5	±0.5	±0.2	-	-	-
Q'ty (pcs)	1K/Reel Max							1K/Box Max		

8.3 Carton Dimensions and Q'ty



Item	A	B	C	D	E	F
SPEC(mm)	340	340	400	380	380	480
Q'ty (pcs)	10K/Carton Max					

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9 Reliability Test Item

No.	Item	Test Condition	Reference
1	High Temperature Storage	Temperature: 125°C ± 3°C, Time 500 hours	MIL-STD-202 Method 108
2	Temperature Cycle	Low temp.: -55±3°C, Soak 30 min Max. High Temp.: 125±3°C, Soak 30 min Max. Transition time: 1 min Max. Cycle Times: 500 Cycle.	JEDEC JESD22-A104E, Condition G
3	Biased Humidity	Temperature: 85°C ± 2°C Relative Humidity: 85% Time: 500 hours.	MIL-STD-202 Method 103
4	Low Temperature Storage	Temperature: -40°C ± 3°C Time: 500 hours.	IEC 60068-2-1
5	Thermal shock	Low temp.: -40±3°C, Soak 15 min Max. High Temp.: 125±3°C, Soak 15 min Max. Transition time: 15 sec Max. Cycle Times: 100 Cycle.	MIL-STD-883H METHOD 1011.9
6	Vibration	Frequency range: 10 to 2000Hz, full wave, Amplitude: 1.52mm Min (Peak to Peak), Accelerated: 5g, Direction: X, Y, Z, Duration: 20 minutes 4 cycles each of 3 direction.	MIL-STD-202 METHOD 204
7	Resistance to Soldering Heat	IR Reflow, Pre-Heating:125°C to 200°C, 60~120 Seconds, Heating:217°C, 60 to 150 Sec, Peak temperature: 260± 5°C, Time: 30±10 sec, Times:2 times.	MIL-STD-202 Method 210B
8	Solderability (Mothed B1)	Temperature: 245 ± 5°C, Time: 5 ~ 5.5 Sec.	J-STD-002 Mothed B1
9	Fine Leak	Helium Bombing:0.4~0.5Mpa, Time:1 hour.	MIL-STD-883H Method 1014.13
10	Drop Test	Hight: 90cm, Times: 2 times on hardWood.	IEC68-2-32 Free Fall
11	IR Reflow	Pre-Heating:125°C to 200°C, 60~120 Seconds, Heating:217°C, 60 to 150 Sec, Peak temperature: 260± 5°C, Time: 30±10 sec, Times:2 times.	JEDEC J-STD-020C

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10 Product handling and control procedure

10.1 Precautions for storage

Storage of crystal units under higher temperature or high humidity for a long term may affects frequency stability or solderability. Please store the crystal units under the normal temperature and humidity without exposing to direct sunlight and dew condensation, and avoid the storage of crystal units for more than 6 months, and mount them as soon as possible after unpacking.

Item		Electrical Specification			
		Min.	Type	Max.	Unit
Storage peiod	After customer assembly	15		-	Year
	Crystal unused	-		2	Year

10.2 Mounting of SMD Type products

When using an automatic loading machine, please test and confirm to cause no damage to the crystal units before mounting. Bending the circuit board in the process of cleaving boards after mounting and soldering crystal units may cause peeling off the soldering or package cracks by mechanical stress.

10.3 Ultrasonic cleaning

General cleaning solutions or ultrasonic cleaning method may be used to clean CREC's products. However, under certain circumstances, ultrasonic cleaning machine could generate resonance at the oscillaton frequency of our products and thus deteriorate the electrical characteristics in devices, and even damage the overall structure of devices. Therefore, verification test is recommended before cleaning.

10.4 Ultrasonic welding

Avoid mounting and processing by Ultrasonic welding this method has a possibility of an excessive vibration spreading inside the crystal products and becoming the cause of characteristic deterioration and not oscillating. If Ultrasonic welding is being used in process, please notify us in advance to verify it.

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