



**LUCKI CM ELECTRONICS Co.,Ltd**



APPROVAL SHEET

Customer : \_\_\_\_\_

Part Number: 3225 Seam Sealing Crystal  
\_\_\_\_\_

LK Part No.: L327S163S11L  
\_\_\_\_\_

Holder : SMD 3225  
\_\_\_\_\_

Frequency: 16.384MHZ 18PF ± 10PPM  
\_\_\_\_\_

Manufacturer: Lucki Electronics  
\_\_\_\_\_

Date: 2023-05-22  
\_\_\_\_\_

Prepared	Checked	Approved
Zhao Qian	Zhang Dongwei	Zhang Bin

(For Customer Use)

Acceptable	



**LUCKI CM ELECTRONICS Co.,Ltd**



Revision History

No.	Revised Date	Change Content	Approved	Remark



## LUCKI CM ELECTRONICS Co.,Ltd



### 1. Electrical characteristics

Items	Symbol	Specification			Unit	Notes
		Min	Typ	Max		
Model No		Seam Seal 3225				
Blank Cutting Mode		AT FUND.				
Nominal Frequency	F0	16.384000			MHz	
Oscillation Mode		■ Fundamental □3rd				
Frequency Tolerance	$\Delta F/F0$	-10		10	ppm	25°C ± 3°C
Load Capacitance	CL		18		pF	
Frequency Stability	TC	-20		20	ppm	
Operating Temperature	Topr	-40		85	°C	
Storage Temperature	Tstg	-55	~	125	°C	
Drive Level	DL		100	300	uW	
Effective Resistance RR	Rr	-	-	40	Ω	
Shunt Capacitance C0	C0	-	-	2	pF	
Trim Sensitivity TS	TS	-	-	-	ppm/PF	
Insulation Resistance	IR	500	-	-	MΩ	at DC 100 V
Aging:	Fa	-2		2	ppm	Per year
Weight			0.0163		g	

**Remark:** Sample Data See Attachment

#### Measure equipment :

Electrical characteristics measured by S&A 250B or equivalent.

#### Hermetically :

**Fine Leak:** Helium Bombing 4kg/cm<sup>2</sup> for 1 Hour, Leak ate Less Than <sup>-8</sup>atm. cc/sec 1×10

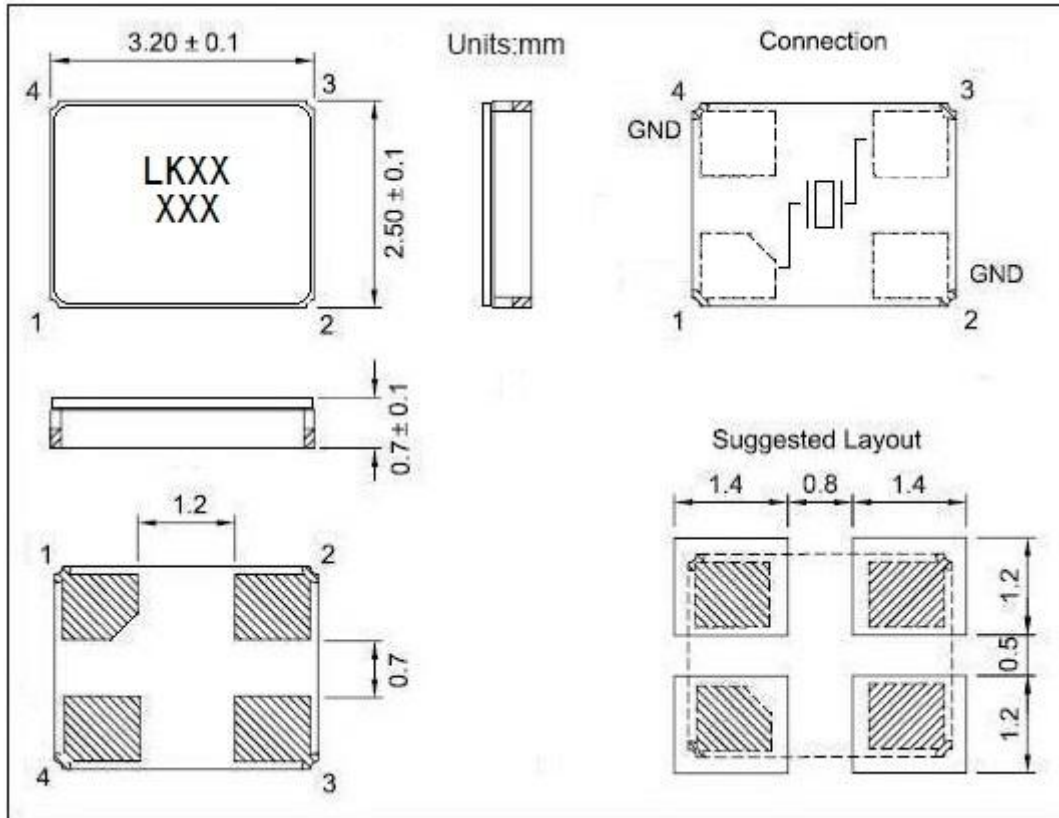
**Gross Leak:** 125°C FC#40 , 120 Seconds, No Bubble



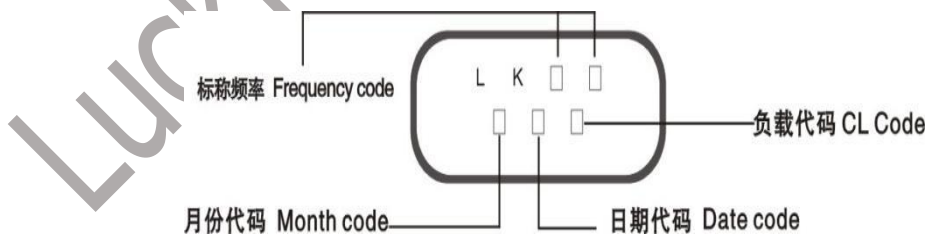
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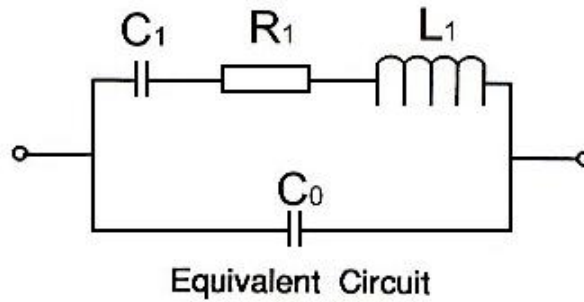
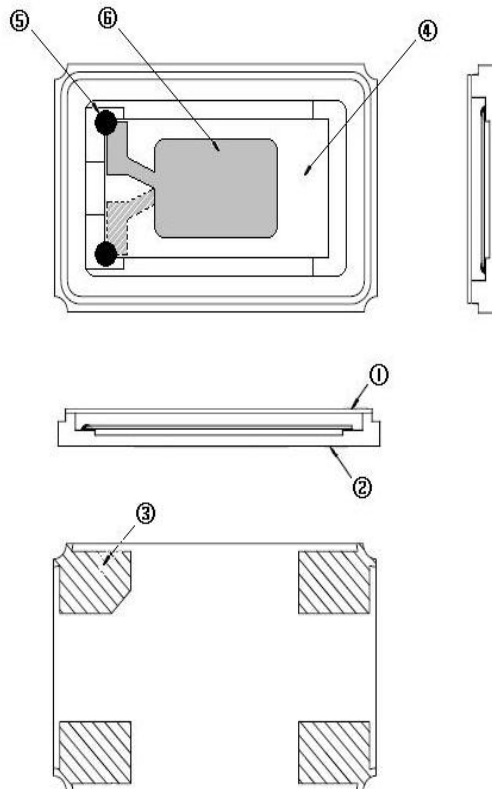


## 2.Solder Dimension And Pattern



## 3. Marking specification



**4. Equivalent Circuit**

**5. Structure drawing**


NO	COMPONENTS	MATERIALS	QTY	FINISH / SPECIFICATIONS
1	Cap	Metal ( Fe )	1	-
2	Base	Ceramic	1	Color black
3	PAD	Au	4	Tungsten metalize + Ni plating + Au plating
4	Crystal Blank	SiO <sub>2</sub>	1	-
5	Conductive Adhesive	Ag	4	Silicone
6	Electrode	Ag + Cr	2	-



## LUCKI CM ELECTRONICS Co.,Ltd



### 6. Reliability Specification

Item	Condition	Standard
1. Drop characteristics	Free drop from 100cm height on a hard wooden board for 3 times. (Board is thickness more than 30 mm.)	Frequency change: $\leq \pm 5\text{ppm}$ Rr as specification
2. Mechanical shock	Device are shocked to half sine wave (1000g) three mutually perpendicular axes each 3 times	Frequency change: $\leq \pm 5\text{ppm}$ Rr as specification
3. Shake characteristics	Shake frequency 10~55Hz, cyc1~2 minutes, swing 1.5mm, direction x/y/z, all 30 minutes, test after 2 hours.	Frequency change: $\leq \pm 5\text{ppm}$ Rr as specification
4. Humidity characteristics	+40 $\pm$ 2 $^{\circ}\text{C}$ & 90%~95% R.H. 250 hours	Frequency change: $\leq \pm 5\text{ppm}$ Rr as specification
5. Low temperature characteristics	-40 $\pm$ 2 $^{\circ}\text{C}$ , 250 hours, put in room temperature, test after 1 hours.	Frequency change: $\leq \pm 5\text{ppm}$ Rr as specification
6. High temperature characteristics	+85 $\pm$ 2 $^{\circ}\text{C}$ , 250 hours, put in room temperature, test after 1 hours.	Frequency change: $\leq \pm 5\text{ppm}$ Rr as specification
7. Temperature cycling	-30 $\pm$ 3 $^{\circ}\text{C}$ /30 $\pm$ 3 min~+85 $\pm$ 2 $^{\circ}\text{C}$ /30 $\pm$ 3min, 5 cycles	Frequency change: $\leq \pm 5\text{ppm}$ Rr as specification
8. Refluence examination	<p>1- Max 180 sec 2- Max 10 sec 3- Max 80 sec 4- Max 90 sec</p>	Frequency change: $\leq \pm 5\text{ppm}$ Rr as specification

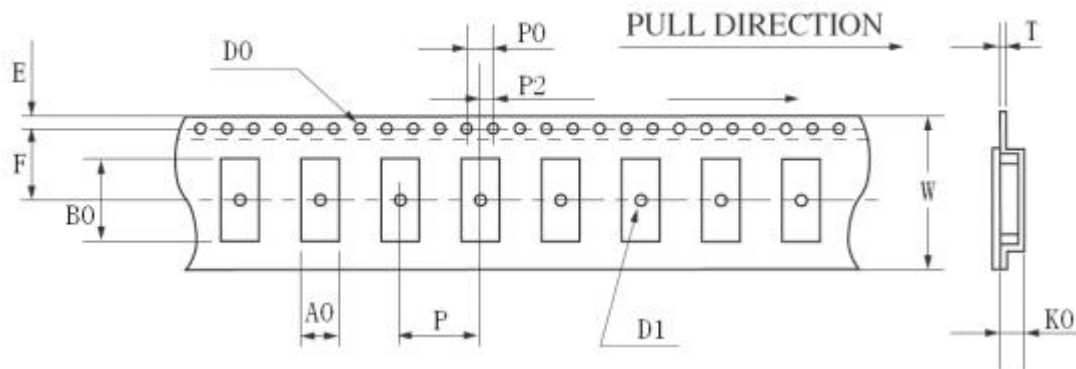


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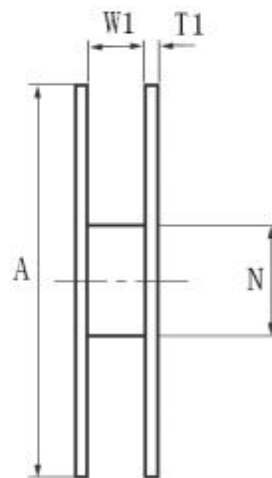
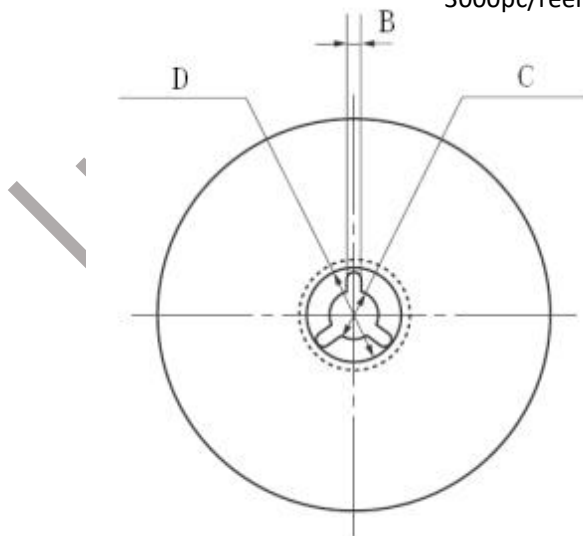


## 7. Type & Reel

	HC-49SMD	7050	6035	5032	3225	2520	2016
W	24.00±0.30	16.00±0.05	12.00±0.05	12.00±0.05	8.00±0.05	8.00±0.05	8.00±0.05
E	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10
F	11.5±0.10	7.5±0.10	5.5±0.10	5.5±0.10	3.5±0.05	3.5±0.05	3.5±0.05
T	0.40±0.05	0.35±0.05	0.35±0.05	0.30±0.05	0.25±0.03	0.25±0.03	0.25±0.03
P	12.00±0.10	8.00±0.10	8.00±0.10	8.00±0.10	4.00±0.05	4.00±0.05	4.00±0.05
P0	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.05	4.00±0.05	4.00±0.05
P2	2.00±0.10	2.00±0.10	2.00±0.10	2.00±0.10	2.00±0.05	2.00±0.05	2.00±0.05
D0	φ1.50±0.10	φ1.50±0.10	φ1.50±0.10	φ1.50±0.10	φ1.50±0.10	φ1.50±0.10	φ1.50±0.10
D1	φ1.50MIN	φ1.50MIN	φ1.50MIN	φ1.50MIN	φ1.00MIN	φ1.00MIN	φ1.00MIN
A0	4.60±0.10	5.40±0.10	3.90±0.10	3.50±0.10	2.70±0.10	2.4±0.10	2.00±0.10
K0	4.40±0.10	1.80±0.10	1.50±0.10	1.60±0.10	1.50±0.10	1.10±0.10	1.10±0.10
B0	14.20±0.15	7.40±0.10	6.40±0.10	5.20±0.10	3.50±0.05	2.90±0.05	2.4±0.05



3000pc/reel



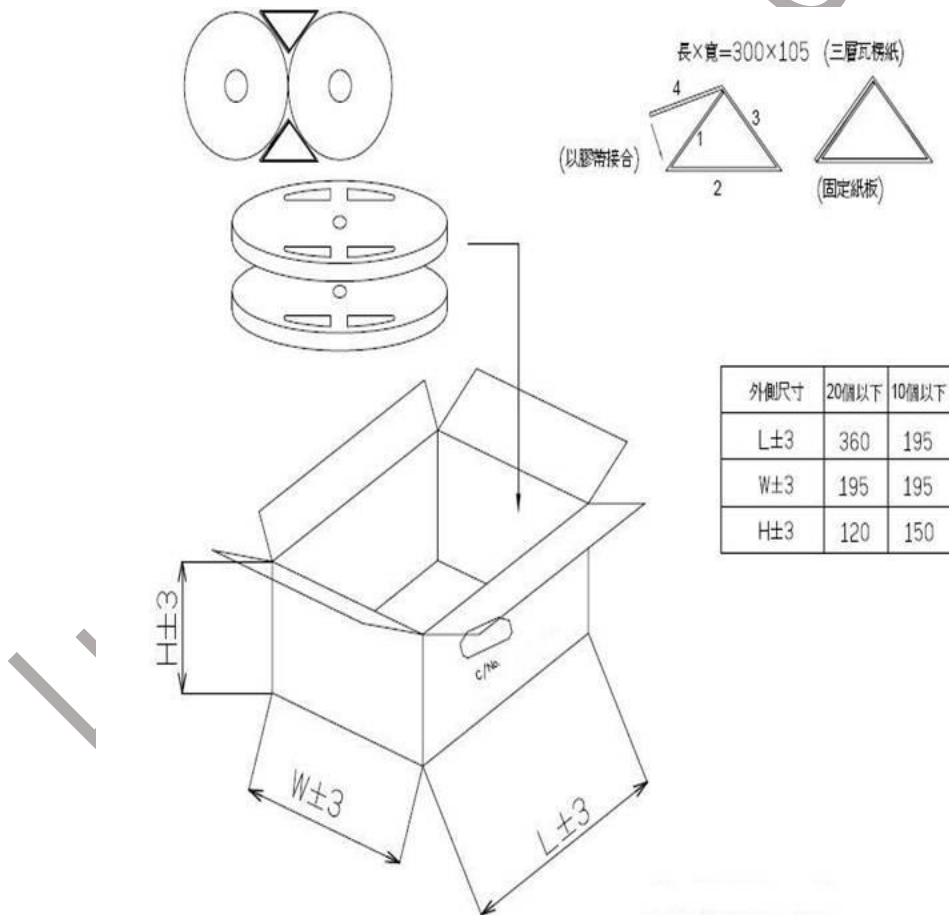


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	HC-49SMD	7050	6035	5032	3225	2520	2016
A	$\phi 330 \pm 1.0$	$\phi 178 \pm 2.0$	$\phi 178 \pm 2.0$	$\phi 178 \pm 2.0$	$\phi 178 \pm 2.0$	$\phi 178 \pm 2.0$	$\phi 178 \pm 2.0$
B	$2.30 \pm 0.20$	$2.00 \pm 0.50$	$2.00 \pm 0.50$	$2.00 \pm 0.50$	$2.50 \pm 0.50$	$2.50 \pm 0.50$	$2.50 \pm 0.50$
C	$\phi 13.5 \pm 0.20$	$\phi 13.2 \pm 0.20$	$\phi 13.2 \pm 0.20$	$\phi 13.2 \pm 0.20$	$\phi 13.5 \pm 0.20$	$\phi 13.5 \pm 0.20$	$\phi 13.5 \pm 0.20$
D	$\phi 21.5 \pm 0.20$	$\phi 20.0 \pm 0.50$	$\phi 20.0 \pm 0.50$	$\phi 20.0 \pm 0.50$	$\phi 56.8 \pm 0.50$	$\phi 56.8 \pm 0.50$	$\phi 56.8 \pm 0.50$
N	$\phi 100.0 \pm 0.5$	$\phi 60.5 \pm 1.0$	$\phi 60.5 \pm 1.0$	$\phi 60.5 \pm 1.0$	$\phi 60.5 \pm 1.0$	$\phi 60.5 \pm 1.0$	$\phi 60.5 \pm 1.0$
W I	$24.5 \pm 0.20$	$16.5 \pm 0.20$	$12.5 \pm 0.20$	$12.5 \pm 0.20$	$9.4 \pm 0.30$	$8.0 \pm 0.30$	$8.0 \pm 0.30$
T1	$2.30 \pm 0.20$	$1.80 \pm 0.20$	$1.80 \pm 0.20$	$1.80 \pm 0.20$	$1.40 \pm 0.20$	$1.40 \pm 0.20$	$1.40 \pm 0.20$

## 8. Packing Specification





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