

## APPROVAL SHEET

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

Part Number: 2520 Seam Sealing Crystal

LK Part No.: L2520S16M9PF10

Holder : SMD 2520

Frequency: 16.000MHZ 9PF ±10PPM

Manufacturer: \_\_\_\_\_

Date: 2023-03-23

Prepared	Checked	Approved

(For Customer Use)

Acceptable	

## Revision History

No.	Revised Date	Change Content	Approved	Remark

**1. Electrical characteristics**

Items	Symbol	Specification			Unit	Notes
		Min	Typ	Max		
Model No		Seam Seal 2520				
Blank Cutting Mode		AT FUND				
Nominal Frequency	F0	16.000000			MHz	
Oscillation Mode		<input checked="" type="checkbox"/> Fundamental <input type="checkbox"/> 3rd				
Frequency Tolerance	$\Delta F/F0$		-10	+10	ppm	25°C ± 3°C
Load Capacitance	CL		9		pF	
Frequency Stability	TC	-10		10	ppm	
Operating Temperature	Topr	-20		75	°C	
Storage Temperature	Tstg	-55	~	125	°C	
Drive Level	DL		100	300	uW	
Effective Resistance RR	Rr	-	-	60	Ω	
Shunt Capacitance CO	CO	-	-	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			0.0126		g	

**Remark:** Sample Data See Attachment

**Measure equipment :**

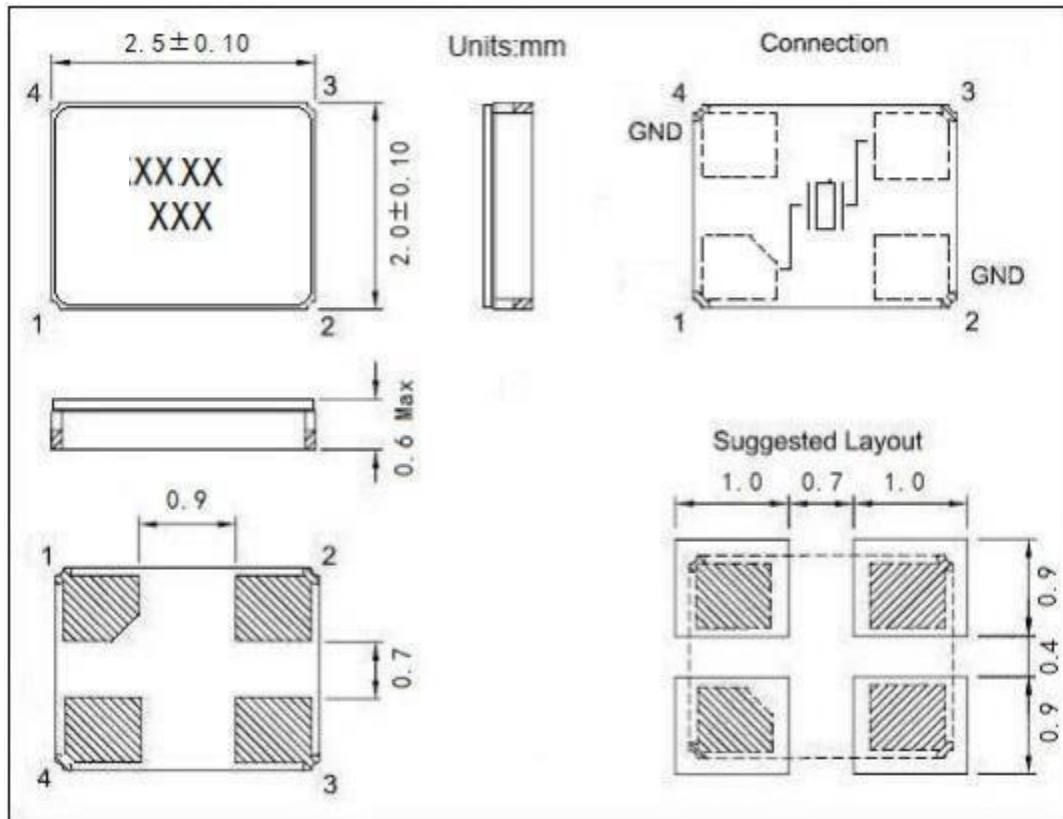
Electrical characteristics measured by S&A 250B or equivalent.

**Hermetically :**

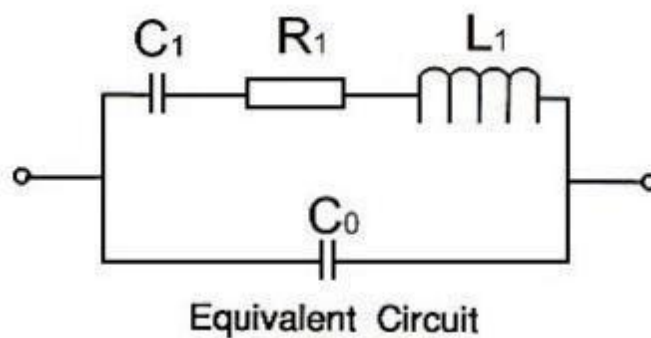
**Fine Leak:** Helium Bombing 4kg/cm<sup>2</sup> for 1 Hour, Leak ate Less Than <sup>-8</sup>atm. cc/sec

**1×10 Gross Leak:** 125°C FC#40 , 120 Seconds, No Bubble

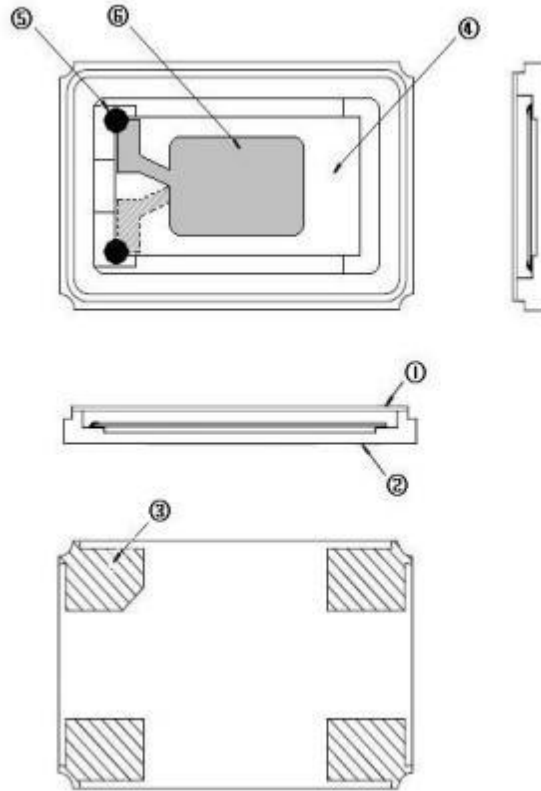
2. Solder Dimension And Pattern



3. Equivalent Circuit

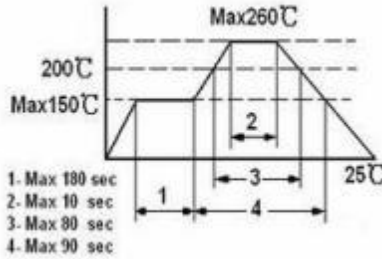


4. Structure drawing

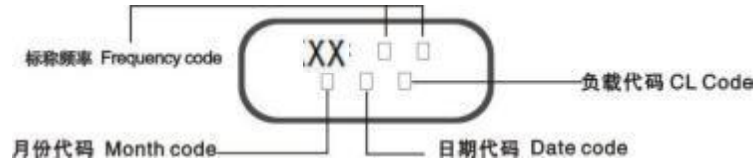


NO	COMPONENTS	MATERIALS	QTY	FINISH / SPECIFICATIONS
1	Cap	Metal ( Fe )	1	-
2	Base	Ceramic	1	Color black
3	PAD	Au	4	Tungsten metalize + Ni plating + Au plating
4	Crystal Blank	SiO <sub>2</sub>	1	-
5	Conductive Adhesive	Ag	4	Silicone
6	Electrode	Ag + Cr	2	-

**5. 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: $\leq \pm 5$ ppm Rr as specification
2. Mechanical shock	Device are shocked to half sine wave (1000g) three mutually perpendicular axes each 3 times	Frequency change: $\leq \pm 5$ 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: $\leq \pm 5$ ppm Rr as specification
4. Humidity characteristics	+40 $\pm$ 2C & 90%~95% R.H. 250 hours	Frequency change: $\leq \pm 5$ ppm Rr as specification
5. Low temperature characteristics	-40 $\pm$ 2C, 250 hours, put in room temperature, test after 1 hours.	Frequency change: $\leq \pm 5$ ppm Rr as specification
6. High temperature characteristics	+85 $\pm$ 2C, 250 hours, put in room temperature, test after 1 hours.	Frequency change: $\leq \pm 5$ ppm Rr as specification
7. Temperature cycling	-30 $\pm$ 3C/30 $\pm$ 3 min~+85 $\pm$ 2C/30 $\pm$ 3min, 5 cycles	Frequency change: $\leq \pm 5$ 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: $\leq \pm 5$ ppm Rr as specification

## 6. Marking specification



### Produce Time Code

#### 负载代码 CL Code

负载 CL	6	6.1-6.5	7.1-7.5	8	8.5	9	9.1-9.5	10	10.5	11.2	11.5	12	12.5
代码 Code	A	B	C	D	E	F	G	H	I	J	K	L	M

负载 CL	13	14	15	16	17	18	19	20	22	28	30		
代码 Code	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

#### 月份代码 Month code

月份 Month	1	2	3	4	5	6	7	8	9	10	11	12
代码 code	1	2	3	4	5	6	7	8	9	O	N	D

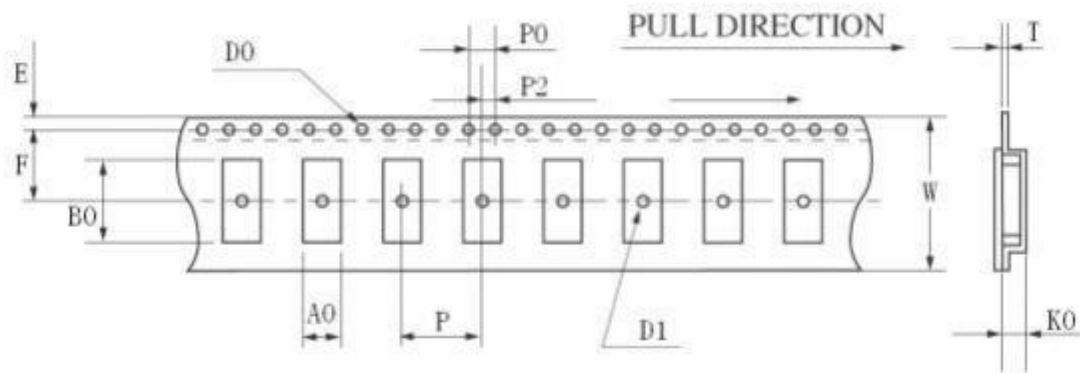
#### 日期代码 Date code

日期 Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
代码 code	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

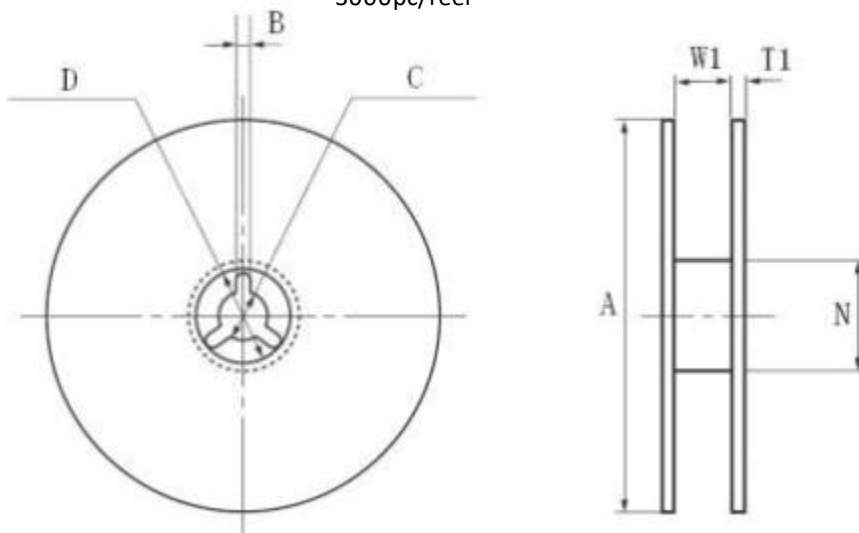
日期 Date	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
代码 code	Q	R	S	T	U	V	W	X	Y	Z	1	2	3	4	5

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



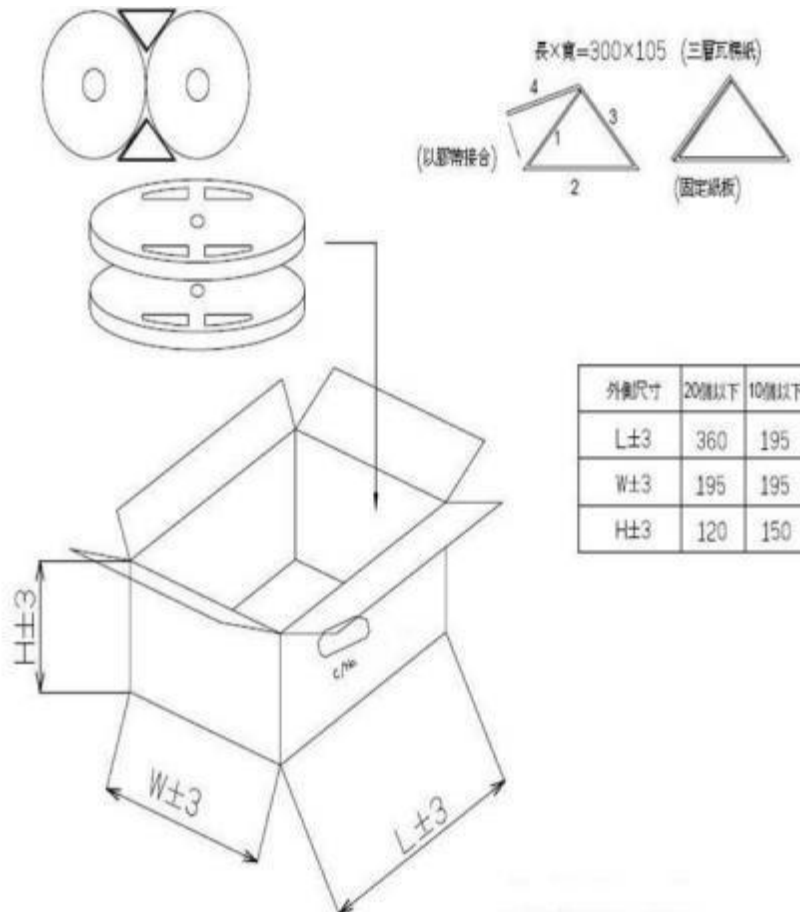
3000pc/reel





	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



## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Crystals](#) category:*

*Click to view products by [SST](#) manufacturer:*

Other Similar products are found below :

[CX3225GB25000M0PPSZ1](#) [718-13.2-1](#) [7A-40.000MAAE-T](#) [FL2000085](#) [99-BU](#) [9B-15.360MBBK-B](#) [9C-7.680MBBK-T](#) [H10S-12.000-18-EXT-TR](#) [ABC2-6.000MHZ-D4Z-T](#) [ABLS-20.000MHZ-D2-T](#) [ABS071-32.768KHZ-6-T](#) [R38-32.768-12.5-5PPM-NPB](#) [BTD1062E05A-513](#) [21U15A-21.4MHZ](#) [RTX-781DF1-S-20.950](#) [LFXTAL066198Cutt](#) [9C-14.31818MBBK-T](#) [A-11.000MHZ-27](#) [ABL-27.000MHZ-B4Y-T](#) [ABM11-132-24.000MHZ-T3](#) [ABM3B1-25.000MHZ-D2Y-T](#) [SPT2A-.032768B](#) [SPT2A.032768G](#) [LFXTAL065253Cutt](#) [LFXTAL066431Cutt](#) [XT9S20ANA14M7456](#) [XT9SNLANA16M](#) [7A-24.576MBBK-T](#) [7B-30.000MBBK-T](#) [CX2520DB16000H0HPQCC](#) [MMCC2R32.7680KHZ](#) [6504-202-1501](#) [6526-202-1501](#) [ABLS-12.000MHZ-B2Y-T](#) [7A-10.000MBBK-T](#) [SG636PCE-20.000MC](#) [3404](#) [CM315D32768EZFT](#) [C1E-24.000-7-2020-R](#) [C1E-19.200-12-1530-X-R](#) [C1E-16.000-12-1530-X-R](#) [ABM11-16.000MHZ-9-B1U-T](#) [FL5000014](#) [EUCA18-3.1872M](#) [FX0800015](#) [425F35E027M0000](#) [FP0800018](#) [MS3V-T1R-32.768kHz-7pF-20PPM-TA-QC-Au](#) [VXM7-1C1-16M000](#) [MS3V-T1R-32.768kHz-9pF-20PPM-TA-QC-Au](#)