广东惠伦晶体科技股份有限公司
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PRODUCT SPECIFICATION SHEET

CUSTOMER	:	
PRODUCT TYPE	:	SMD X'TAL 3.2*2.5(4PAD)
NOMINAL FREQ.	:	8.000000 MHz
FL P/N	:	3Y080G0002
REVISION	:	S0
CUSTOMER P/N	:	

CUSTOMER'S APPROVAL&DATE

FL CORPORATION

APPROVED	CHECKED	DESIGNED
Xing Yue	Jin Qi	Li Xiang

MSL1

RoHS Compliant

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- SPECIFICATION OF THE ENVIRONMENT-RELATED SUBSTANCES

ATTACHMENT（optional）

- ELECTRICAL CHARACTERISTICS TEST A ☐ YES ☑ NO
- TEMPERATURE CHARACTERISTICS TEST B ☐ YES ☑ NO

SPECIFICATION REVISION RECORD SHEET

Rev.	Revise page	Revise Contents	Date	Ref. No.	Reviser
S0	N/A	Initial released	16-Sep-22	N/A	Li Xiang

PRODUCT DESCRIPION

Standard atmospheric conditions

Unless otherwise specified. The standard range of atmospheric conditions for making measurement and tests are as follow:

Ambient temperature : 25±2℃
Relative humidity : 40%~70%

If there is no doubt the results, measurement shall be made within the following limits:

Ambient temperature : 25±2℃
Relative humidity : 40%~70%

Measure equipment

Electrical characteristics measured by S&A250B or equivalent.

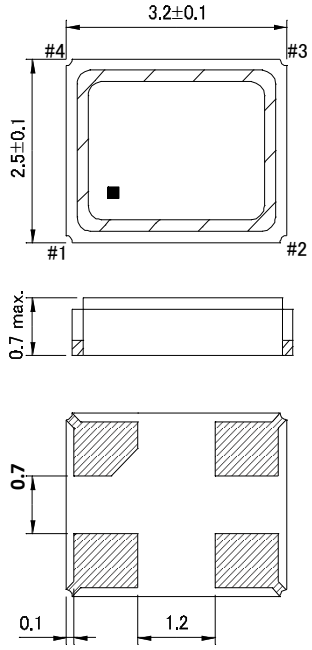
Crystal cutting type

The crystal is using AT CUT (thickness shear mode)

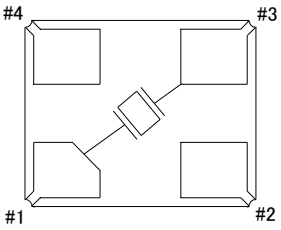
ELECTRICAL SPECIFICATIONS

No.	Items	Electrical Spec.					Remarks
		Symbol	Min	Typ	Max	Units	
1	Nominal Frequency	FL	-	8	-	MHz	
2	Oscillation Mode	-	Fundamental			-	
3	Load Capacitance	CL	8.0			pF	
4	Frequency Tolerance	-	±30			ppm	at 25±2℃
5	Frequency Stability	-	±50			ppm	at -40～+125℃ (reference 25℃)
6	Shunt Capacitance	C0	-	-	3	pF	
7	Aging (/1 year)	-	±3			ppm/year	at 25±2℃
8	Operating Temperature	-	-40	-	125	℃	
9	Storage Temperature	-	-40	-	125	℃	
10	Equivalent series resistance	ESR	-	-	500	ohms	
11	Insulation Resistance	IR	500	-	-	M-ohms	at DC 100V
12	ESD	-	HBM＞4000V			-	JESD22-A114-B
13	MSL	-	Level 1			-	IPC/JEDEC J-STD-033C
14	Drive Level	DL	-	-	100	uW	

DIMENSIONS unit:mm

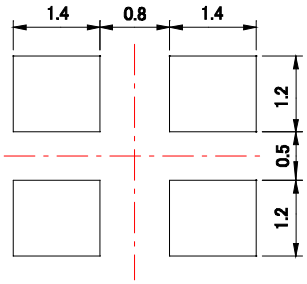


CONNECTION DIAGRAM (TOP VIEW)

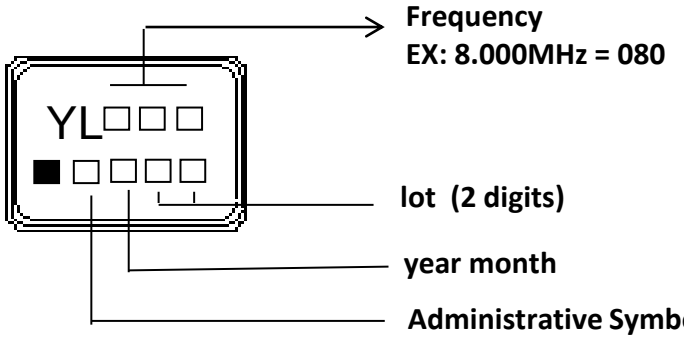


Pin	Function
#1	Xtal terminal (Input)
#2	GND terminal
#3	Xtal terminal (Output)
#4	GND terminal

LAND PATTERN unit:mm



MARKING

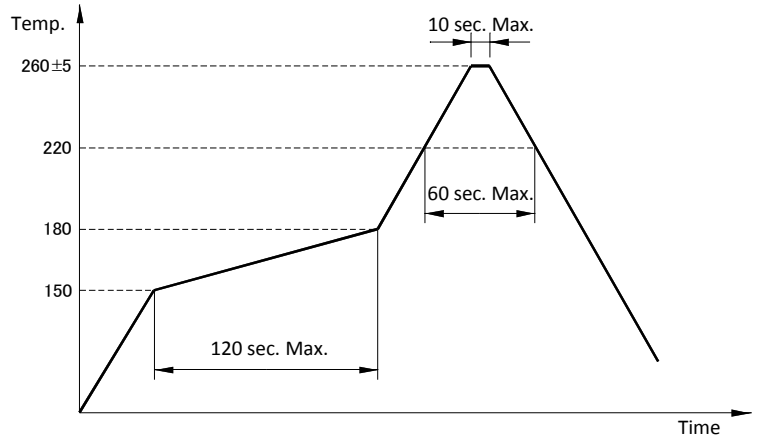


year \ month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2021 2025	A	B	C	D	E	F	G	H	J	K	L	M
2022 2026	N	P	Q	R	S	T	U	V	W	X	Y	Z
2023 2027	a	b	c	d	e	f	g	h	j	k	l	m
2024 2028	n	p	q	r	s	t	u	v	w	x	y	z

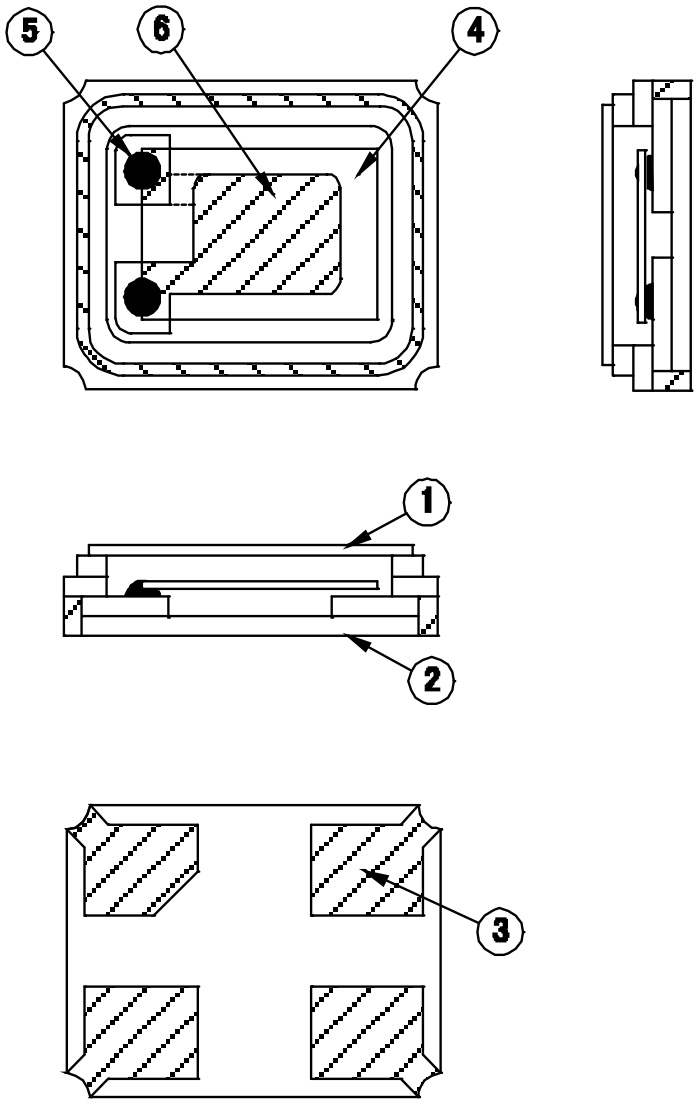
SUGGESTED REFLOW PROFILE

Total time : 360 sec. Max.

Solder melting point : 225 °C



STRUCTURE ILLUSTRATION



NO	COMPONENTS	MATERIALS	QTY	FINISH/SPECIFICATIONS
1	Cap(Lid)	Ceramic(AI2O3)	1	-
2	Base(Package)	Ceramic(AI2O3)	1	
3	Pad(Package)	Au	4	Tungsten metalize +Ni plating
4	Crystal blank	SiO2	1	-
5	Conductive adhesive	Ag	4	Silicone resin
6	Electrode	Noble metal	2	-

RELIABILITY SPECIFICATIONS

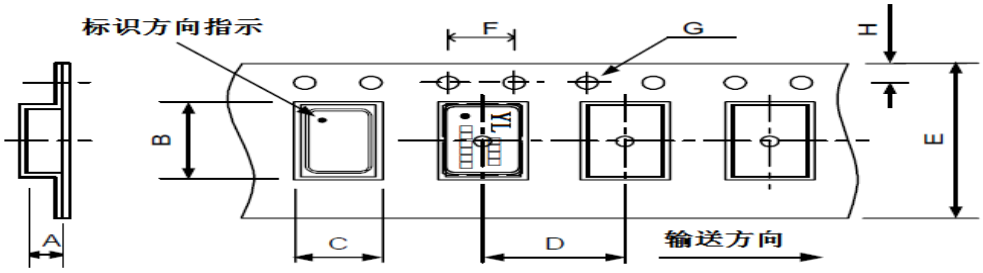
1.ENVIRONMENTAL ENDURANCE (AEC-Q200)

No.	Test Item	Test Methods	
1	High Temperature Exposure	1000 hours at 85℃.	AEC-Q200 TEST 3, MIL-STD-202 Method 108
2	Temp. Cycling	Temperature Cycling 1000 cycles. (-40℃ to 125℃ for 30 minutes each).	AEC-Q200 TEST 4, JESD22 Method JA-104
3	Biased Humidity	1000 hours at 85℃ & 85%RH with V_{DD} applied.	AEC-Q200 TEST 7, MIL-STD-202 Method 103
4	Operational Life	1000 hours at 125℃ with V_{DD} applied.	AEC-Q200 TEST 8, MIL-STD-202 Method 108
5	Resistance to Solvents	3 minutes of immersion and 10 strokes of brush cleaning,for 3 cycles.	AEC-Q200 TEST 12, MIL-STD-202 Method 215
6	Mechanical Shock	100g's,6msec,half-sine,for 3 cycles each in 6 directions	AEC-Q200 TEST 13, MIL-STD-202 Method 213
7	Vibration	10Hz-2000Hz,5g for 20 minutes,12 cycles in each of 3 orientations.	AEC-Q200 TEST 14, MIL-STD-202 Method 204
8	Resistance to Soldering Heat	260℃±5℃,10sec±1sec.	AEC-Q200 TEST 15, MIL-STD-202 Method 210
9	Solderability	260℃±5℃,5sec±1sec, immersing depth:≥0.5mm.	AEC-Q200 TEST 18, J-STD-002
10	Board Flex	Board bending: 2.5mm,bending time: 60s.	AEC-Q200 TEST 21, AEC Q200-005
11	Terminal Strength	Force:1.8kg,force time:60s.	AEC-Q200 TEST 22, AEC Q200-006

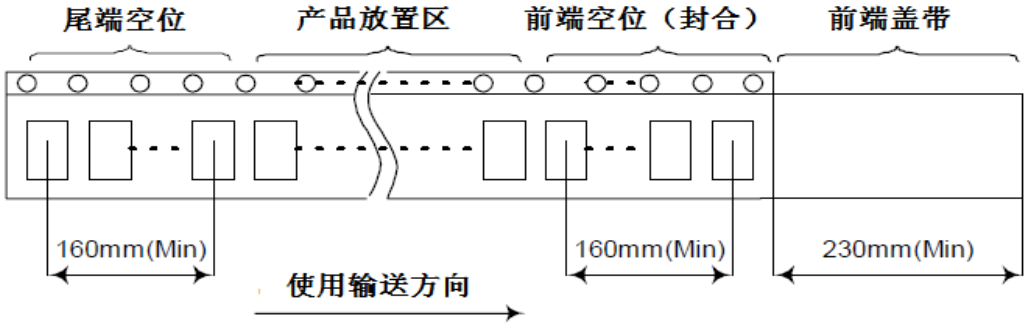
*Storage conditions ： 18 months
*Constant humidity ： 40~70%

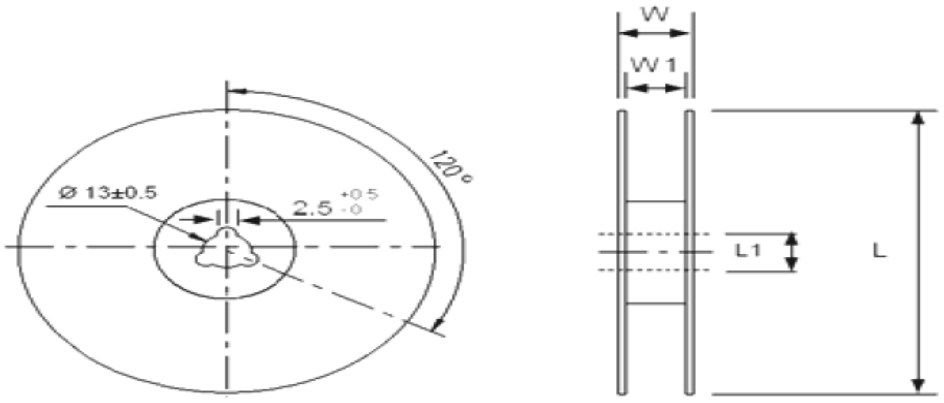
PACKING :

8mm-4mm，3000pcs / reel，φ 178；



	A	B	C	D	E	F	G	H	
Dimension	1.40 ±0.1	3.40 ±0.1	2.70 ±0.1	4.00	8.00	4.00	1.50	1.75	Unit：mm

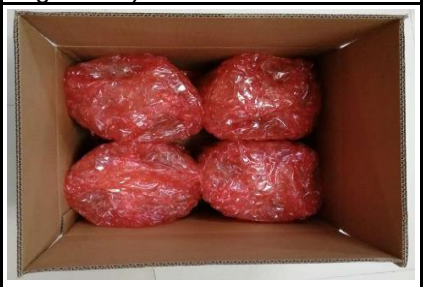




	L	L1	W	W1	
Dimension	178	13	11.5	8	Unit：mm 3000pcs / reel

SMD PRODUCT PACKING STANDARD

Out-going packing instruction

Reel Packing	Inner Packing	Carton
name：reel standard：diameter 18cm material：plastics	name：Bubble Wrap standard：430×330+20mm material：HDPE(15 reels enter)	name：carton standard：400×400×280mm material：AB corrugated paper(4 bags enter)
		
		

The label instruction

Label Drawing	Mark	Name of Article	Spec.	Size	Printing
	L1	条码标签 Bar Code Label (Chintz Paper)	1.Part No. 2.Lot No. 3.Q'ty 4.Freq	70x50mm	White
	L2	条码标签 Bar Code Label (Chintz Paper)	1.Part No. 2.Date Code 3.Q'ty 4.Freq	70x50mm	White

Remark

Specifications on the label is for the use of templates with different product specifications may vary.
If customer specified requirements for labels packaging. please provide the operation procedure.


惠伦晶体
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