承　认　书

SPECIFICATION FOR APPROVAL

客户名称：Customer _____

货　　名：Description SMD 2520 XO CMOS 石英晶体可编程振荡器

客户料号：Part No _____

物料编号：Code No O22072001533100

频　　率：Frequency 7.2000MHz

日　　期：Date 2020-05-26

备　　注：RoHS compliance with Directive (EU) 2015/863

制作(Prepare by)	检查(Check by)	批准（Approve by）
江丹娜	甘瑛	张刚

客户批准 Approve by customer	
批准日期 Approval date	

Add:广东省深圳市华发北路桑达工业区桑达雅苑 7P

7 P Sangda Yayuan Huafa North Road, Futian District, Shenzhen, Guangdong

Tel：86-755-83048260　　86-755-83048290

Fax：86-755-83048280

■ ELECTRICAL SPECIFICATIONS

Standard atmospheric conditions

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

Ambient temperature : 25±5℃

Relative humidity : 40%~70%

If there is any doubt about the results, measurement shall be made within the following limits:

Ambient temperature : 25±3℃

Relative humidity : 40%~70%

Measure equipment

Electrical characteristics measured by MD 37WX-05M or equivalent.

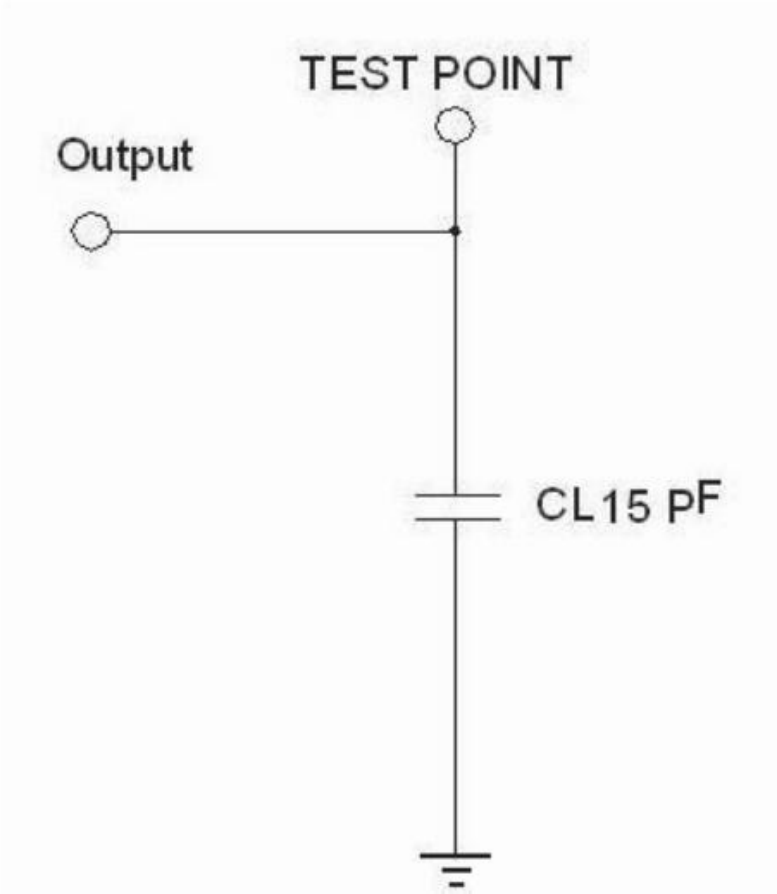
Crystal cutting type

The crystal is using AT CUT (thickness shear mode).

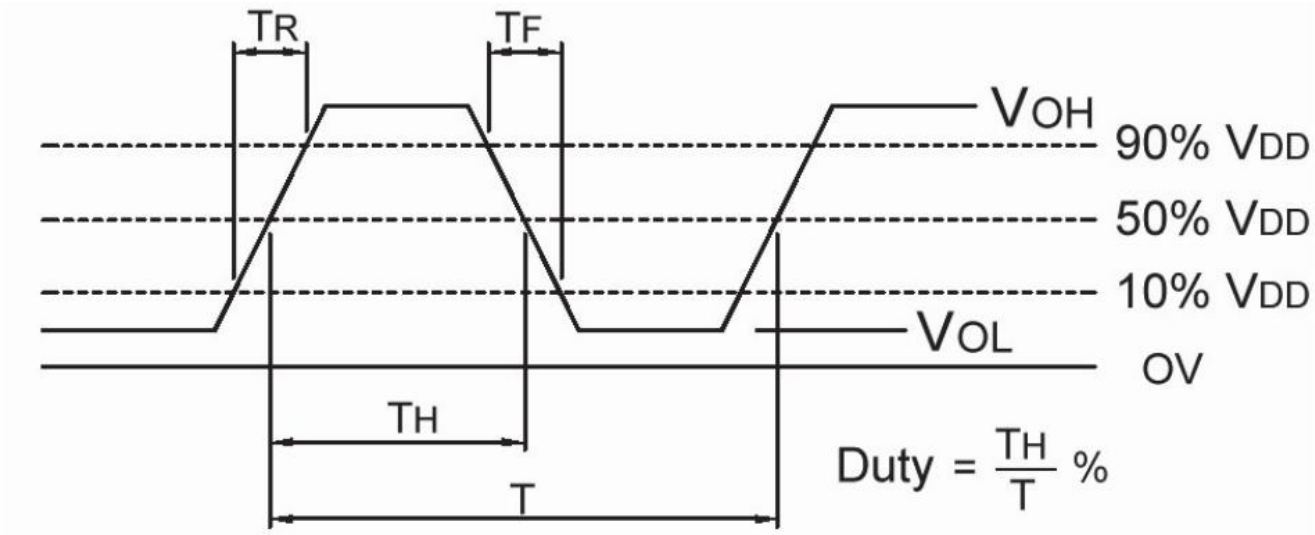
■ Electrical characteristicsFrequency

NO.	Parameters	Symbol	Electrical Spec.				Notes
			Min.	Typ.	Max.	Units	
1	Nominal Frequency	-		7.200		MHz	-
2	Frequency stability (Overall)		-50		50	ppm	Frequency stability includes frequency tolerance@25℃ and frequency stability vs. operating temperature range and voltage variance and first year aging @25℃.
3	Operating Temperature	Topr	-40	25	85	℃	The operating temperature range overwhich the frequency stability is measured.
4	Storage Temperature	Tstg	-50	~	125	℃	-
5	Supply Voltage	VDD		3.3 ±5%		V	-
6	Input Current	Icc	-	-	10	mA	At maximum supply voltage
7	Power Supply Ramp		0.01		500	mSec	Time for VDD to reach 90%VDDPower ramp must be monotonic.
8	Output waveform			CMOS			
11	Output Load			15pF		pF	
12	Duty Cycle		45	50	55	%	
13	Start Time		-	-	8	mSec	
14	Rise Time	Tr	-	-	3	ns	
15	Fall Time	Tf	-	-	3	ns	
16	Output Level	Output High(Logic “1”)	2.97			V	
17		Output Low(Logic “0”)			0.33	V	
18	Aging		-3		3	ppm	Frequency drift in first year @ 25℃
19	RMS Phase Jitter				1.5	pSec	(12KHz - 20MHz)

■ TEST CIRCUIT (CMOS LOAD)



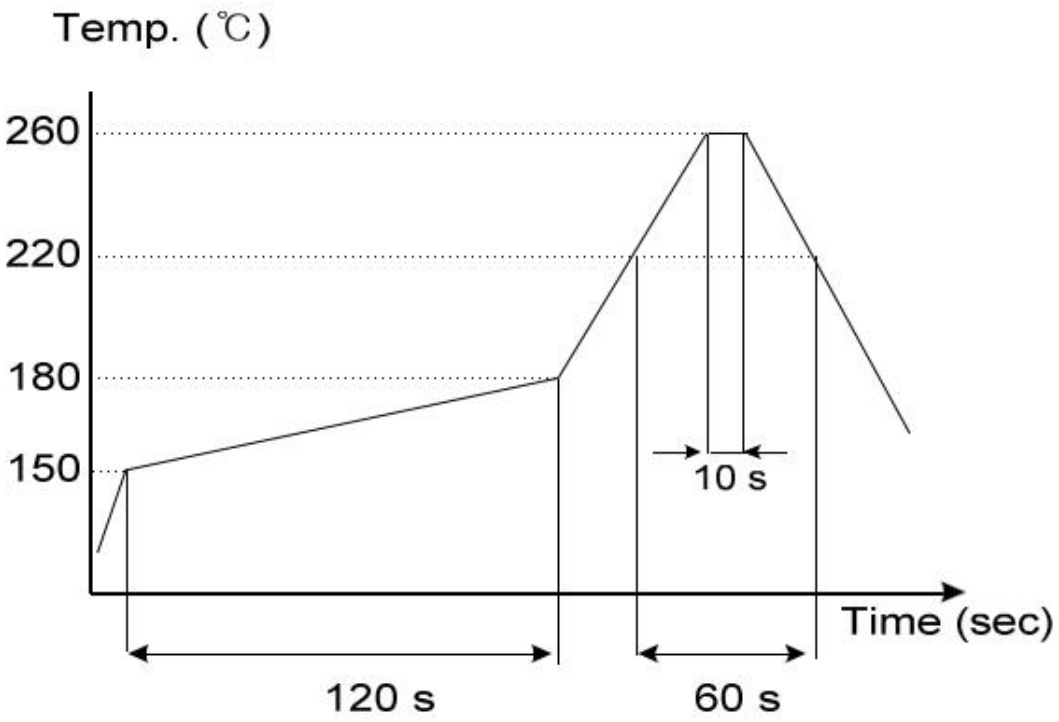
■ OUTPUT WAVEFORM (CMOS LOAD)



■ SUGGESTED REFLOW PROFILE

Total time : 200 sec. Max.

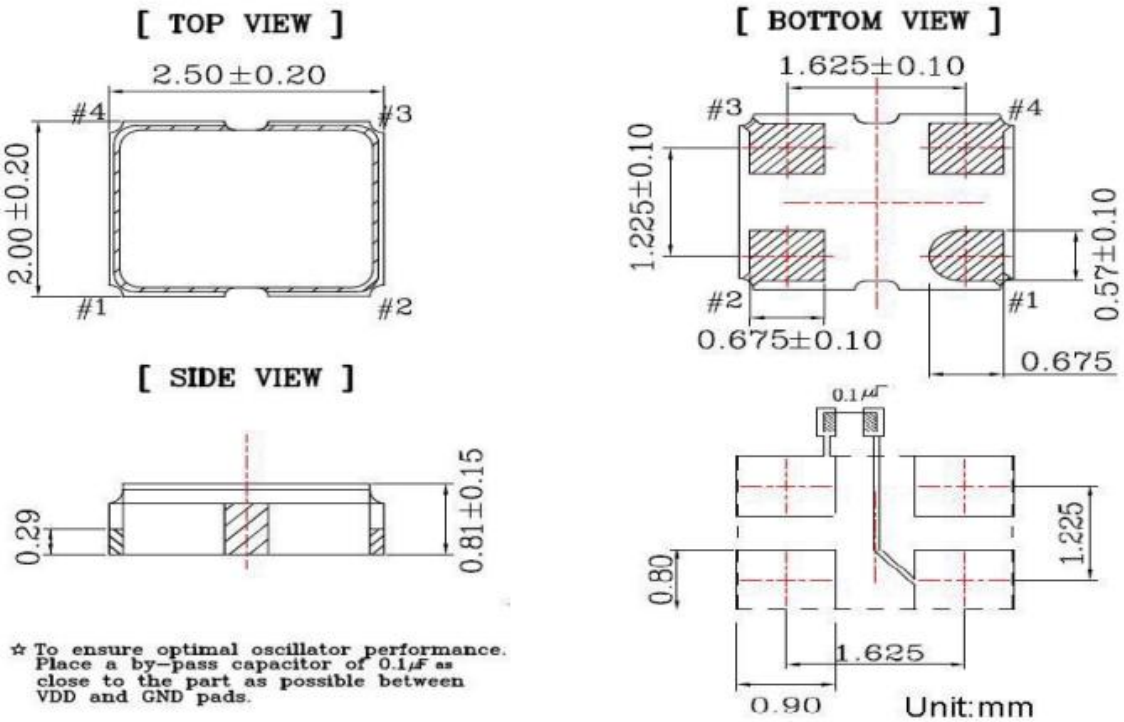
Solder melting point :220 ℃



■ PRODUCT DIMENSIONS

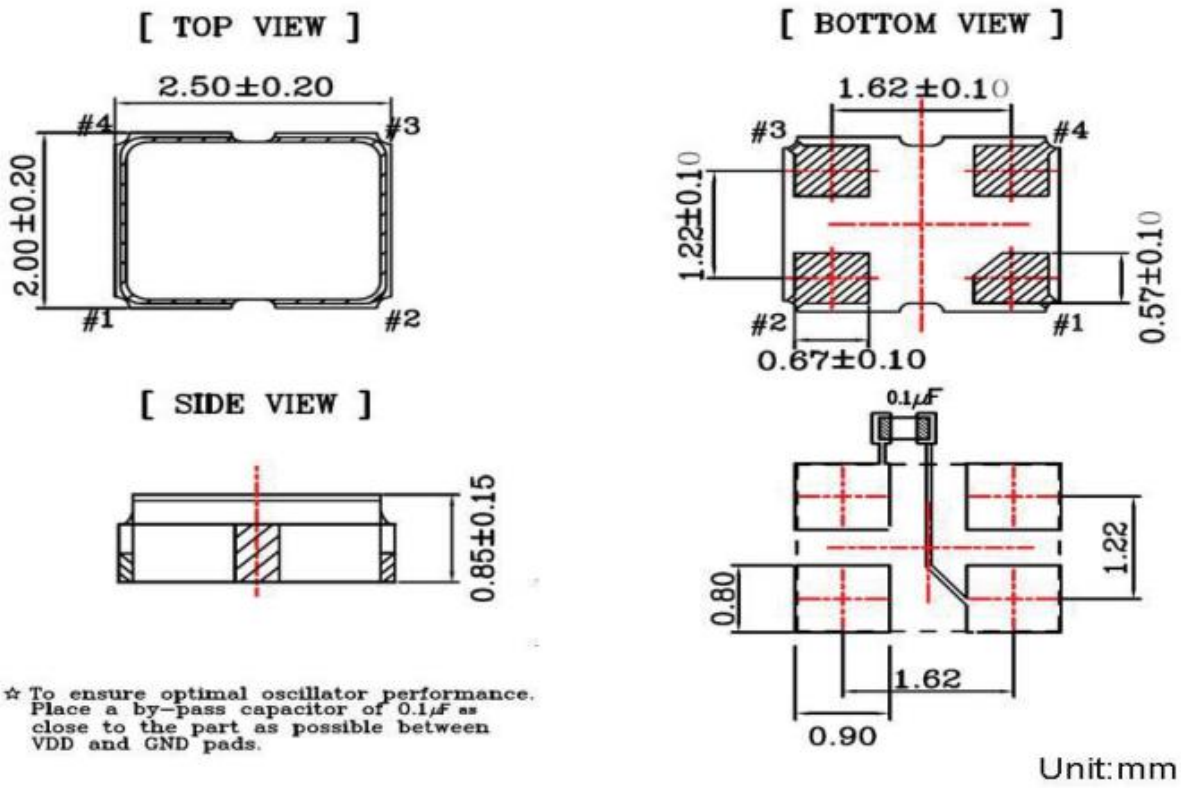
DIMain Source

1) MENSIONS



☆ To ensure optimal oscillator performance. Place a by-pass capacitor of 0.1μF as close to the part as possible between VDD and GND pads.

2) Second Source



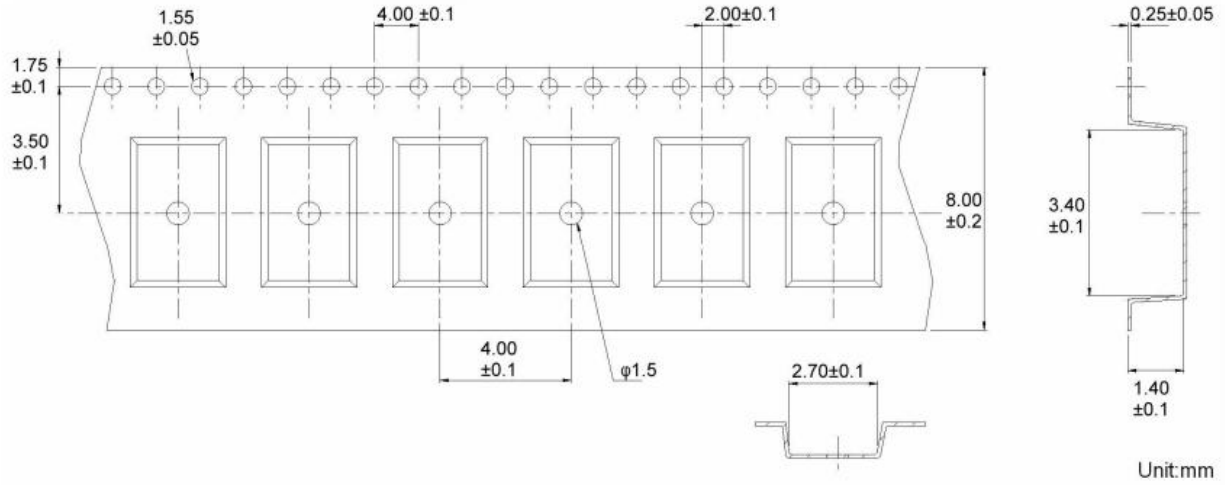
☆ To ensure optimal oscillator performance. Place a by-pass capacitor of 0.1μF as close to the part as possible between VDD and GND pads.

PIN FUNCTIONS

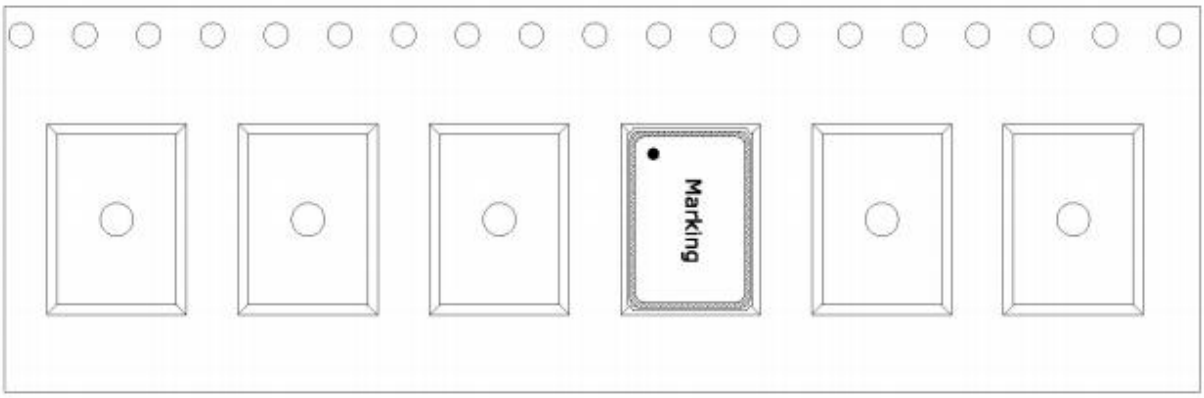
Pin	Function
#1	Tri-State
#2	GND
#3	Output
#4	VDD

■ PACKAGE INFORMATION

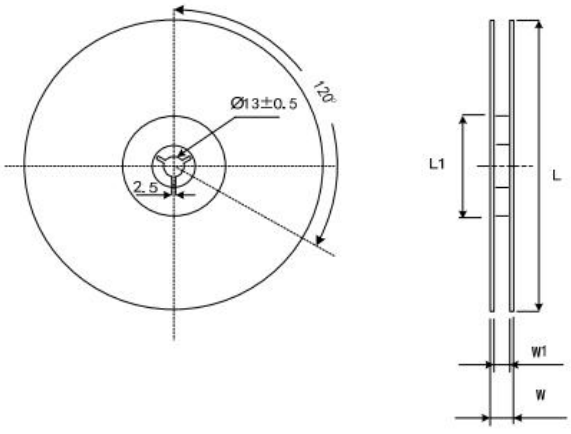
TAPE (CARRIER) DIMENSIONS



THE DIRECTION OF PACKING



REEL DIMENSIONS



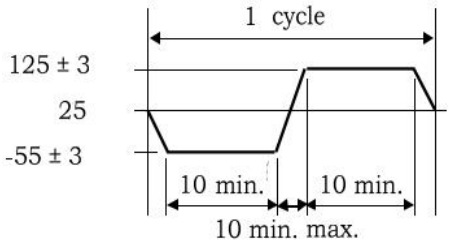
DIMENSIONS	L	L1	W	W1	Standard Reel Quantity is 3,000 pcs per reel
	178 ±1.00	60.2 ±0.50	11.5 ±0.2	8 +1/-0	(UNIT:mm)

■ RELIABILITY SPECIFICATIONS

1. Mechanical Endurance

No.	Test Item	Test Methods	REF. DOC
1	Drop Test	75 cm height,3 times on concrete floor .	JIS C6701
1	Mechanical Shock	Device are shocked to half sine wave (1000 G) three mutually perpendicular axes each 3 times. 0.5m sec. duration time	MIL-STD-202
1	Vibration	Frequency range 10 ~ 2000 Hz Amplitude 1.52 mm/20G Sweep time 20 minutes perpendicular axes each test time 4 Hrs (Total test time 12 Hrs)	MIL-STD-883
1	Gross Leak	Standard Sample For Automatic Gross Leak Detector, Test Pressure: 2kg / cm^2	MIL-STD-883
2	Fine Leak	Helium Bomging 4.5 kgf / cm^2 for 2 Hrs	MIL-STD-883
2	Solderability	Temperature 245 ℃ ± 5℃ Immersing depth 0.5 mm minimum Immersion time 5 ± 1 seconds Flux Rosin resin methyl alcohol solvent (1 : 4)	MIL-STD-883

2. Environmental Endurance

No.	Test Item	Test Methods	REF. DOC
2	Resistance To Soldering Heat	Pre-heat temperature 125 ℃ Pre-heat time 60 ~ 120 sec. Test temperature 260 ± 5 ℃ Test time 10 ± 1 sec.	MIL-STD-202
2	High Temp. Storage	+ 125 ℃ ± 3 ℃ for 1000 ± 12 Hrs	MIL-STD-883
2	Low Temp. Storage	- 40 ℃ ± 3 ℃ for 1000 ± 12 Hrs	
2	Thermal Shock	Total 100 cycles of the following temperature cycle 	MIL-STD-883
3	High Temp & Humidity	85℃ ± 3℃, RH 85% , 1000 Hrs	EIA-JESD22
3	Pressure Cooker Storage	121 ± 3℃ , RH100% , 2 bar , 240 Hrs	EIA-JESD22