

## 深圳市晶科鑫实业有限公司

### 样品承认书

客户代码:	
物料名称:	贴片钟振
规格型号:	SMD3225 OSC 25.000MHZ 1.8~3.3V ±30PPM LVCMOS -40~85°C
P N/ SJK:	3N25000G33YC
环保属性:	<input checked="" type="checkbox"/> RoHS <input checked="" type="checkbox"/> REACH <input checked="" type="checkbox"/> HF <input type="checkbox"/> PAHS <input type="checkbox"/> 其它
版 次:	A1    2017-5-10 初版
湿敏等级:	一级

承 认 签 章					
供 应 商 承 认			( ) 公 司 承 认		
制 定	审 核	核 准	工 程 师	审 核	批 准
贺丹斌		黄灏东			
SJK 支持	18682088994 (Mr.黄)		盖章签署		
FAE_EMAIL	<a href="mailto:sjk-fae@q-crystal.com">sjk-fae@q-crystal.com</a>		日 期		
日 期					
备注:					

# CRYSTAL OSCILLATOR

**SERIES 3N, SEAM SEALED CERAMIC 3.2X2.5MM SURFACE MOUNT PACKAGE**

## 1. 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°C

Relative humidity : 40%~70%

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

Ambient temperature : 25±3°C

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).

	Parameters		SYM	Electrical Spec.				Notes
				MIN	TYPE	MAX	UNITS	
1	Nominal Frequency			25.000000			MHZ	
2	Frequency Stability	AT 25°C		±10			PPM	
		Over Operating Temperature range		±10			PPM	-20~70°C
				±20			PPM	-40~85°C
3	Operating Temperature		Topr	-40	25	85	°C	
4	Storage Temperature		Tstg	-55	~	125	°C	
5	Supply Voltage		VDD	1.8~3.3 / ±10%			V	1.62~3.63 available
6	Input Current		Icc			5	mA	
7	Enable Control			Yes				Pad1
8	Output Load : CMOS		CL	15			pF	
9	Output Voltage High		VoH	90% Vdd			V	
10	Output Voltage Low		VoL			10% Vdd	V	
11	Rise Time		Tr			5	ns	10%→90%VDD Level
12	Fall Time		Tf			5	ns	90%→10%VDD Level
13	Symmetry (Duty ratio)		TH/T	45	~	55	%	
14	Start-up Time		Tosc			10	ms	
15	Enable Voltage High		Vhi	70% Vdd			V	
16	Disable Voltage Low		Vlo			30% Vdd	V	
17	Aging			±3			ppm/yr.	1st. Year at 25°C
18	Output Disable Delay Time		T off			150	us	
19	Output Enable Delay Time		T on			150	us	
20	Phase Jitter (12KHZ~20MHZ)				0.5	1.0	ps	

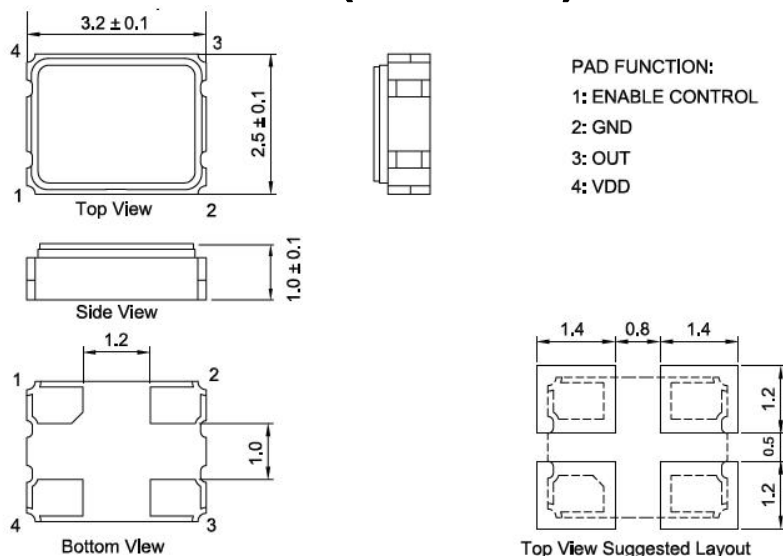
电话: 0755-88352810-837(Mr.huang) 传真: 0755-88353718 <http://www.q-crystal.com>

公司地址: 深圳市龙岗区天安云谷产业园一期 3 栋 C 座 12 楼 1204~1206 室

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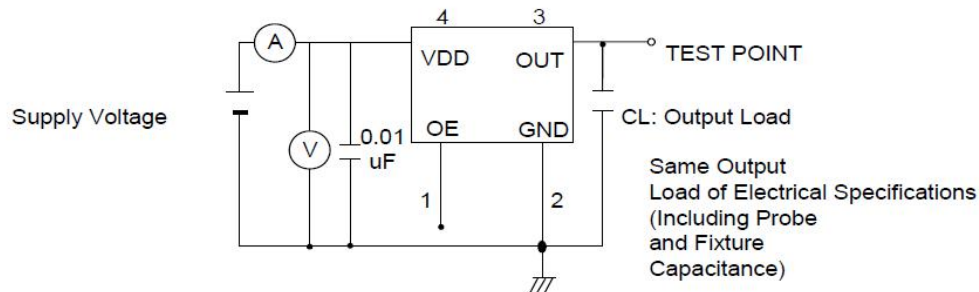
## 2. DIMENSIONS (Units :mm)



## 3. MARKING

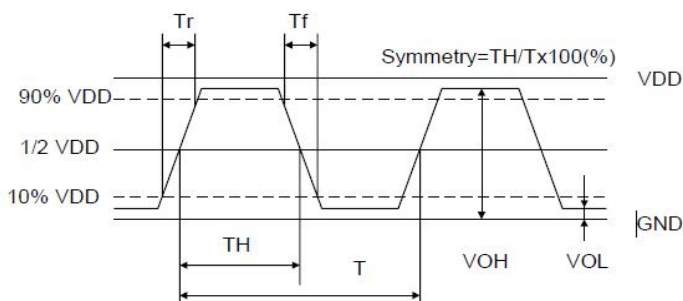


## 4. TEST CIRCUIT



Control input (output enable/disable)  
 Logic 1 or open on pad 1: Oscillator output  
 Logic 0 on pad 1: Disable output to high impedance

## 5. WAVEFORM CONDITIONS



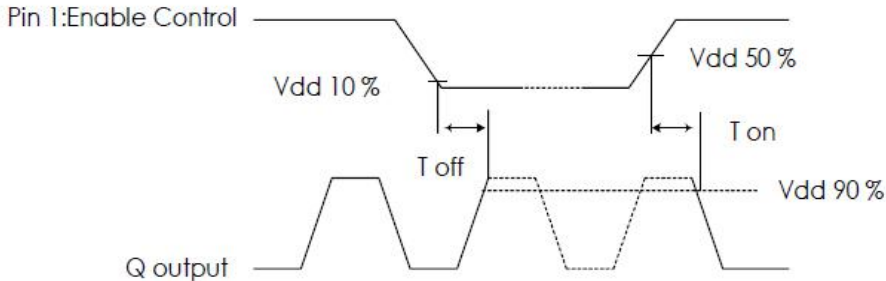
Waveform measurement system should have a min. bandwidth of 5 times the frequency being tested.

# CRYSTAL OSCILLATOR

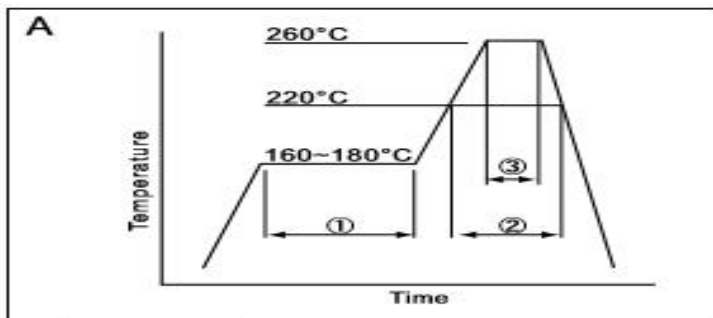
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## 6. OUTPUT ENABLE / DISABLE DELAY

The following figure shows the oscillator timing during normal operation . Note that when the device is in standby, the oscillator stops. When standby is released, the oscillator starts and stable oscillator output occurs after a short delay



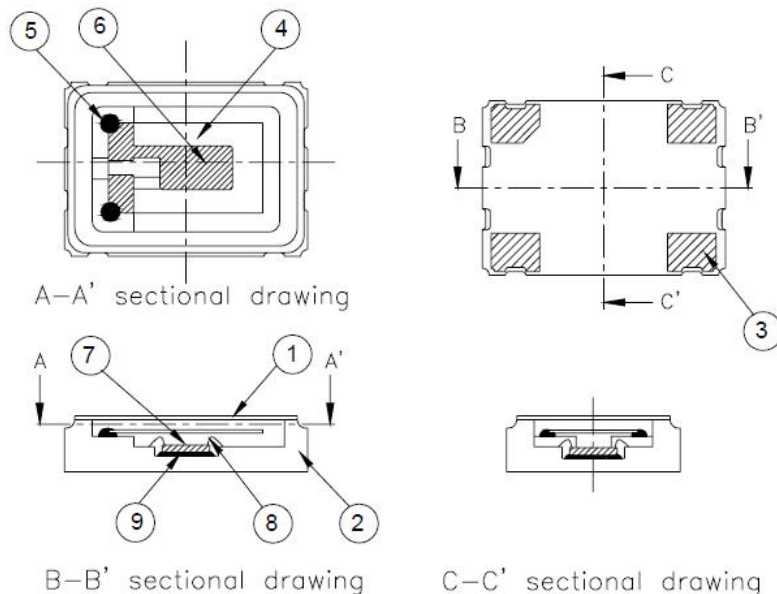
## 7. SUGGESTED REFLOW PROFILE



①	Preheat	160~180°C	120sec.
②	Primary heat	220°C	60sec.
③	Peak	260°C	10sec. max

Total time : 200 sec. Max / Solder melting point :220 °C

## 8. STRUCTURE ILLUSTRATION





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NO	COMPONENTS	MATERIALS	FINISH/SPECIFICATIONS
1	LID	Kovar (Fe/Co/Ni)	
2	Base(Package)	Ceramic (Al <sub>2</sub> O <sub>3</sub> ) + Kovar (Fe/Co/Ni)+ Ag/Cu	Color black
3	PAD	Au	Tungsten metalize + Ni plating + Au plating
4	Crystal blank	SiO <sub>2</sub>	
5	Conductive adhesive	Ag	Silicon resin
6	Electrode	Noble Metal	
7	IC chip		
8	Bonding wire	Au	Pad 1 options : NC is 5 wires , EN is 6 wires.
9	Die attached	Conductive (Ag)	Epoxy resin

## 9. RELIABILITY TEST SPECIFICATION

### 1.Mechanical Endurance

No.	Test Item	Test Methods	REF. DOC
1	Drop Test	75 cm height,3 times on concrete floor .	JIS C6701
2	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-202F
3	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-883E
4	Gross Leak	Standard Sample For Automatic Gross Leak Detector, Test Pressure: 2kg / cm <sup>2</sup>	MIL-STD-883E
5	Fine Leak	Helium Bomging 4.5 kgf / cm <sup>2</sup> for 2 Hrs	
6	Solderability	Temperature 245 °C ± 5°C Immersing depth 0.5 mm minimum Immersion time 5 ± 1 seconds Flux Rosin resin methyl alcohol solvent ( 1 : 4 )	MIL-STD-883E

### 2.Environmental Endurance

No.	Test Item	Test Methods	REF. DOC
1	Resistance To Soldering Heat	Pre-heat temperature 125 °C Pre-heat time 60 ~ 120 sec. Test temperature 260 ± 5 °C	MIL-STD-202F

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		Test time 10 ± 1 sec.	
2	High Temp. Storage	+ 125 °C ± 3 °C for 1000 ± 12 Hrs	MIL-STD-883E
3	Low Temp. Storage	- 40 °C ± 3 °C for 1000 ± 12 Hrs	
4	Thermal Shock	<p>Total 100 cycles of the following temperature cycle</p>	MIL-STD-883E
5	Pressure Cooker Storage	121 ± 3 °C , RH100% , 2 bar , 240 Hrs	JIS C6701
6	High Temp & Humidity	85 °C ± 3 °C , RH 85% , 1000 Hrs	JIS C5023

备注

SPXO / OSC系列							
SJK-	3N	12000/or12000A	-	E	33	Y	C
	封装	中心频率(MHZ)		频率精度	工作电压 (V)	输出模式	工作温度
例	3N:3225	12000:		A: ±5PPM	18: 1.8V	Y:LVC MOS	A:-10~60
	2N:2520	12.000MHZ		B: ±15PPM	25: 2.5V	S:SINCE	B:-20~70
	1N:2016	12000A:		C: ±25PPM	33: 3.3V		C:-40~85
	7N:5032	12.000***MHZ		D: ±50PPM	50: 5.0V		D:-20~105
	6N:7050	(A代表小数量最后4~6位数值)		E: ±10PPM			E:-20~85
	3NM:3225 PROG			F: ±20PPM			F:-30~85
	2NM:2520 PROG			G: ±30PPM			G:-40~105
	1NM:2016 PROG			H: ±100PPM			H:-40~125
	7NP:5032 PROG			S: Spec			S: Spec
	6NP:7050 PROG						
	3NP:3225 PROG						
	2NP:2520 PROG						
	1NP:2016 PROG						
	7NP:5032 PROG						
6NP:7050 PROG							

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单击下面可查看定价，库存，交付和生命周期等信息

[>>SJK\(晶科鑫\)](#)