

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:	3225 OSC 18.432MHZ 1.8~3.3V $\pm$ 30PPM CMOS
P N/ SJK:	3N18432G33YC

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
林雁	杨霞	黄灏东			
盖章签署			盖章签署		
日 期			日 期		
批示: ☐ 接受 ☐ 有条件接受					
备注:					

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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CRYSTAL OSCILLATOR



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

Approved by: 黄灏东
Checked by: 杨霞
Issued by: 玉静霞

产品规格书 SPECIFICATION

PN / SJK: 3N18432G33YC

深圳市晶科鑫实业有限公司
SHENZHEN CRYSTAL TECHNOLOGY INDUSTRIAL CO., LTD.

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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<http://www.q-crystal.com> Email: sjk-fae@q-crystal.com Mobile: 18682088994 (Mr.huang)

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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 : $25 \pm 5^{\circ}\text{C}$

Relative humidity : 40%~70%

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

Ambient temperature : $25 \pm 3^{\circ}\text{C}$

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).

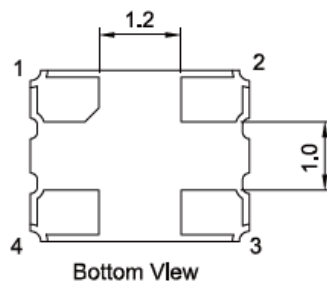
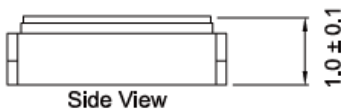
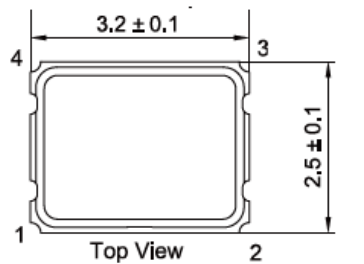
	Parameters		SYM	Electrical Spec.				Notes
				MIN	TYPE	MAX	UNITS	
1	Nominal Frequency			18.432000			MHZ	
2	Frequency Stability	AT 25°C		± 10			PPM	
		Over Operating Temperature range		± 20			PPM	
3	Operating Temperature		Topr	-40	25	85	°C	
4	Storage Temperature		Tstg	-55	~	125	°C	
5	Supply Voltage		VDD	1.8~3.3 $\pm 10\%$			V	
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	

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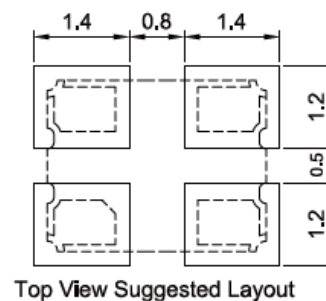


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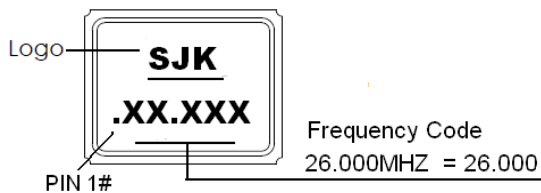
2. DIMENSIONS (Units :mm)



PAD FUNCTION:
1: ENABLE CONTROL
2: GND
3: OUT
4: VDD



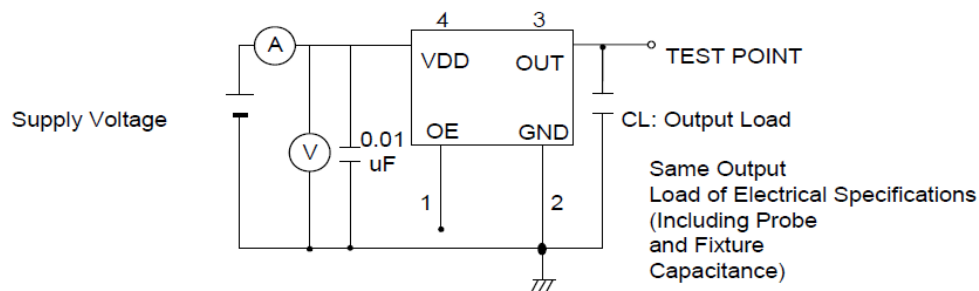
MARKING



3. 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



4. PART NUMBER GUIDE

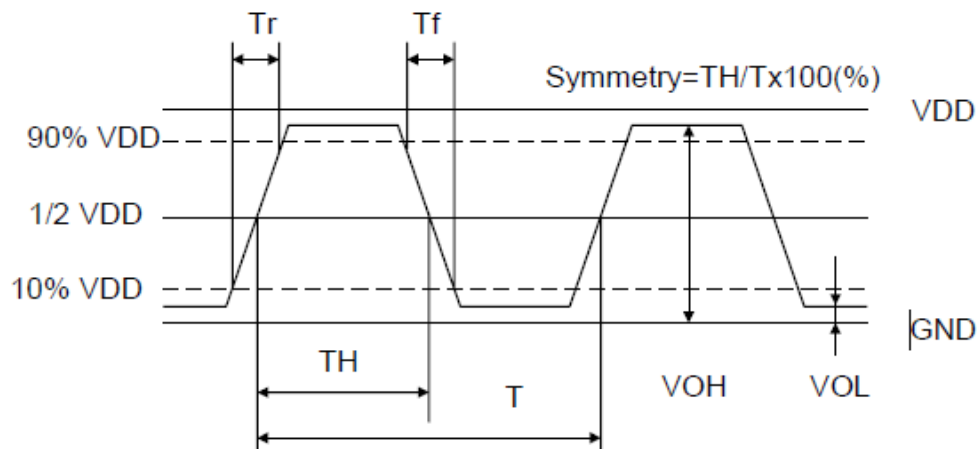
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SJK -	3N	18432	G	33	Y	C
		Frequency 18.432MHz	Frequency tolerance G:±30ppm	Supply voltage 33:1.8~3.3V	Fan out type X:TTL/CMOS Y:CMOS Z:TTL	Temperature range C: -40-85℃

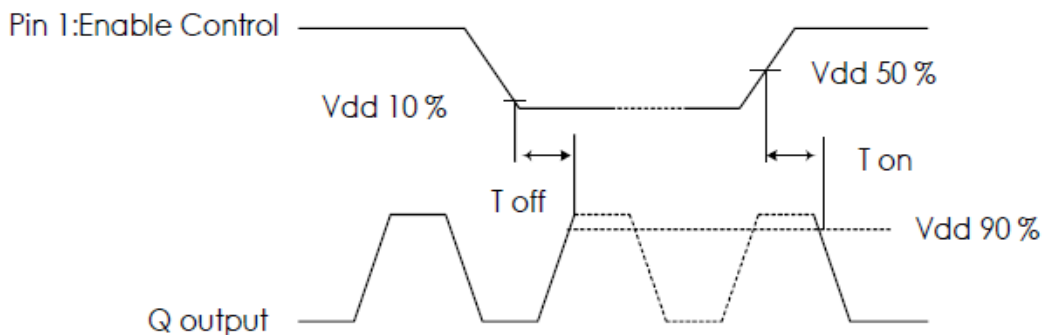
5. WAVEFORM CONDITIONS

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



6. OUTPUT ENABLE / DISABLE DELAY

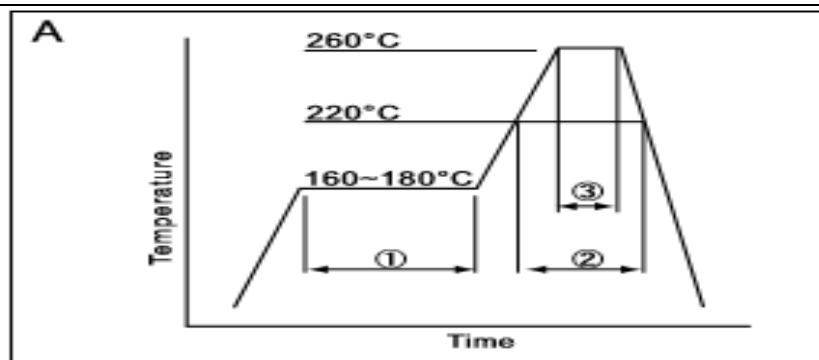
The following figure shows the oscillator timing during normal operation . Note that when the device is in standby, the oscillator stops. When standby is released, the oscillator starts and stable oscillator output occurs after a short delay



7. SUGGESTED REFLOW PROFILE

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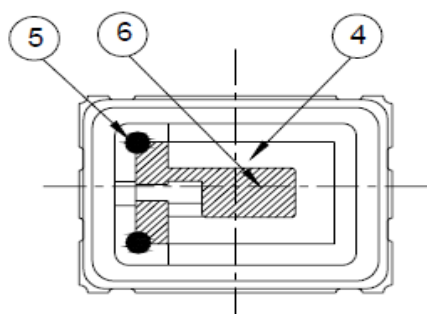
SERIES 3N, SEAM SEALED CERAMIC 3.2X2.5MM SURFACE MOUNT PACKAGE



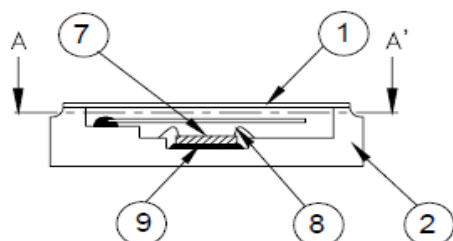
①	Preheat	160~180°C	120sec.
②	Primary heat	220°C	60sec.
③	Peak	260°C	10sec. max

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

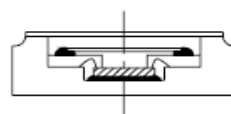
8. STRUCTURE ILLUSTRATION



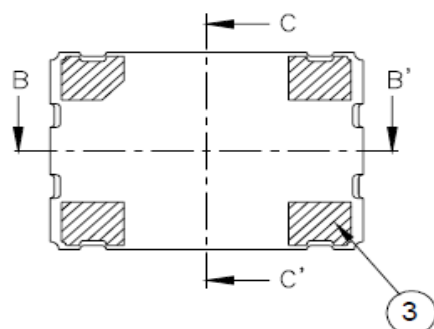
A-A' sectional drawing



B-B' sectional drawing



C-C' sectional drawing



NO	COMPONENTS	MATERIALS	FINISH/SPECIFICATIONS
1	LID	Kovar (Fe/Co/Ni)	

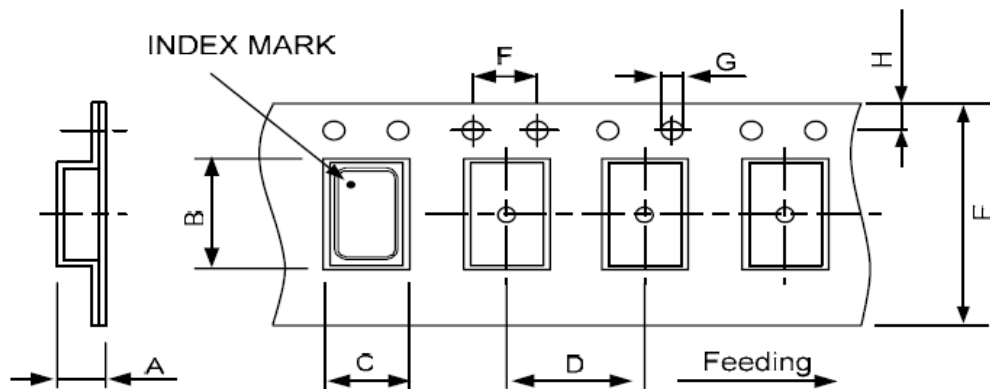
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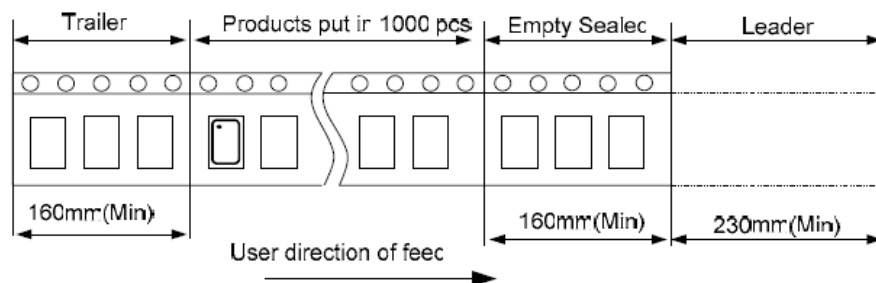
2	Base(Package)	Ceramic (Al ₂ O ₃) + Kovar (Fe/Co/Ni)+ Ag/Cu	Color black
3	PAD	Au	Tungsten metalize + Ni plating + Au plating
4	Crystal blank	SiO ₂	
5	Conductive adhesive	Ag	Silicon resin
6	Electrode	Noble Metal	
7	IC chip		
8	Bonding wire	Au	Pad 1 options : NC is 5 wires , EN is 6 wires.
9	Die attached	Conductive (Ag)	Epoxy resin

9. PACKING



DIMENSIONS	A	B	C	D	E	F	G	H	
	2.30	7.90	5.45	8.00	16.00	4.00	1.50	1.75	(UNIT : mm)

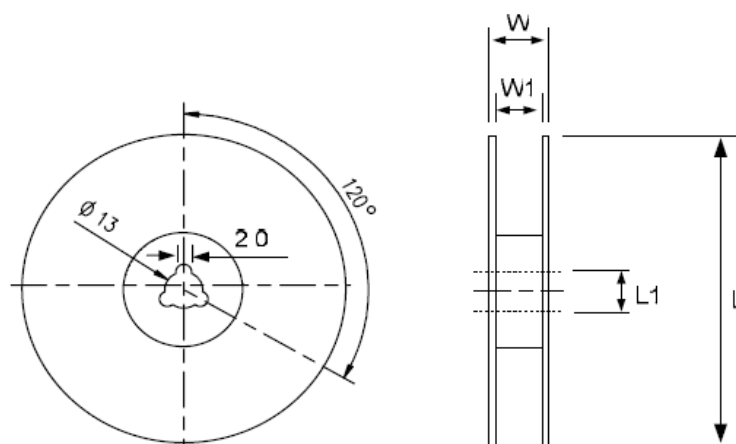
REMARK :



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DIMENSIONS	L	L1	W	W1	pcs / Reel (UNIT : mm)
	180	13	20.5	16	Standard Reel Quantity is 1,000 pcs per reel

10. 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 ²	MIL-STD-883E
5	Fine Leak	Helium Bomging 4.5 kgf / cm ² 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 Test time 10 ± 1 sec.	MIL-STD-202F

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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	Total 100 cycles of the following temperature cycle The diagram illustrates a thermal shock cycle. It starts at 125 ± 3 °C, ramps down to -55 ± 3 °C at a rate of 10 minutes maximum. It then dwells at -55 ± 3 °C for 10 minutes. Next, it ramps up to 125 ± 3 °C at a rate of 10 minutes maximum and dwells at 125 ± 3 °C for 10 minutes. This completes one cycle. The total number of cycles is 100. A reference temperature of 25 °C is also indicated.	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