

深圳市晶力源科技有限公司
Shenzhen Jingliyuan Technology Co., Ltd.



产品规格书
SPECIFICATION

CUSTOMER(客户):	
PRODUCT TYPE(型号):	SMDTCXO 2016
NOMINAL FREQ(频率):	32.000MHZ
JLY P/N(料号):	Y201632MNHCD
Brand(品牌):	JLYE晶力源
CUSTOMER P/N(客户料号):	

Client Opinion (客户意见)			
Hardware PL (工程)	QPM/SQE (品质)	Approval (核准)	Recognition (承认日期)

Provider (供应商)			
Drawn (制作)	Check (审核)	Approval (核准)	Submitted Date (日期)
刘来凤	徐超	李元	2026-06-15

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SPECIFICATION

1 Scope

- 1.1 This is Analog Temperature Compensated Crystal Oscillator. It can be applied to electronic equipment. It is lead-free product and it can satisfy RoHs requirements.

2 Construction

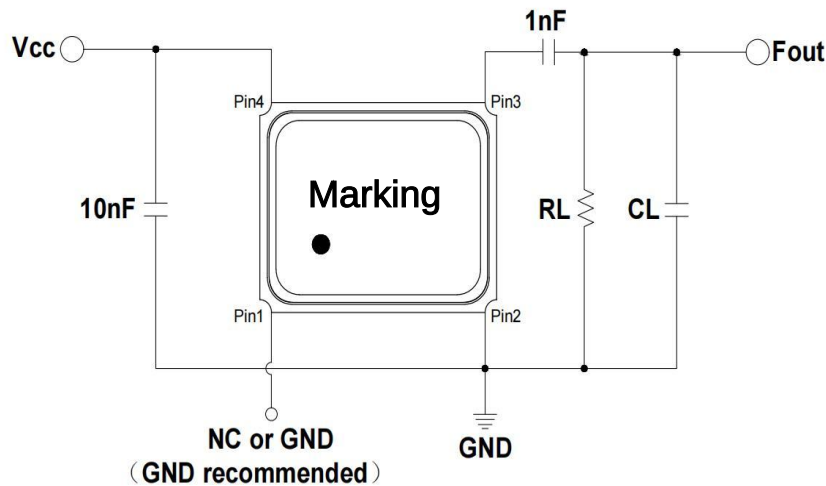
2.01 Type of Oscillators: **Temperature Compensated Crystal Oscillators**

2.02 Dimension: **2.0mm*1.6mm SMD 4 pads**

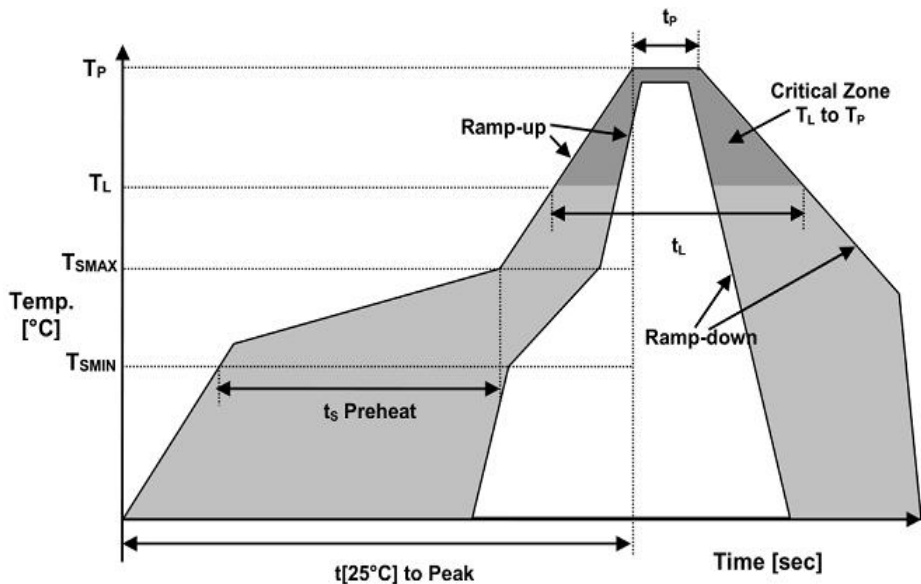
3 Electrical Characteristics

3.01 Nominal Frequency:	32.000MHz
3.02 Frequency Tolerance :	±1.5ppm at 25℃ ±2℃(after 2 times reflow)
3.03 Frequency Stability vs Temperature:	±0.5ppm from -40℃ to +85℃ refer 25℃
3.04 Frequency Stability vs Voltage:	±0.2ppm VDD±5%
3.05 Frequency Stability vs Load:	±0.2ppm CL±5%
3.06 Aging:	±1ppm/year
3.07 Operating Temperature Range:	-40℃ to +85℃
3.08 Storage Temperature Range:	-55℃ to +125℃
3.09 Power Supply Voltage (VDD):	1.8~3.3Vdc±5%
3.10 Current Consumption (Idd):	2mA max
3.11 Output Waveform:	Clipped Sine Wave/CMOS
3.12 Output Symmetry:	45%~55%
3.13 Output State Control:	YES
3.14 Low Level Output Voltage :	10%VDD max
3.15 High Level Output Voltage:	90%VDD min
3.16 Output Voltage Rise Time :	5ns Max
3.17 Output Voltage Fall Time:	5ns Max
3.18 Output Load(CL):	10KΩ//10pF ± 10%/ 15pf
3.19 Start-up Time:	2.0ms max
3.20 Phase Noise:	-125dBc/Hz at 1kHz offset

4.Test Circuit

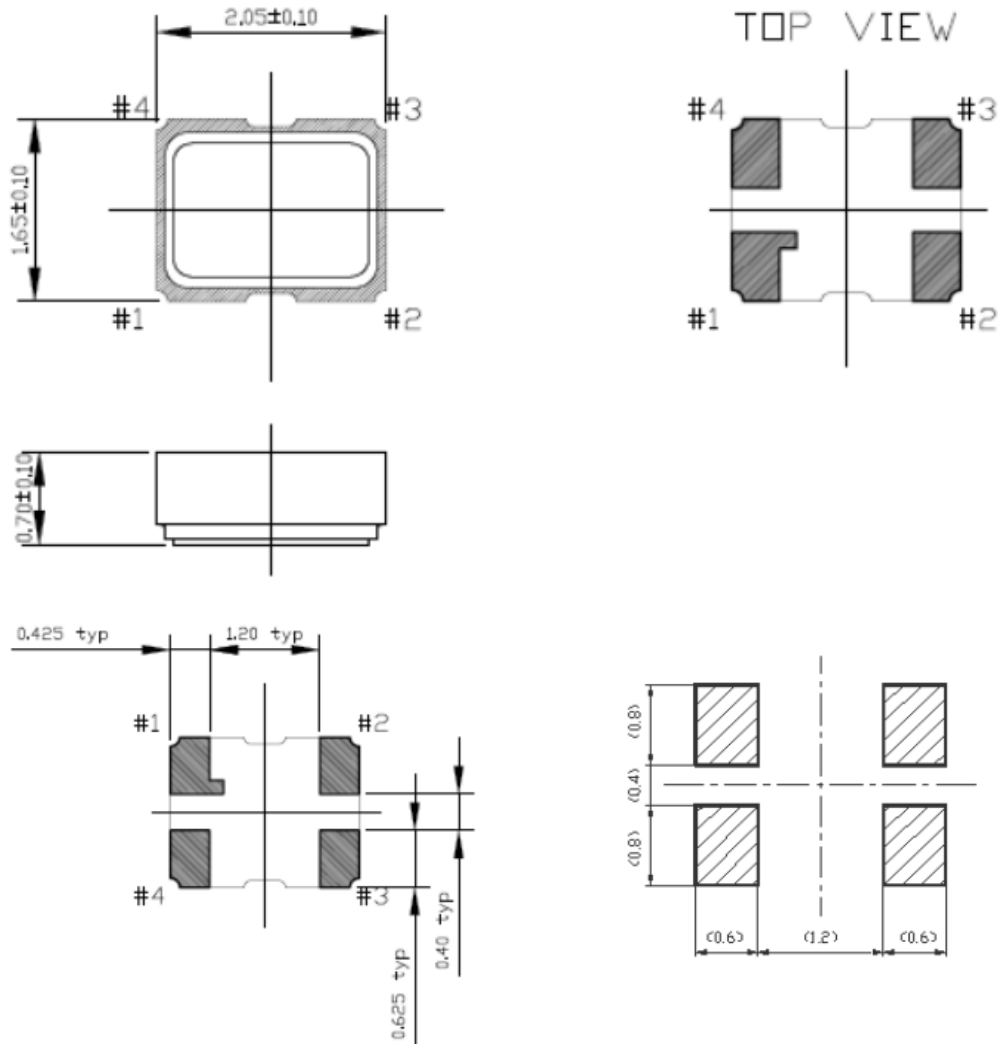


5.Recommended Reflow Profile



Reflow Profile		
Temperature MIN Preheat	T_{SMIN}	150°C
Temperature MAX Preheat	T_{SMAX}	200°C
Time (T_{SMIN} - T_{SMAX})	t_s	60-180s
Temperature	T_L	217°C
Peak Temperature	T_P	260°C
Ramp-up Rate	R_{UP}	3°C/s max
Ramp-Down Rate	R_{DOWN}	6°C/s max
Time within 5°C of Peak Temperature	t_p	10s
Time t (25°C) to Peak Temperature	t (25°C) to Peak	480s
Time	t_L	60-150s

6.Product Dimensions (MM)

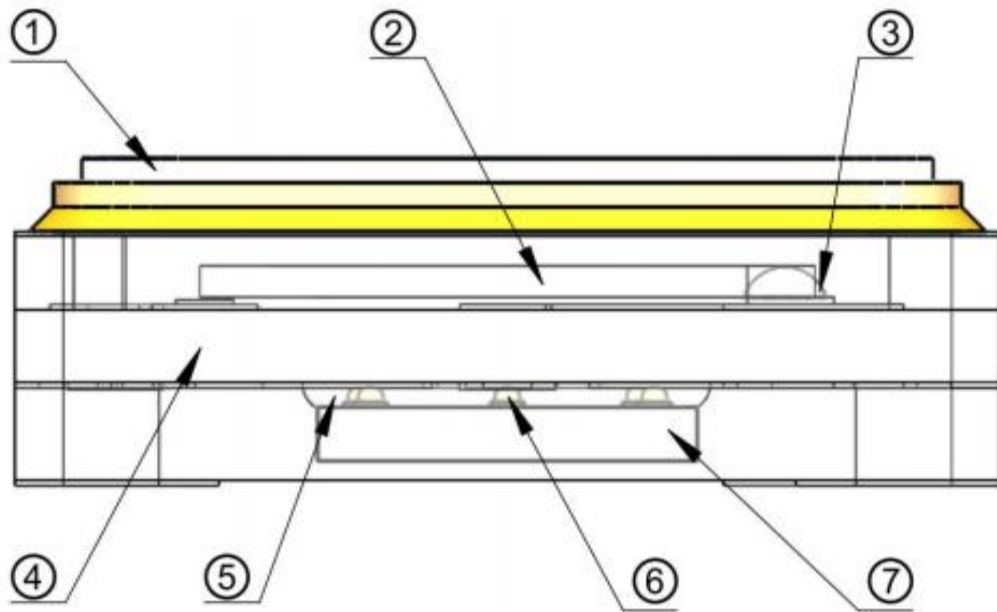


Pin Connection

Name	Connection
Pin 1	NC or GND (GND recommended)
Pin 2	GND
Pin 3	Fout
Pin 4	Vcc

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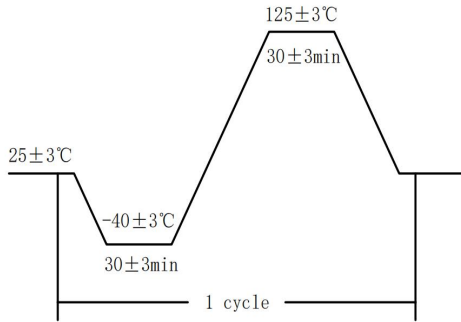
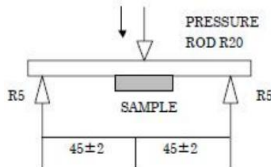
Structure Diagram



No.	Components	Materials
①	Lid	Fe-Ni-Co Alloy
②	Crystal Blank	SiO ₂
③	Conductive Adhesive	Ag+Silicone resin
④	Base	Ceramic+Noble Metal
⑤	Underfill	Epoxy
⑥	Bump	Au
⑦	IC	Si

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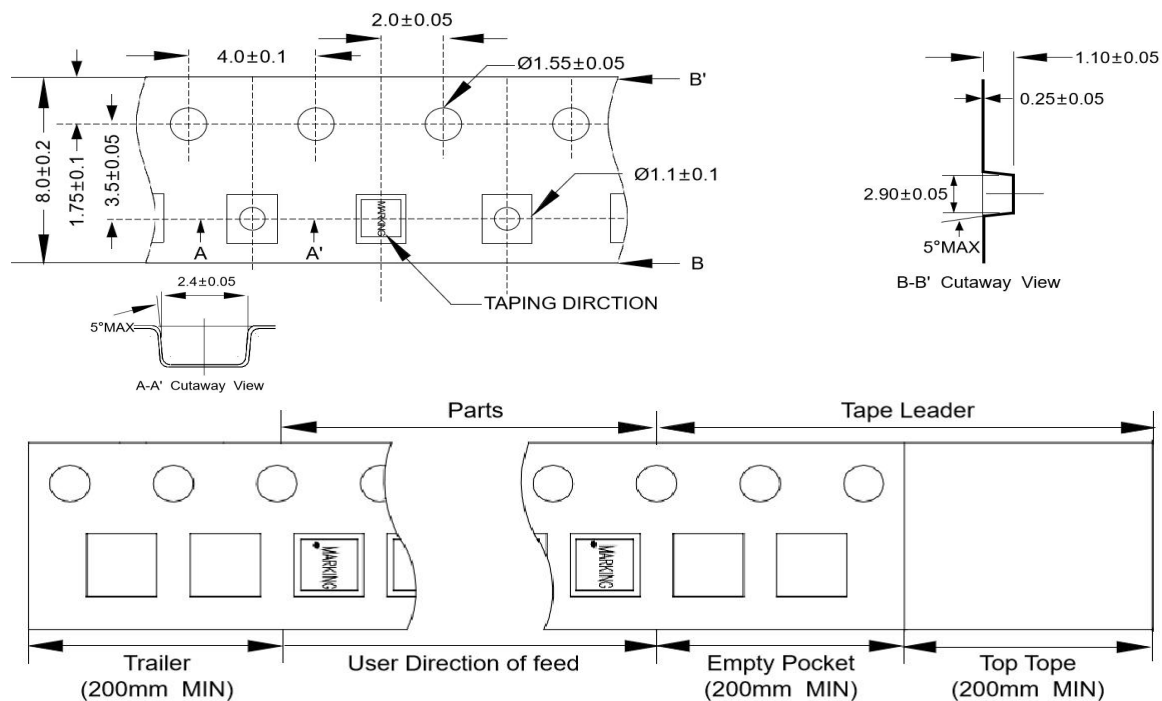
Reliability

No.	Item	Test Methods	Criteria
1	Low Temperature Storage	Temperature: $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ (or the specification shall prevail) Duration: 500 hours	± 5.0 ppm
2	High temperature and humidity	Temperature: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ Humidity: RH 85% Duration: 500 hours	± 5.0 ppm
3	Thermal Shock	 The diagram shows a thermal shock profile with three temperature levels: $25 \pm 3^{\circ}\text{C}$, $-40 \pm 3^{\circ}\text{C}$, and $125 \pm 3^{\circ}\text{C}$. The dwell times at -40°C and 125°C are both 30 ± 3 minutes. The transition between levels is linear. One complete cycle is indicated. Temperature: $-40^{\circ}\text{C} \sim 125^{\circ}\text{C}$ (or the specification shall prevail) Duration: 100 cycles	± 5.0 ppm
4	High Temperature Operating Life	Temperature : 85°C (or the specification shall prevail) Duration : 1000 hours Vdd Applied	± 5.0 ppm
5	Vibration	Duration : 2 hours/each direction Frequency range: 10 ~ 55 Hz Direction: 3 axis	± 5.0 ppm
6	Mechanical Shock	Acceleration: 100 g Duration: 6.0 ms Test cycles: 3 times for all 6 axis , half sina	± 5.0 ppm
7	Drop Test	Height: 100 cm Test cycles: 3 times	± 5.0 ppm
8	Solderability	Soldering bath temperature: $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Duration: 2 ± 0.6 second	95% Coated
9	Resistance to Soldering Heat	Soldering temperature : $260^{\circ}\text{C} \pm 10^{\circ}\text{C}$ Duration : 15 ± 5 second	± 5.0 ppm
10	Board Flex	Height: 3.0 mm Duration: 5 second Speed: 0.5mm/sec  The diagram shows a sample being flexed by a pressure rod (R20) supported by two points (R5). The distance from the center of the sample to each support point is 45 ± 2 mm.	± 5.0 ppm

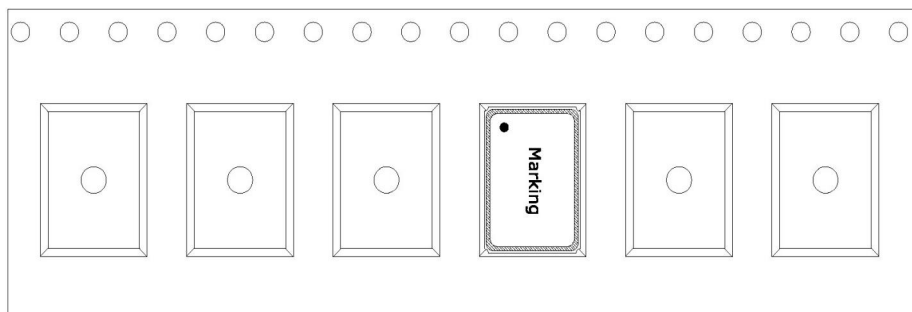
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Package Information

Tape (Carrier) Dimensions



The Direction of Packing



Reel Dimensions

