JYEG

RoHS Compliant

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APPROVAL SHEET

Customer :

Part Number :

JYEG P/N : JYOD1-(CMOS)

Holder : SMD OSC2016

Frequency : 0.032768~64.000MHZ

Manufacturer : Guoxin Jingyuan Electronics

Date : 2025/12/27

Prepared	Checked	Approved
Huang Mingxing	Yang Tiesheng	Zhang Liqiang

(For Customer Use)

Acceptable	Non-Acceptable

Revision History

No.	Revised Date	Change Content	Approved	Remark
V1.0	25.12.27	Initial release	Yang Tiesheng	

1. This specification applies to SMD clock oscillator with a frequency of 0.032768~64.000MHz.

2. Electrical characteristics

ITEM/TYPE	OSC SMD2016	
Frequency Range	0.032768~64.000MHz(AT1)	
Frequency Stability	±25ppm/±30ppm/±50ppm/±100ppm,or specify	
Operating Temperature Range	-20~70℃/-40~85℃/-40~105℃/-40~125℃	
Output Load	1-5TTL or CMOS 30PF Max	
Input Current	32.768KHz	≤0.5mA
	≤35MHz	≤8mA
	35~50MHz	≤16mA
	＞50MHz	≤25mA
Supply Voltage	5V±10%/3.3V±10%/2.5V±10%/1.8V±10%	
Start-up Time	1ms/3ms Max.(AT1)	
Duty Cycle	40%-60% Normal,45%-55% Tight	
Rise/FallTime	5ns Max	
Out “0”Level	TTL	CMOS
	0.4VMax	10%VDD Max
Out “1”Level	TTL	CMOS
	2.4V Min	90% VDD Min
Tri-state	Pin1：0.7VDD Min.(High) or open,Output：Enable Pin1：0.3VDD Max.(Low), Out：Disable	
Jitter(12KHz-20MHz)	1ps Max	
Aging	±3ppm/year Max	
Storage Temperature Range	-55-125℃	

Note 1:frequency tolerance@25℃ and frequency stability vs. operating temperature range and voltage variance.

3. Construction

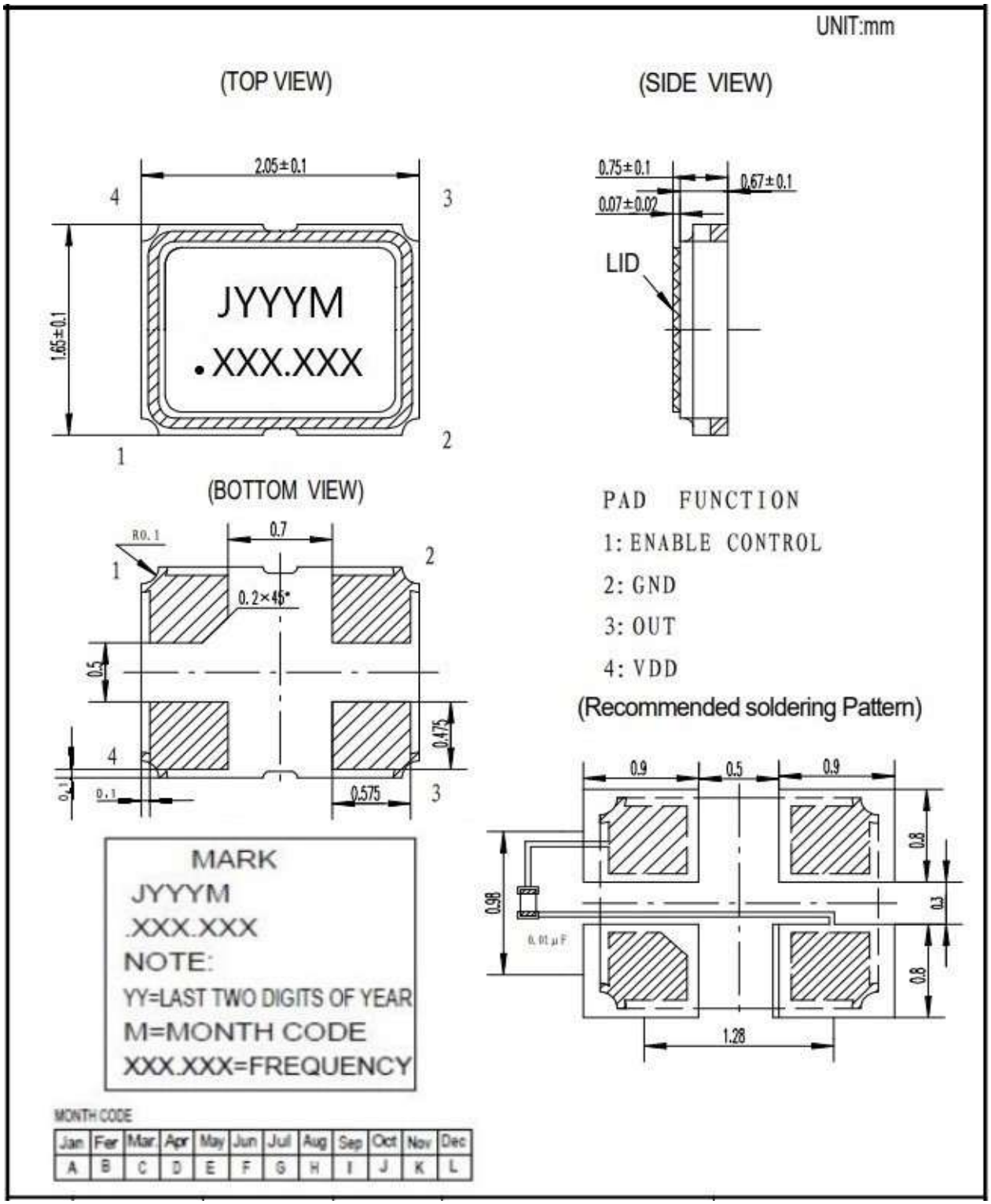
3.1 Crystal enclosure seal:

■ Seam seal □ resistance weld □cold weld

3.2 crystal enclosure medium

□ nitrogen ■ vacuum □ dry air

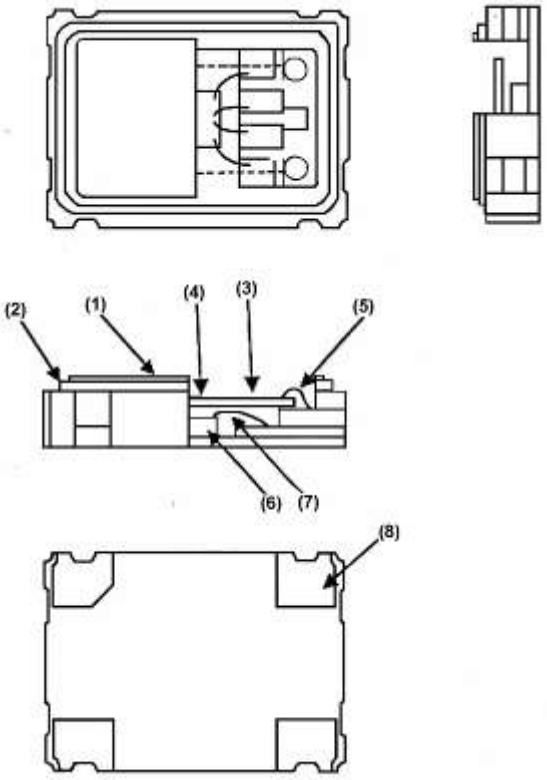
4.Dimension:



5. Marking

■ Laser Marking □ Ink Marking

6.Inside Structure



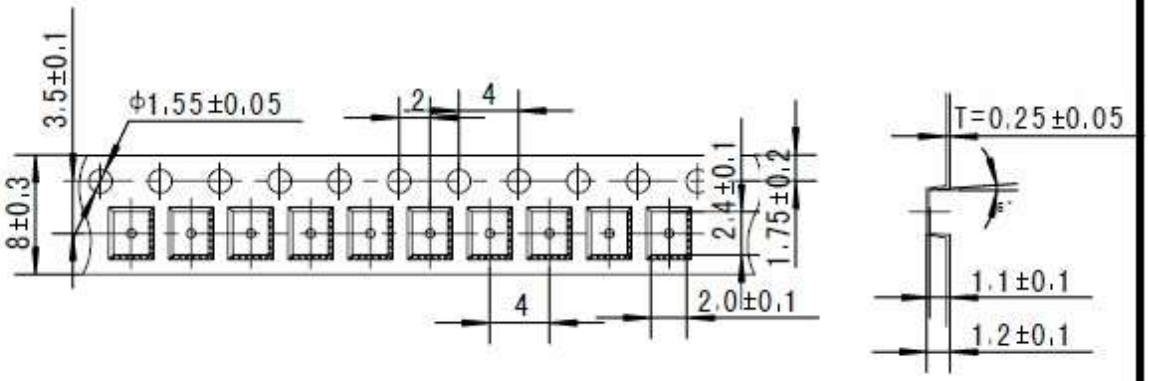
No.	Name	Material
(1)	Can	Fe-Co-Ni
(2)	Base	Ceramic
(3)	Blank	Quartz
(4)	Electrode	Ag
(5)	Epoxy	Silicon +Ag
(6)	IC	Silicon
(7)	Wire	Au
(8)	Soldering pads	Au plated

7.Taping Dimension and Packing Instruction

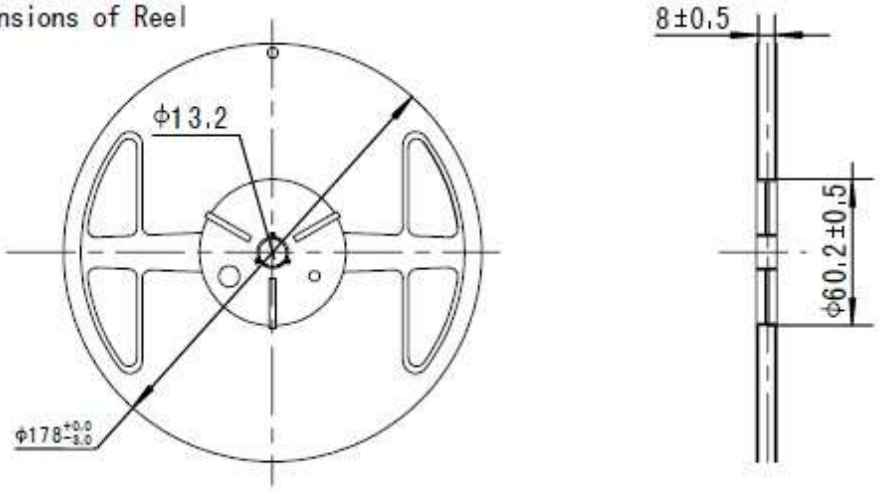
7.1

UNIT:mm

1.Dimensions of Carrier Tape



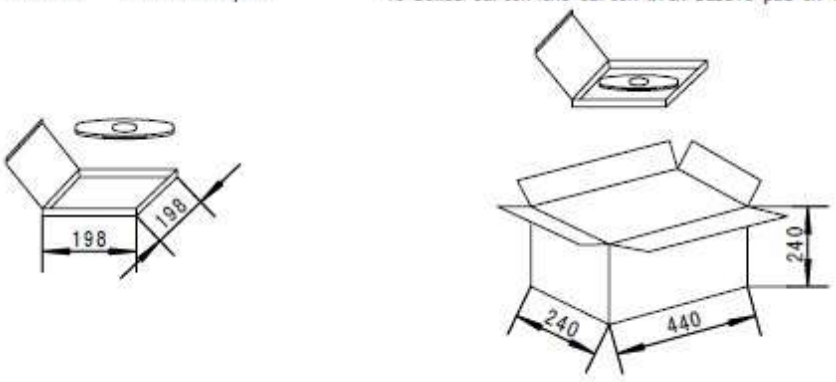
2.Dimensions of Reel



3.Packing

1 reel/box 1 reel=3000pcs

10 boxes/carton(the carton with bubble pad on four sides)



7.2

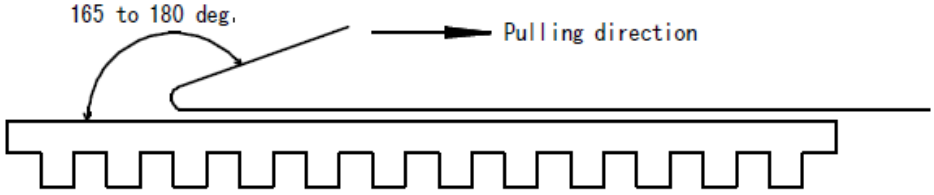
Release strength of cover tape

It has to between 30g to 90g under following condition.

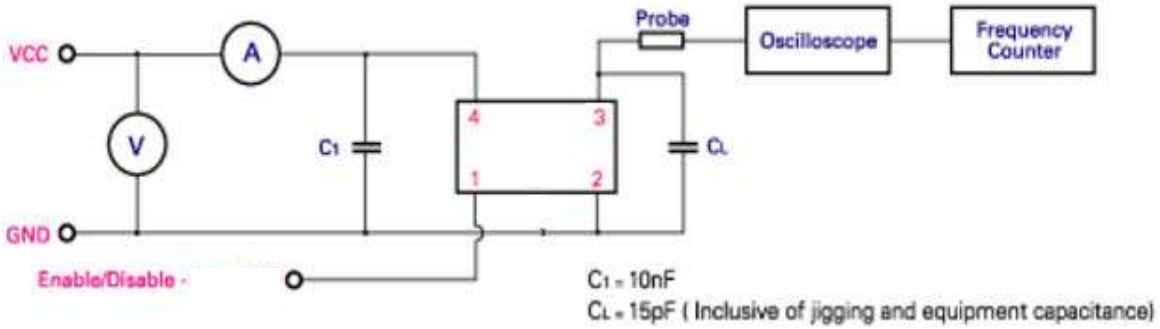
Pulling direction : 165 deg. to 180 deg.

Speed : 300mm/min.

Otherwise unless specified.



8. Test circuit



9.Electro-static Discharges

9.1 HBM/ESD and MM/ESD Classilication

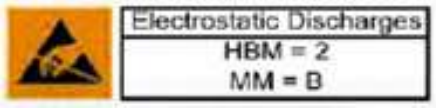
HBM/ESD Component Classilication:

HBM/ESD	Voltage Range(V)
1	0~1999
2	2000~3999
3	4000~ABOVE

MM/ESD Component Classilication:

MM/ESD	Voltage Range(V)
A	0~199
B	200~399
C	400~ABOVE

9.2 OSCILLATOR Production For ESD Classilication:



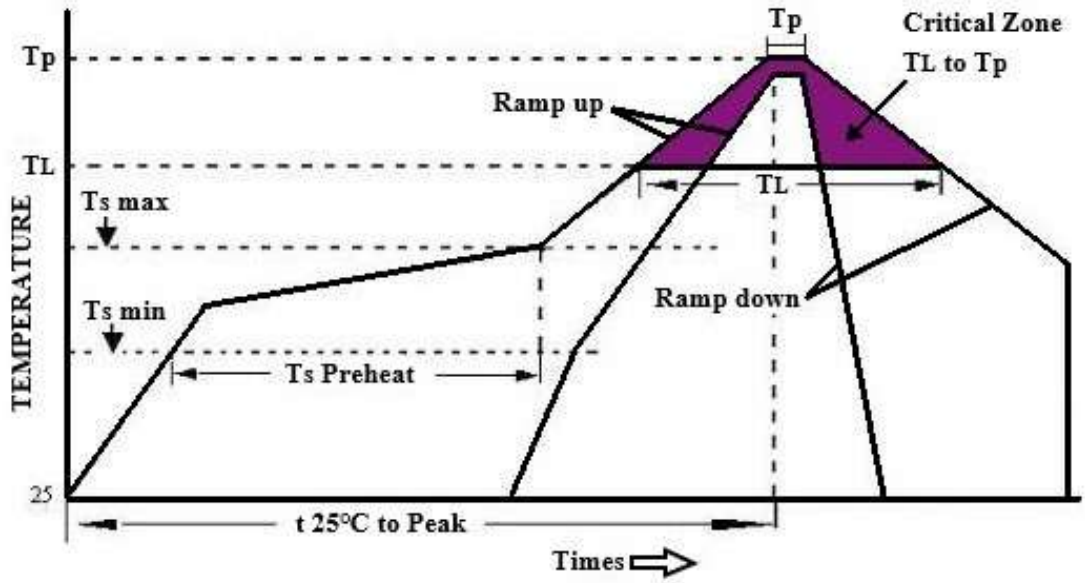
10.Reliability characteristic:

NO	Item	Condition	Specifications	Reference
10.1	HighTemperature Exposure (Storage) 高温存储	1000 hrs. at rated operating temperature r 1000 hrs at 85°C. npowered.Measurement at 24±2 hours after test conclusion. 元件就贮存在 85°C 下 1000 小时，在试验结束后 24±2 小时测试。	△F/F0≤+/-10ppm I≤5mAor20%	MIL-STD-202 Method 108
10.2	Temperature Cycling 温度循环	-40° C to125°C part the1000 cycles will be at that perature rating.Measurement at 24±2 hours after test conclusion.30min maximum dwell time at each temperature extreme. 1 min. maximum transition time. 从-40℃~+125°C 1000 次循环。在试验结束后 24±2 小时测试。每个温度的停留时间不超过 30 分钟。转换时间不超过 1 分钟。	△F/F0≤+/-10ppm I≤5mAor20%	JESD22 Method JA-104
10.3	Biased Humidity 稳态湿热	1000 hours 85°C/85%RH. Rated VDD applied with 1MΩ and inverter in parallel, 2X resonator CL capacitors between each resonator leg and GND.Measurement at 24±2 hours after test conclusion. 在温度 85°C，湿度 85%的条件下放置 1000 个小时在试验结束后 24±2 小时测试。	△F/F0≤+/-10ppm I≤5mAor20%	MIL-STD-202 Method 103
10.4	Operational Life 高温寿命	125°C 1000 hrs. Measurement at 24±2 hours after test conclusion. 125°C 下 1000 个小时，用相同测试线路在时间结束后 24±2 小时测试。	△F/F0≤+/-10ppm I≤5mAor20%	MIL-STD-202 Method 108
10.5	Mechanical Shock 机械冲击	MIL-STD-202Method 213Figure 1 of Method 213. Condition C 见 213 方法，试验条件：半正弦波 峰值 100g 持续时间 6ms 速度变化 3.75m/s，对样品 6 个方向 3 次，共 18 次施以冲击	△F/F0≤+/-10ppm I≤5mAor20%	MIL-STD-202 Method 213
10.6	Vibration 振动	MIL-STD-202Method 204 5g 的力 20 分钟，用 8*5*0.031 英寸的 PCB 在 3 个方向各做 12 个循环。在 8 英寸边上有 7 个支撑点，在对面的角上两个支撑点。器件安装在任意一个支撑点的 2 英寸范围内。测试从 10HZ-2000HZ.	△F/F0≤+/-10ppm I≤5mAor20%	MIL-STD-202 Method 204

10.7	Resistance to Soldering Heat 耐焊接热	Condition B No pre-heat of samples. Note: SingleWave solder - Procedure 1 with solder within 1.5 mm of device body for Leaded. Procedure 1 except 245°C and immerse only to level to cover terminals for SMD. 未预热的样品 Condition B. 备注：单波焊接-Porcedure 1 引脚产品焊料少于 1.5mm,除了 245℃外其他 Procedure 1，SMD 产品浸到覆盖 SMD 引脚。	△F/F0≤+/-10ppm I≤5mAor20%	MIL-STD-202 Method 210
10.8	Solderability 可焊性	引脚产品： Method A@245℃,category 3. SMD 产品：Method D category3 @260℃ √	Electrical Test not required. Magnification 50 X.>95%tin 不测电参数 >95%浸润.	J-STD-002
10.9	Board Flex 线路板弯曲	60 sec minimum holding time. 最少保留 60 秒。	10 倍放大镜下检查没有明显伤痕。	AEC Q200-005
10.10	Terminal Strength 引线、引脚强度(SMD)	Terminal Strength Surface Mount / Shear Stress Test 施加 1.8kg 力 60 sec 测试带引脚器件的引脚整体试验。 条件： A(2.27Kg) C(227g)	有明显断裂、伤痕。	AEC Q200-006

11.All products are RoHs compliant

12. Reflow Profile



High Temperature Infrared /Convection

Note:Temperature shown are applied to body of device

Ts max to T_L(Ramp-up Rate)	3℃/second max
Preheat Temperature Min(Ts Min) Temperature Typical(Ts Typ) Temperature Max.(Ts Max) Time(ts)	 150℃ 175℃ 200℃ 60-180 seconds
Ram-up Rate(T_L to Tp)	3℃/second Max
Time Maintained Above: --Temperature(T_L) --Time(T_L)	 217℃ 60-150seconds
Peak Temperature (Tp)	260℃ Max for 10 seconds
Time within 5℃ of actual peak(t_p)	20-40 seconds
Ramp-down Rate	6℃/seconds Max
Tune 25℃ to Peak Temperature(t)	8 minutes Max
Moisture Sensitivity Level	Level 1

High Temperature Manual Soldering

Note:Temperature shown are applied to body of device

260℃ Max for 10 seconds Max, 4 times Max