

**Tangshan Guoxin Jingyuan Electronics Co.,Ltd**

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Customer : _____

Part Number : _____

JYEG P/N : JYVCD3H7G3BC5Y-38.880

Holder : SMD3225 VCXO

Frequency : 38.880MHZ

Manufacturer : Guoxin Jingyuan Electronics

Date : 2024/11/06

Prepared	Checked	Approved
Huang Mingxing	Yang Tiesheng	Zhang Liqiang

(For Customer Use)

Acceptable	Non-Acceptable

[illegible]

1. This specification applies to SMD Voltage Controlled Crystal Oscillator with a frequency of 38.880MHz.

2. Electrical characteristics

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Nominal Frequency				38.880		MHz
Oscillation Mode		Fund.				
Operating Temperature	TA	—	-40	25	85	°C
Storage Temperature	TSTG	—	-55		125	°C
Total Stability		See Note 1	-50		50	ppm
Operating Supply Voltage	VDD	±10%		3.3		V
Current Consumption	Icc		-		10	mA
Standby Function		Internal Pull Up	YES			
Output Type			CMOS			
Output Load			15PF			
Output Voltage High			0.9VDD	-	-	V
Output Voltage Low					0.1VDD	V
Rise and Fall Time	Tr/Tf	10%~90%Output Swing			5	nS
Duty Cycle			45		55	%
Phase Jitter	RMS	12kHz to 20MHzBW	-		0.8	pS
Start-up Time		T0 90% of Final Amplitude			3	mS
Control Voltage	VC	—	0		3.3	V
Pull Range			±100			ppm
Modulation Band Width	Fc		15	20		KHZ
VC Pin Input Impedance			5			MΩ
Linearity	Lin	Vc=0 to 3.3V	-10		10	%
Aging		One Year Aging Rate	-3		+3	ppm
		15 Years Aging Rate	-10		+10	ppm
Phase Noise		10Hz	-	-		dBc
		100Hz	-	-		dBc
		1KHz	-	-		dBc
		10KHz	-	-		dBc
		100KHz	-	-		dBc
		1M	-	-		dBc

Note: 1.inclusive of frequency tolerance@25°C and frequency stability vs.operating temperature range.

3. Construction

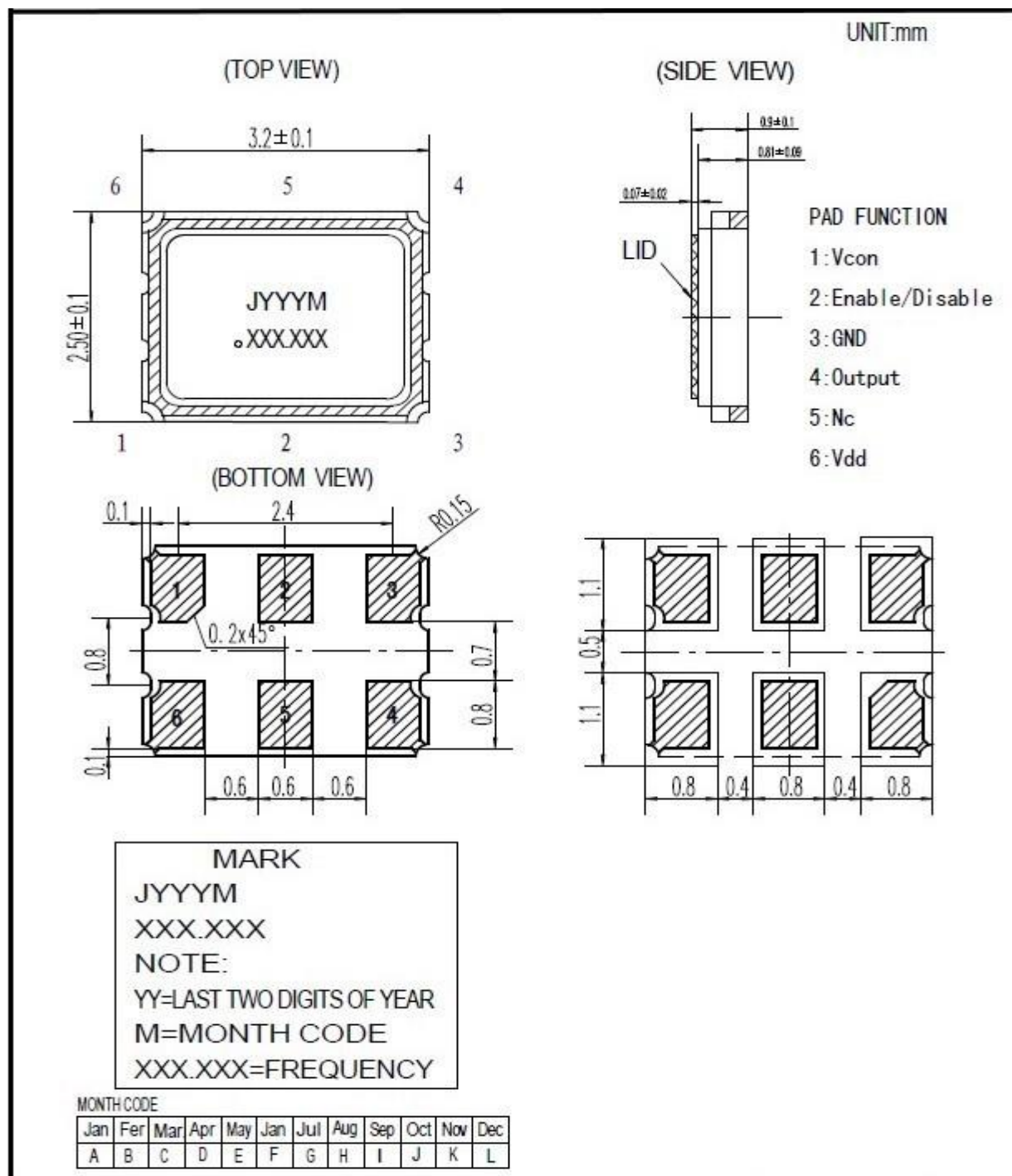
3.1 Crystal enclosure seal:

☒ Seam seal ☐ resistance weld ☐ cold weld

3.2 crystal enclosure medium

☐ nitrogen ☒ vacuum ☐ dry air

4.Dimension:

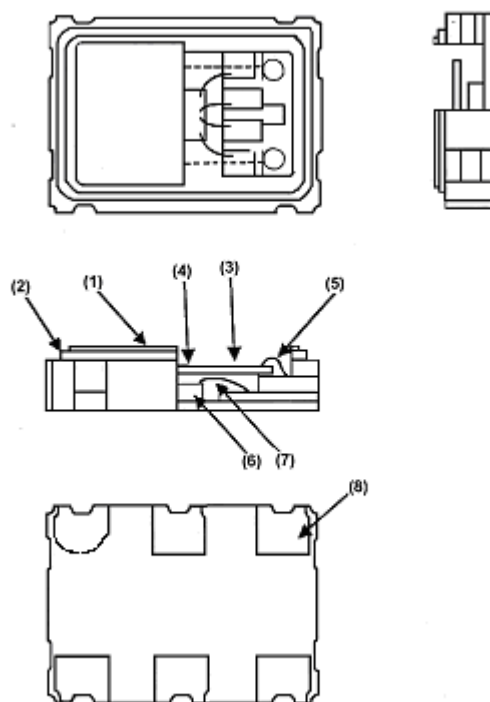


Remark: • ---Pin 1 #

5. Marking

☒ Laser Marking ☐ Ink Marking

6.Inside Structure



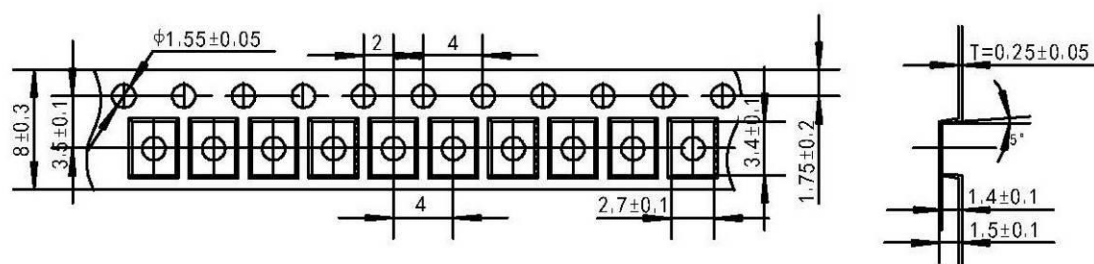
No.	Name	Material
(1)	Can	Fe-Co-Ni
(2)	Base	Ceramic
(3)	Blank	Quartz
(4)	Electrode	Ag
(5)	Epoxy	Silicon +Ag
(6)	IC	Silicon
(7)	Wire	Au
(8)	Soldering pads	Au plated

7.Taping Dimension and Packing Instruction

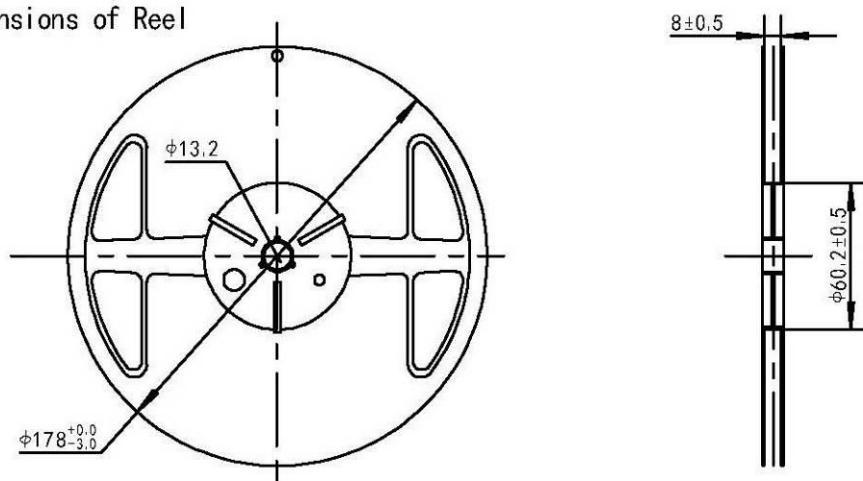
7.1

1.Dimensions of Carrier Tape

UNIT:mm



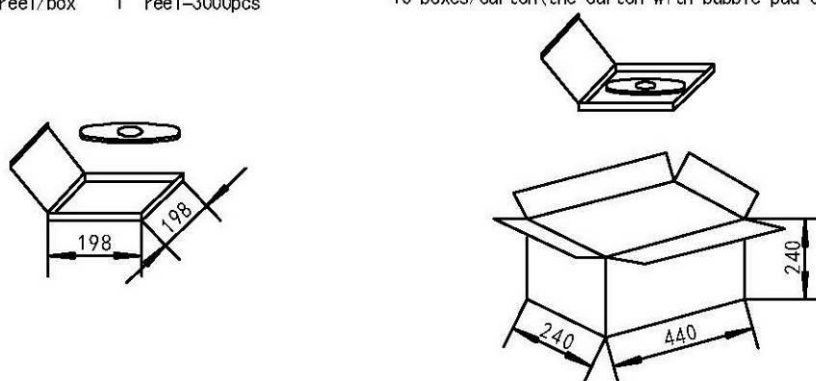
2.Dimensions of Reel



3.Packing

1 reel/box 1 reel=3000pcs

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



7.2

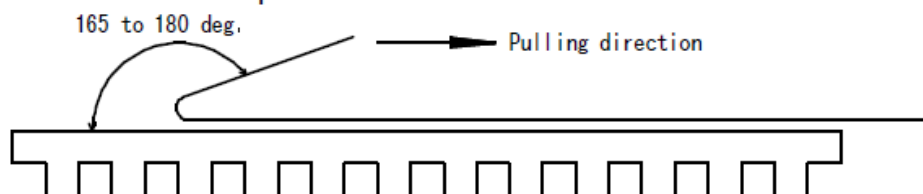
Release strength of cover tape

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

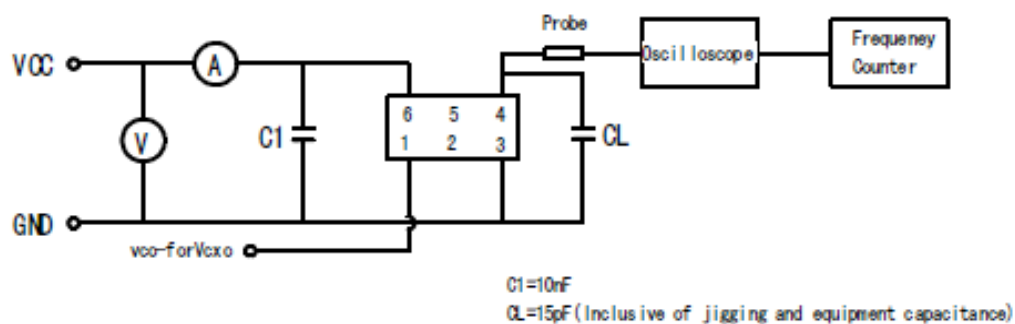
Pulling direction : 165 deg. to 180 deg.

Speed : 300mm/min.

Otherwise unless specified.



8. Test circuit



ENABLE TRUTH TABLE

PIN 2 or PIN 5	PIN 4
Logic '1'	Output
Open	Output
Logic '0'	High Imp.

9. Electro-static Discharges

9.1 HBM/ESD and MM/ESD Classification

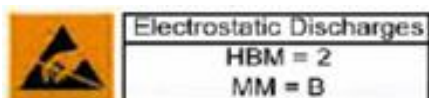
HBM/ESD Component Classification:

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

MM/ESD Component Classification:

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

9.2 OSCILLATOR Production For ESD Classification:

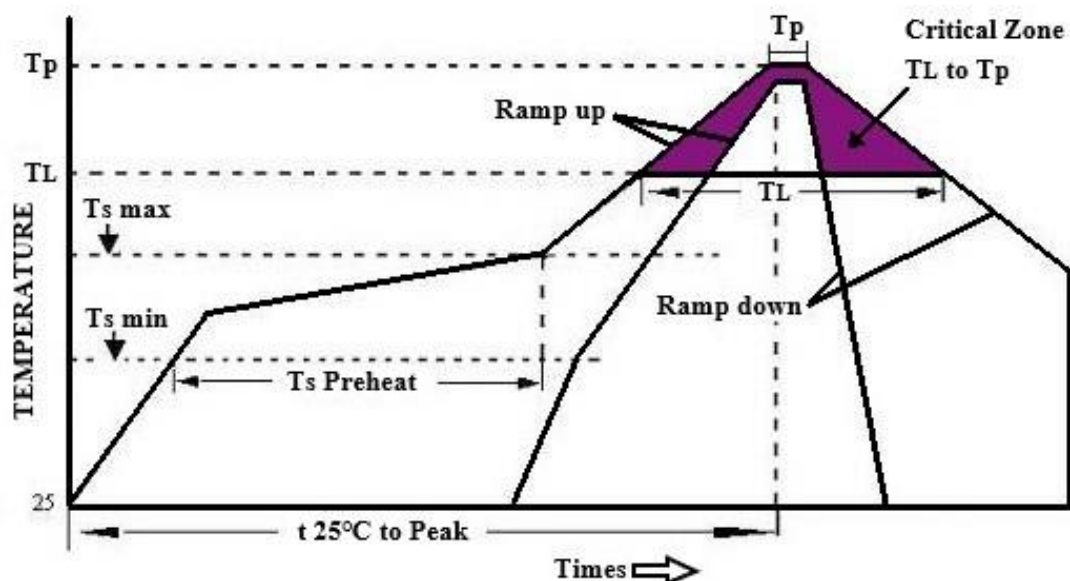


10. Reliability characteristic:

	Item	Condition	Reference	Specifications												
10.1	Solderability	Solder bath temperature:260℃ , dwell time:5 seconds, Solder: 100% tin	IEC68-2-20:1979	A new uniform coating of solder shall cover a minimum of 95% of the surface being immersed.												
10.2	Resistance to soldering heat	Solder temperature 260+/-3℃ ,Immersion time:10 S Solder bath composition:100% tin	IEC68-2-58:1989	$\Delta F_{\leq} \pm 5 \text{ppm}$												
10.3	Vibration	The entire frequency range: 10Hz to 55Hz ,Amplitude:1.5mm This motion shall be applied for a period of 2 h in each of 3 mutually perpendicular axes(a total of 6h)	IEC 68-2-21:1992	$\Delta F_{\leq} \pm 5 \text{ppm}$												
10.4	Drop test	Drop from 75cm height on 3cm hard wooden board for 6 times	IEC68-2-32:1990	$\Delta F_{\leq} \pm 5 \text{ppm}$												
10.5	Cold Storage	The quartz crystal unit shall be stored at a temperature of -40+/-3℃ for 1000 h.then it shall be subjected to standard atmospheric conditions for 1h after which measurement shall be made.	IEC68-2-6:1982	$\Delta F_{\leq} \pm 5 \text{ppm}$												
10.6	High temperature high humidity storage (steady state)	The quartz crystal unit shall be stored at a temperature of 40+/-2℃ with relative humidity of 95% for 1000h, then it shall be subjected to standard atmospheric conditions for 2h after which measurement shall be made.	IEC60068-2-1:1990	$\Delta F_{\leq} \pm 5 \text{ppm}$												
10.7	Thermal shock	The quartz crystal unit shall be subjected to 50 successive Change of temperature cycles. Each as shown in table below ,then it shall be subjected to standard atmospheric conditions for 1h after which measurement shall be made. <table><tr><td></td><td>Temperature</td><td>Duration</td></tr><tr><td>1.</td><td>-40+/-3℃</td><td>15minutes</td></tr><tr><td>2.</td><td>105+/-2℃</td><td>15minutes</td></tr><tr><td>3.</td><td>Transition time</td><td>Within 10 seconds</td></tr></table>		Temperature	Duration	1.	-40+/-3℃	15minutes	2.	105+/-2℃	15minutes	3.	Transition time	Within 10 seconds	IEC68-2-14:1986	$\Delta F_{\leq} \pm 5 \text{ppm}$
	Temperature	Duration														
1.	-40+/-3℃	15minutes														
2.	105+/-2℃	15minutes														
3.	Transition time	Within 10 seconds														
10.8	Sealing	Helium leakage detector shall used to measure the leakage rate of gas through any faulty seal. Pressure:500Kpa, duration:120 minutes.	IEC68-2-3:1984	Leakage rates $\leq 1 \times 10^{-9} \text{ Pa} \cdot \text{m}^3/\text{S}$												
10.9	High temperature Life test	The quartz crystal unit shall be stored at a temperature of 105+/-3℃ for 168h ,then it shall be subjected to standard atmospheric condition for 1h after which measurement shall be made.	IEC60068-2-2:1974	$\Delta F_{\leq} \pm 5 \text{ppm}$												

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 TL(Ramp-up Rate)	3°C/second max
Preheat	
Temperature Min(Ts Min)	150°C
Temperature Typical(Ts Typ)	175°C
Temperature Max.(Ts Max)	200°C
Time(ts)	60-180 seconds
Ram-up Rate(TL to Tp)	3°C/second Max
Time Maintained Above:	
--Temperature(TL)	217°C
--Time(TL)	60-150seconds
Peak Temperature (Tp)	260°C Max for 10 seconds
Time within 5°C of actual peak(tp)	20-40 seconds
Ramp-down Rate	6°C/seconds Max
Tune 25°C 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°C Max for 10 seconds Max, 4 times Max