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唐山晶源电子有限公司
Tangshan Jingyuan Electronics Co.,LTD

ROHS COMPLIANT

APPROVAL SHEET

JYEG Part No.: 11075125000.0073

Holder : SMD7050OSC

Frequency: 125.000MHZ

Manufacturer: Jingyuan Electronics

Date: 2015/06/17

Prepared	Checked	Approved
Yang Tiesheng	Hao Jianjun	Zhang Liqiang

Revision History

No.	Revised Date	Change Content	Approved	Remark

1.This specification applies to SMD clock oscillator with a frequency of 125.000MHz.

2. Electrical characteristics

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Normal Frequency Range			-	125.000	-	MHz
Vibration Mode		3rd.	-	-	-	-
Total Stability	$\Delta f/f_n$	frequency tolerance@25°C and frequency stability vs. operating temperature range and voltage variance and 1 year aging.	-50	-	+50	ppm
Operating Temperature	TA	-	-20	25	70	°C
Storage Temperature	TSTG	-	-55	-	155	°C
Operating Supply Voltage	Vcc	±10%	2.97	3.30	3.63	V
Start up time					3	mS
Supply Current	Icc		-	-	40	mA
Maximum Supply Voltage Range	Vcc	-	-0.5		6.0	V
Enable/disable function	Logic "1"Or Floating input,Outputs enable; Logic "0" ,Outputs disable					
Enable Feature						
"H"Input Voltage	VIH		Vcc*0.7			V
"L"Input Voltage	VIL				Vcc*0.3	V
Supply Variation		Vcc±5%	-2	-	+2	ppm
Load Variation		CL±5%	-1	-	+1	ppm
Aging/year			-2		+2	ppm
Output Load Capacitance	CL	COMS			15	pF
"H"Output Voltage	VOH		VCC*0.9	-	-	V
"L"Output Voltage	VOL		-	-	VCC*0.1	V
Duty Cycle	Duty	CL=15pF,Vc=1/2 Vcc	45	-	55	%

Rise and Fall Time	Tr/Tf	CL=15pF,10%~90% Vcc	-	-	5	nS
Phase Noise		10Hz	-	-82	-	dBc
		100Hz	-	-115	-	dBc
		1KHz	-	-137	-	dBc
		10KHz	-	-148	-	dBc
		100KHz	-	-152	-	dBc
		1M	-	-154	-	dBc
Jitter	RMS	12kHz to 20MHz	-	-	1	ps

3. Construction

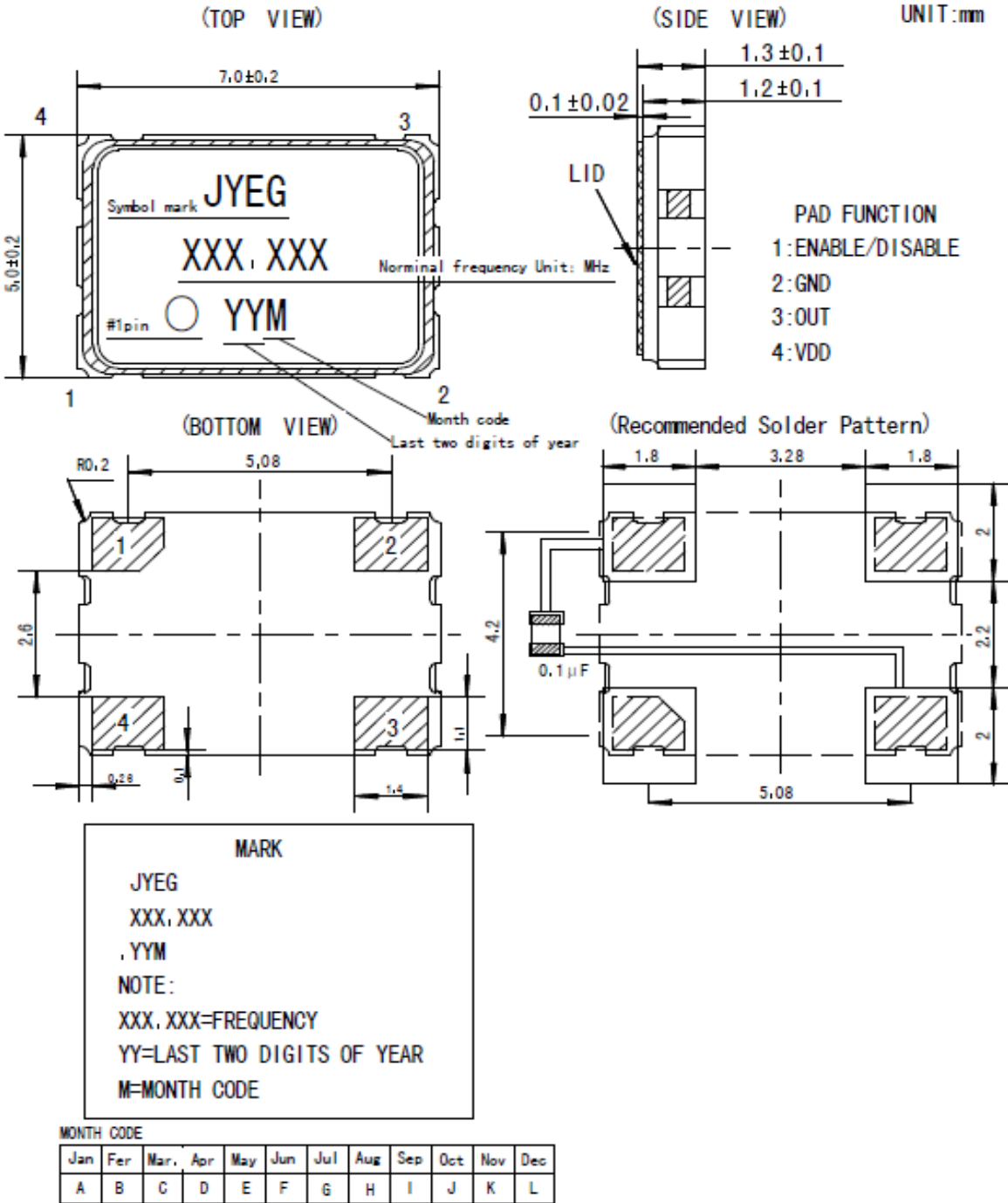
3.1 Crystal enclosure seal:

- Seam seal
- resistance weld
- cold weld

3.2 crystal enclosure medium

- nitrogen
- vacuum
- dry air

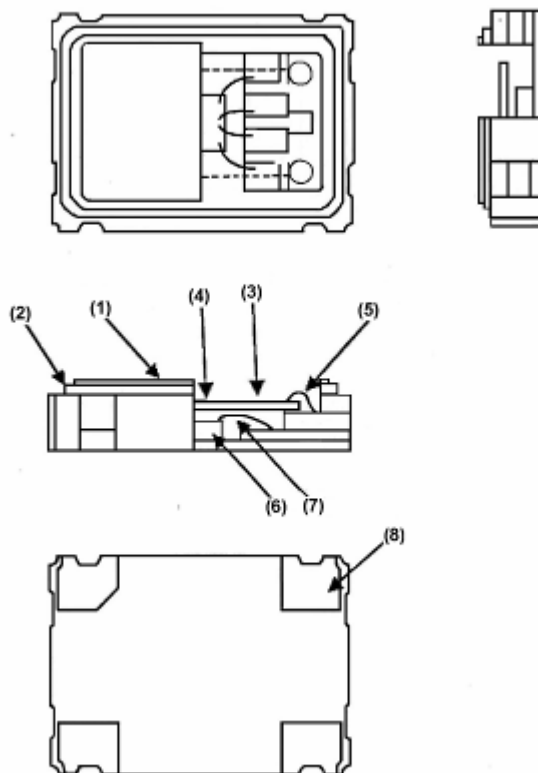
4.Dimension:



5. Marking

- Laser Marking
- Ink Marking

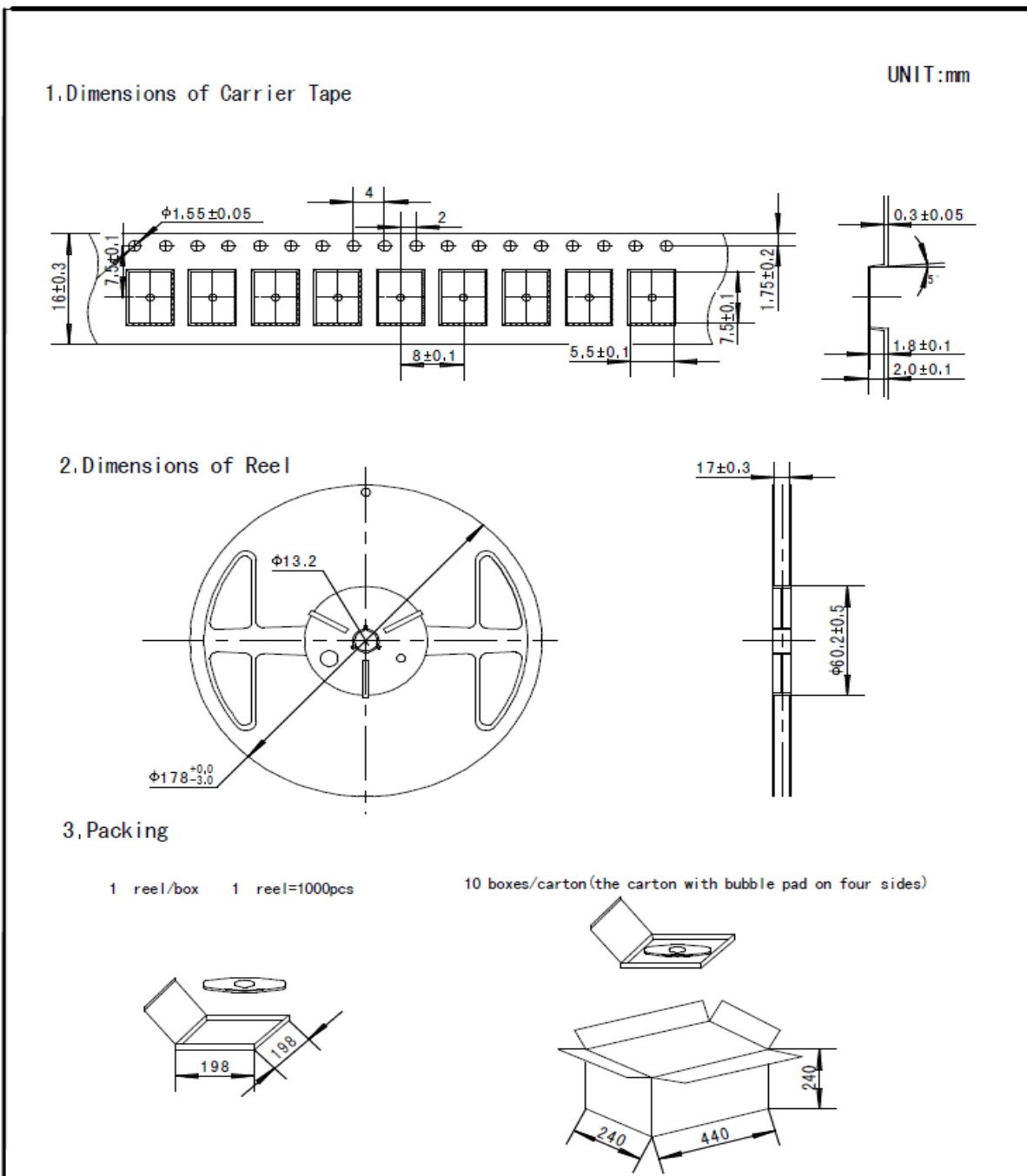
6.Inside Structure



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



				同方国芯-晶源电子		
V1.0	初版	张永生	2012-8-1	SMD7050-16包装尺寸图		
版本	修改内容	批准	日期			
设计	张永生	2012-8-1	阶段标记	重量	比例	JY/TS2-011-JL2013
审核	张永生	2012-8-1			2:1	
批准	张永生	2012-8-1	共 1 张 第 1 张			

7.2

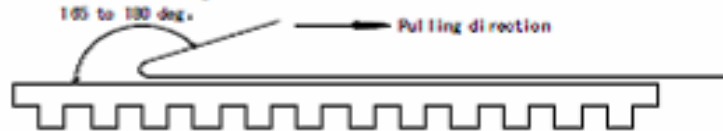
.Release strength of cover tape

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

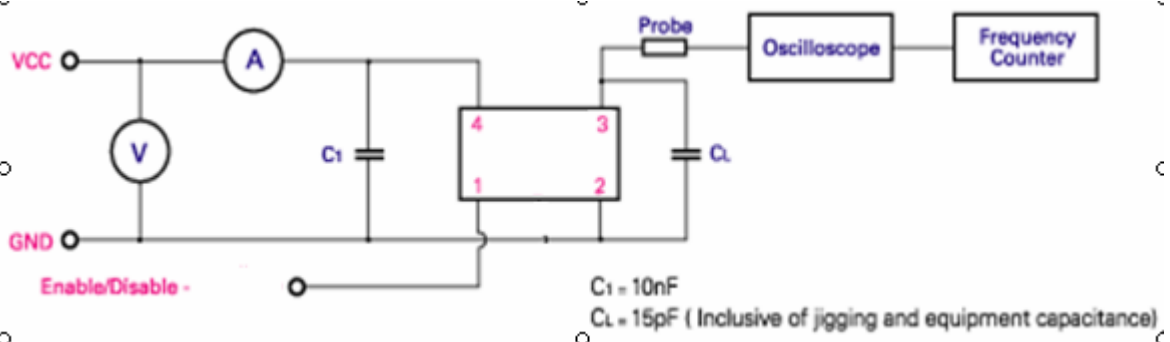
Pulling direction : 165 deg. to 180 deg.

Speed : 300mm/min.

Otherwise unless specified.



8. Test circuit



9. Electro-static Discharges

9.1 HBM/ESD and MM/ESD Classification

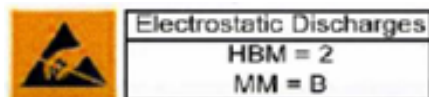
HBM/ESD Component Classification:

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:



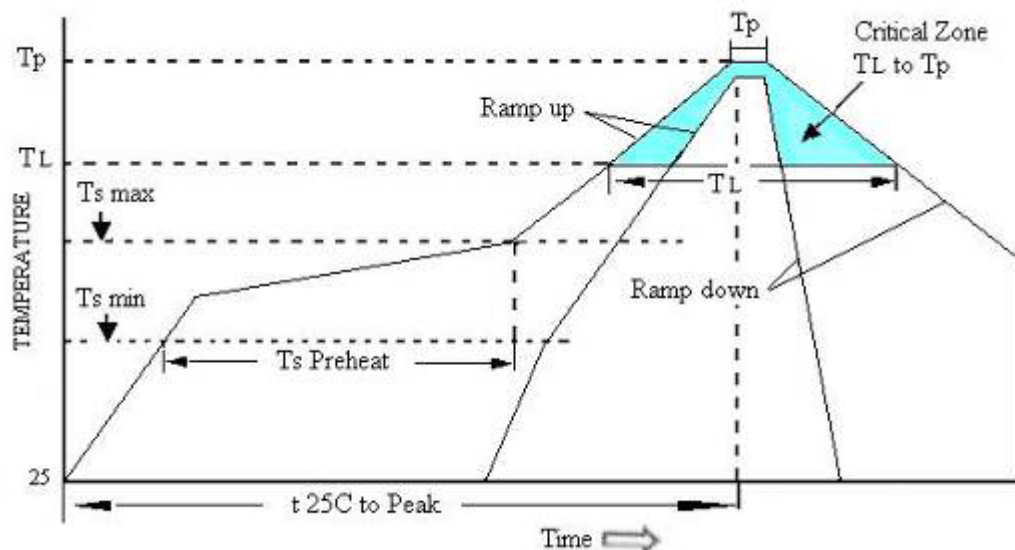
10. Reliability characteristic:

	Item	Condition	Specifications												
10.1	Solderability	Solder bath temperature:260°C , dwell time:5 seconds, Solder: 100% tin	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°C,Immersion time:10 S Solder bath composition:100% tin	$\Delta F_{\leq} \pm 5 \text{ppm}$												
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)	$\Delta F_{\leq} \pm 5 \text{ppm}$												
10.4	Drop test	Drop from 75cm height on 3cm hard wooden board for 6 times	$\Delta F_{\leq} \pm 5 \text{ppm}$												
10.5	Cold Storage	The quartz crystal unit shall be stored at a temperature of -40+/-3°C for 1000 h.then it shall be subjected to standard atmospheric conditions for 1h after which measurement shall be made.	$\Delta F_{\leq} \pm 5 \text{ppm}$												
10.6	High temperature high humidity storage (steady state)	The quartz crystal unit shall be stored at a temperature of 40+/-2°C with relative humidity of 95% for 1000h, then it shall be subjected to standard atmospheric conditions for 2h after which measurement shall be made.	$\Delta F_{\leq} \pm 5 \text{ppm}$												
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 border="1" data-bbox="475 1464 1070 1641"> <thead> <tr> <th></th> <th>Temperature</th> <th>Duration</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40+/-3°C</td> <td>15minutes</td> </tr> <tr> <td>2.</td> <td>100+/-2°C</td> <td>15minutes</td> </tr> <tr> <td>3.</td> <td>Transition time</td> <td>Within 10 seconds</td> </tr> </tbody> </table>		Temperature	Duration	1	-40+/-3°C	15minutes	2.	100+/-2°C	15minutes	3.	Transition time	Within 10 seconds	$\Delta F_{\leq} \pm 5 \text{ppm}$
	Temperature	Duration													
1	-40+/-3°C	15minutes													
2.	100+/-2°C	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.	Leakage rate \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 85+/-3°C for 720h ,then it shall be subjected to standard atmospheric condition for 1h after which measurement shall be made.	$\Delta F_{\leq} \pm 5 \text{ppm}$												

11. All products meet below standards:



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°C/second max
Preheat	
Temperature Min($T_s\ Min$)	150°C
Temperature Typical($T_s\ Typ$)	175°C
Temperature Max.($T_s\ Max$)	200°C
Time(t_s)	60-180 seconds
Ram-up Rate(T_L to T_p)	3°C/second Max
Time Maintained Above:	
--Temperature(T_L)	217°C
--Time(T_L)	60-150seconds
Peak Temperature (T_p)	260°C Max for 10 seconds
Time within 5°C of actual peak(t_p)	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