M49SMD 12.000MHZ 18PF±20PPM QUARTZ CRYSTAL

Parameters of the product 产品参数性能

Parameters	
1. Nominal Frequency(FR)	12.000MHZ
2. Oscillation Mode	■Fundamental 3RD overtone ☐5th overtone
3. Frequency stability(Tol)	±20ppm(ref. at 25℃)
4. Operation Temperature	-20℃to+70℃
5. Storage Temperature	-40℃to+85℃
6. Temperature Charateristic	±30ppm
7. Load Capacitance(CL)	18pF
8. Series Resisitance(ESR)	≤40Ω
9. Drive Level	100uW
10. Shunt Capacitancnce (Co)	≤5pF Max (Or PF~ PF)
11. Aging Rate Per Year	±3ppm/year
12. Insulation Resistance	500MΩ min.at DC 100V±10V
13. Test Circuit.	**Measured by S&A 250B**
14. Marking	**LGE12.000M**

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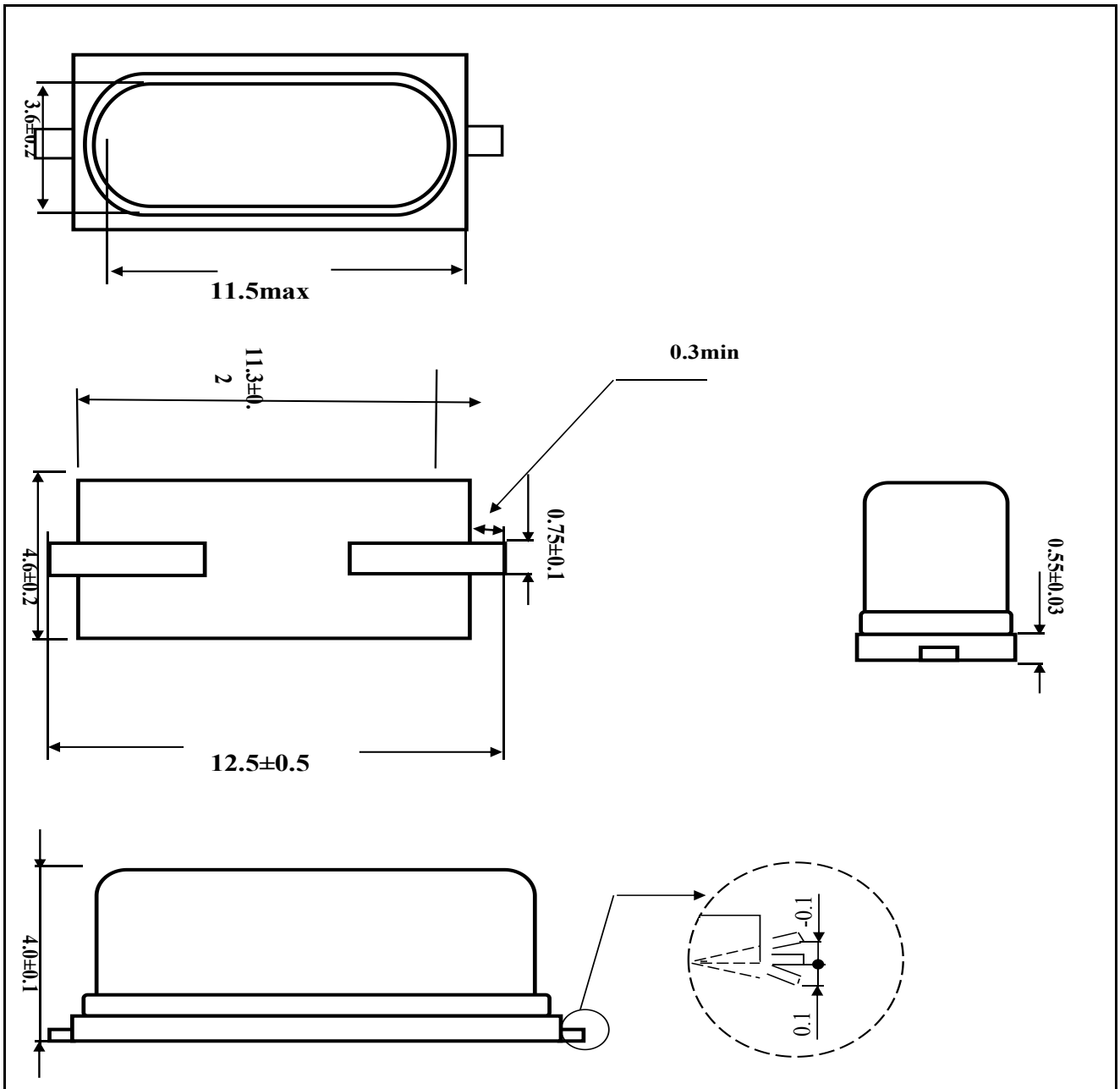

FREQUENCY SPEC	HOLDER TYPE	HC-49US/ SMD	ENGINEER	APPROVED
	DIMENSION	mm		
	SCALE	5:1		

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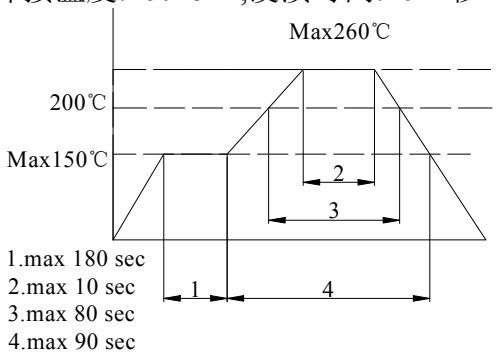
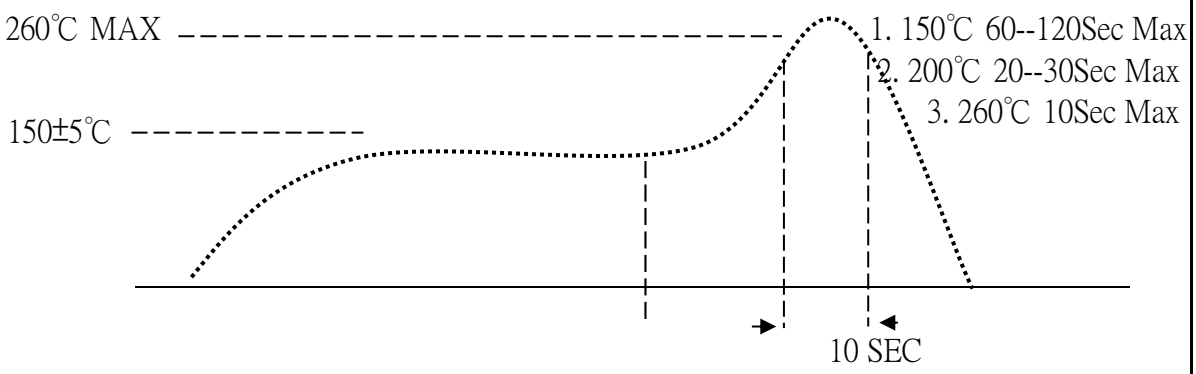
序号	RELIABILITY 试验名称	JTC RELIABILITY CONDITIONS 可靠度试验条件	SPECIFICATION 规格说明
1	ELECTRODE TERMINAL PULL 电极端子拉力	1KG FORCE IN AXES OF ELECTRODE TERMINATION 10±1sec 1KG力垂直施于电极端子上10±1秒	1.GLASS HERMETICI-TY & VISUAL. 玻璃密封性和外观检视
2	ELECTRODE WIRE-LEAD BEND 电极端子弯曲拉力	2.5mm FROM ELECTRODE TERMINAL,BEND 90°, 0.45kg MASS APPLIED 3TIMES. 2.5毫米处电极端子弯曲 90°	2. LEAD CRACKED or BROKEN NOT ALLOWED' 不允许引线断裂或破裂
3	SOLDERABILITY 产品可焊性	SOLDER:235±5℃,DIPPING:5±0.5sec. 焊接温度:235±5℃,浸渍时间:5±0.5秒	AT LEAST 95% COATING. 至少覆盖率为95%
4	RESISTANCE TO 产品可焊耐热时间	SOLDER:260+5℃,DIPPING:10±1sec. 焊接温度:260±5℃,浸渍时间:10±1秒 	1.AT LEAST 95% COATING. 至少覆盖率为95% 2.△F/F≤±5ppm △F/Rr≤±10% or 2Ω BETTER,20%
5	VIBRATION TEST 振动测试	10g,10～55～10hz 1MINUTE,X、Y、Z PLANE EACH 2hrs. 10G, 10～55～10赫兹 1分钟,X、Y、Z 水平面,每 2小时	△F/F≤±5ppm △F/Rr≤±10% or 2Ω BETTER,20%
6	DROP TEST 跌落测试	75CM HIGH,3 TIMES ON HARD BOARD 75厘米高，3次坠落在硬木质板上	△F/F≤±5ppm △F/Rr≤±10% Oor 2Ω BETTER,20%
7	AGING TEST 老化测试	85℃ Dynamic 1000hrs 85℃ 动态测试1000小时	△F/F≤±5ppm △F/Rr≤±10% or 2Ω BETTER,20%
8	CCELERATED AGING 加速老化测试	125℃±3℃, TIME:168 hrs. Dynamic 125℃±3℃, 的动态下:168小时.	△F/F≤±5ppm △F/Rr≤±10% or 2Ω BETTER,20%

9	SALT SPRAY 盐水喷雾试验	5% NaCL 35℃±2℃ CHAMBER,48hrs.PH:6.5~7.2	1.NO CORROSION ON LEAD&CAN1. 基座和外壳无腐蚀
		5% NaCL(碳酸钠),35℃±2℃的温箱里,48小时 PH值:6.5～7.2	△F/F≤±5ppm
			△F/Rr≤±10% or 2Ω BETTER,20%
10	HIGH-LOW TEM.STORAGE(STATIC	HIGH TEM:125℃±2℃,1000hrs LOW TEM:-40℃±3℃,1000hrs 高温:125℃±2℃,1000小时	△F/F≤±5ppm
	STORAGE(STATIC) 高低温储存（静态测试）	LOW TEM:-40℃±3℃,1000hrs 低温:-40℃±3℃,1000小时	△F/Rr≤±10% or 2Ω BETTER,20%
11	HIGH TEM. & HUM. STORAGE TEST 高温高湿储存试验	TEM:40℃±2℃ HUM:83%-88%,96hrs 温度:40℃±2 湿度:83%-88% ,储存96小时	△F/F≤±5ppm
			△F/Rr≤±10% or 2Ω BETTER,20%
12	TEM. & HUM. CYCLING TEST	TEM:-10℃±2℃～65℃±2℃ 24hrs 1 cycle' HUM:93±3% 5 cycles	△F/F≤±5ppm
	温湿度循环测试	温度:-10℃±2℃～65℃±2℃,湿度:93±3%, 24小时为1循环, 运行5个循环	△F/Rr≤±10% or 2Ω BETTER,20%
13	HIGH-LOW TEM.OPERATING TEST	HIGH TEM:70℃±2℃,2hrs LOW TEM:-20℃±2℃,2hrs 高温:70℃±2 ℃,运行2小时	△F/F≤±5ppm
	OPERATING TEST 高-低温运行测试	LOW TEM:-20℃±2℃,2hrs 低温:-20℃±2℃运行2小时	△F/Rr≤±10% or 2Ω BETTER,20%
14	FREQUENCY/Rr V.S OPERATING TEM.	TEM:-10℃～+60℃、-20℃～+70℃、 0℃～70℃ 'MEASURE POINT: EVERY 10℃ DEVIATION.	AS SPECIFICATION
	频率/电阻在操作温度下之变化测试	温度:-10℃～+60℃、-20℃～+70℃ 0℃～70℃测试点:依每10℃测试一值	依客户要求
15	HIGH LOW SHOCK 高低温冲击		



SPECIFICATION

规格说明： △F/F≤±5ppm
△F/Rr≤±10% or 2Ω BETTER,20%