



PRODUCT SPECIFICATION

Product Name: SMD Buzzer

Part Number: SM13ES10AV5TS

Document No: _____

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DRAWING BY	CHECKED BY	APPROVED BY
CHEN YUAN	YUE QIN	JIN LI



MANORSHI ELECTRONICS CO.,LTD

1.ELECTRICAL AND ACOUSTICAL SPECIFICATION

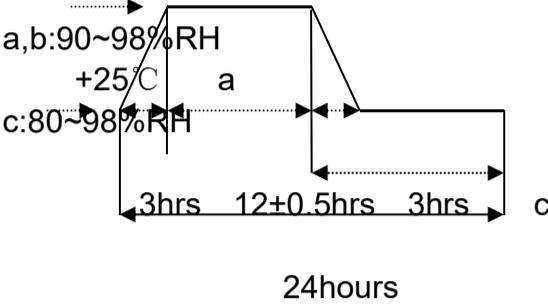
NO.	Item	Unit	Specification	Condition
1	Rated Voltage	VDC	5.0	
2	Operating Volt	VDC	4 - 7	
3	Mean Current	mA	Max.30	Applying rated voltage direct current
5	Sound Output	dBA	85/10cm	Distance at 10cm(A-weight free air), Applying rated voltage direct current
6	Rated Frequency	Hz	2400	
7	Operating Temp	°C	-20+70	
8	Storage Temp	°C	-30+80	
9	Dimension	mm	L12.8×W12.8× H10.0	See attached drawing.
10	Weight	gram	2.8	
11	Material		PPS(Gray)	
12	Terminal		Pin type	See attached drawing
13	Storage life	month	3	3 months preservation at room temp(25±3°C),Humidity40%
14	Environmental Protection Regulation		RoHS	Internal PCB solder joints contain exempt high temperature lead Tin

Test condition: TEMP=+25±2 °C Related humidity=65±5% Air pressure:860-1060mbar

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2.ENVIRONMENT TEST

No	Item	Test condition	Evaluation standard
1	High temp. test	After being placed in a chamber at +80°C for 96	After the test the part shall meet specifications without any degradation in appearance and performance except SPL. after 4 hours at +25°C, The SPL shall be in ±10dBA compared with initial one.
2	Low temp. test	After being placed in a chamber at -40°C for 96	
3	Thermal shock	The part shall be subjected to 10 cycles. One cycle shall consist of; +80°C -40°C 30 min 30 min 60 min	

4	Temp./Humidity Cycle	<p>The part shall be subjected to 10 cycle shall be 24 hours and consist of;</p> <p style="text-align: center;">:</p> <p style="text-align: center;">+80°C</p>  <p style="text-align: center;">b</p> <p style="text-align: center;">c</p> <p style="text-align: center;">24hours</p>
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3.RELIABILITY TEST

No.	Item	Test condition	Evaluation standard
1	Operating life test	1. Ordinary temperature The part shall be subjected to 96 hours at room temperature 2. High temperature The part shall be subjected to 72 hours at +70°C with 5.0V 2400Hz applied. 3. Low temperature The part shall be subjected to 72 hours at -30°C with 5.0V 2400Hz applied.	After the test the part shall meet specifications without any degradation in appearance and performance except SPL. after 4 hours at +25°C, The SPL should be in ±10dBA compared with initial one.

TEST CONDITION.

Standard Test Condition : a)Temperature: +5~+35°C b)Humidity:45~85% c)Pressure: 860~1060mbar

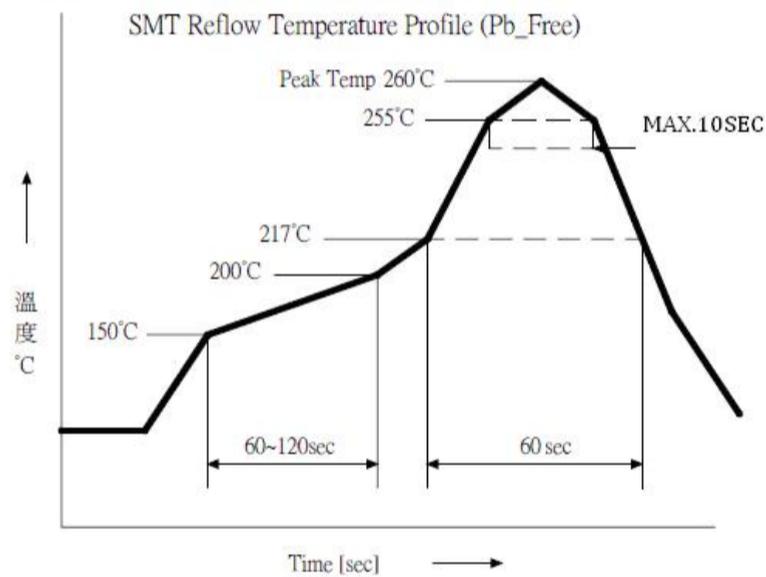
Judgement Test Condition: a)Temperature:+25±2°C b)Humidity:60~70% c)Pressure: 860~1060mbar

4.MECHANICAL CHARACTERISTICS

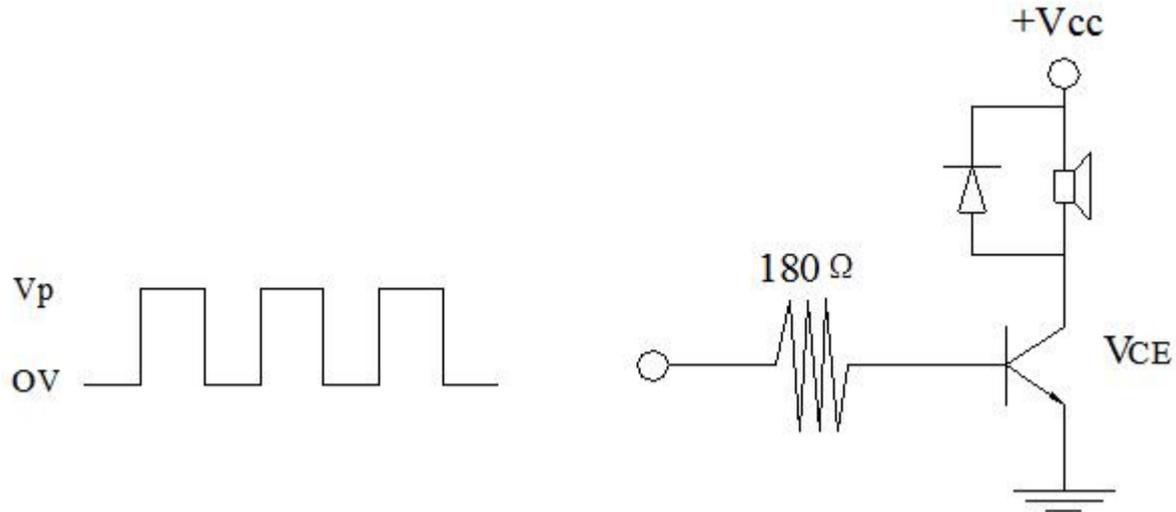
No	Item	Test condition	Evaluation standard
1	Solder ability	Lead terminal are immersed in rosin for 5seconds and then immersed in Solder bath of +250±5°C for 3±0.5 second	90% min.lead terminals shall be wet with solder No interference in

2	Soldering Heat Resistance	Lead terminal are immersed in soldering bath of $+250\pm 5^{\circ}\text{C}$ for 2 ± 0.5 Second.	operation
3	Terminal Mechanical Strength	Apply the terminal with 1KG strength for 1 minute	No damage and cutting off
4	Vibration	The part shall be subjected to a vibration cycle of 10Hz to 55Hz to 10Hz in a period of 1 minute. Total peak amplitude shall be 1.52mm(9.3G).The vibration test shall consist of 2 hours per axis in each three axes(X,Y,Z), Total 6 hours.	After the test the part shall meet specifications without any damage in appearance and performance except SPL.SPL should be in $\pm 10\text{dBA}$ compared with initial one.
5	Drop test	The part only shall be dropped from a height of 75cm onto a 40mm thick wooden board 3 times in 3 axes(X,Y,Z),(a total of 9 times).	

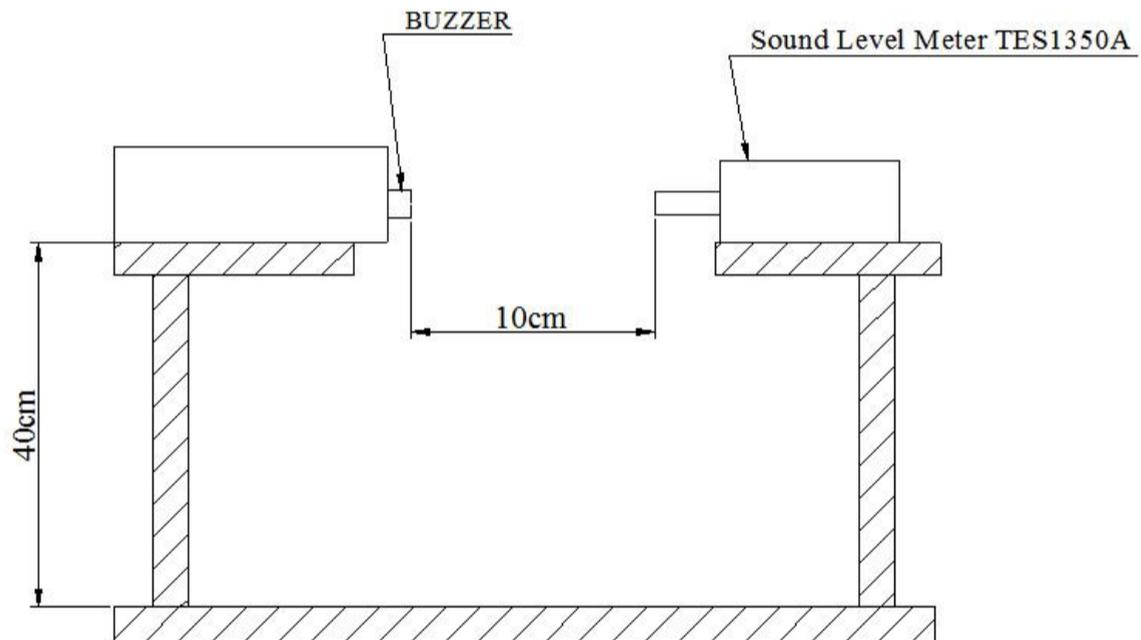
Recommended Temperature Profile For Reflow Oven 建議迴焊爐溫度曲線



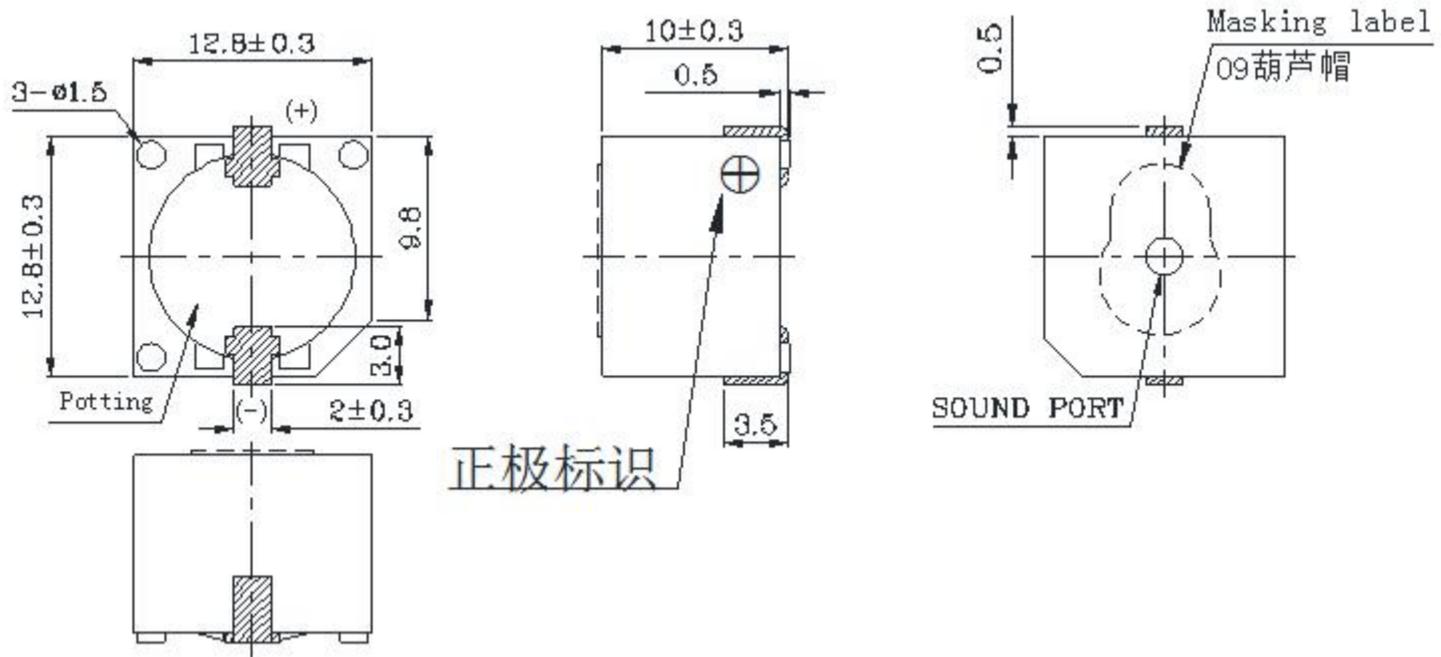
5. TESTING METHOD



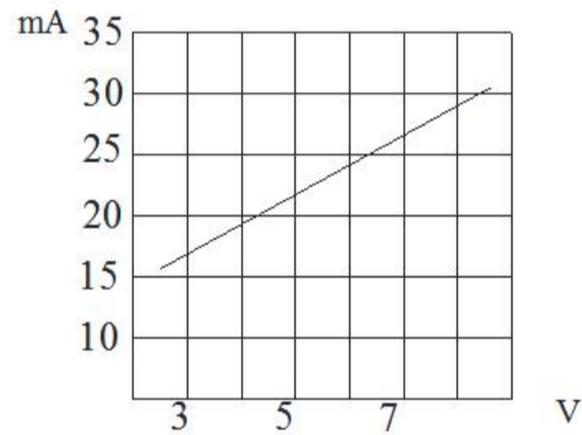
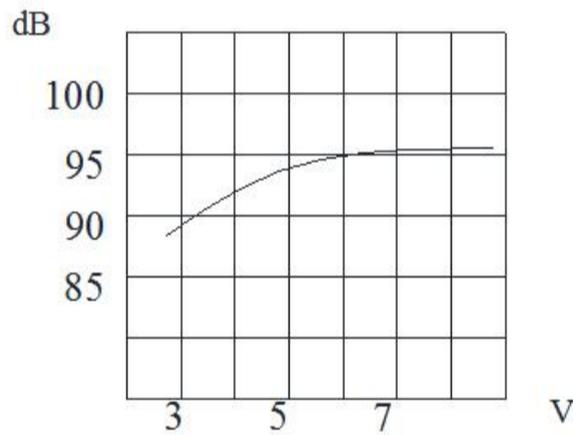
6.INSPECTION FIXTURE



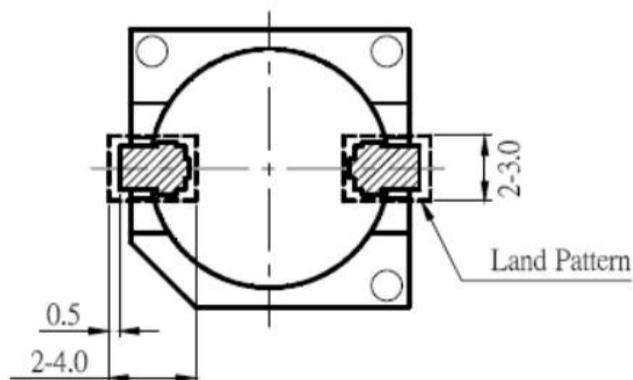
7.DIMENSION



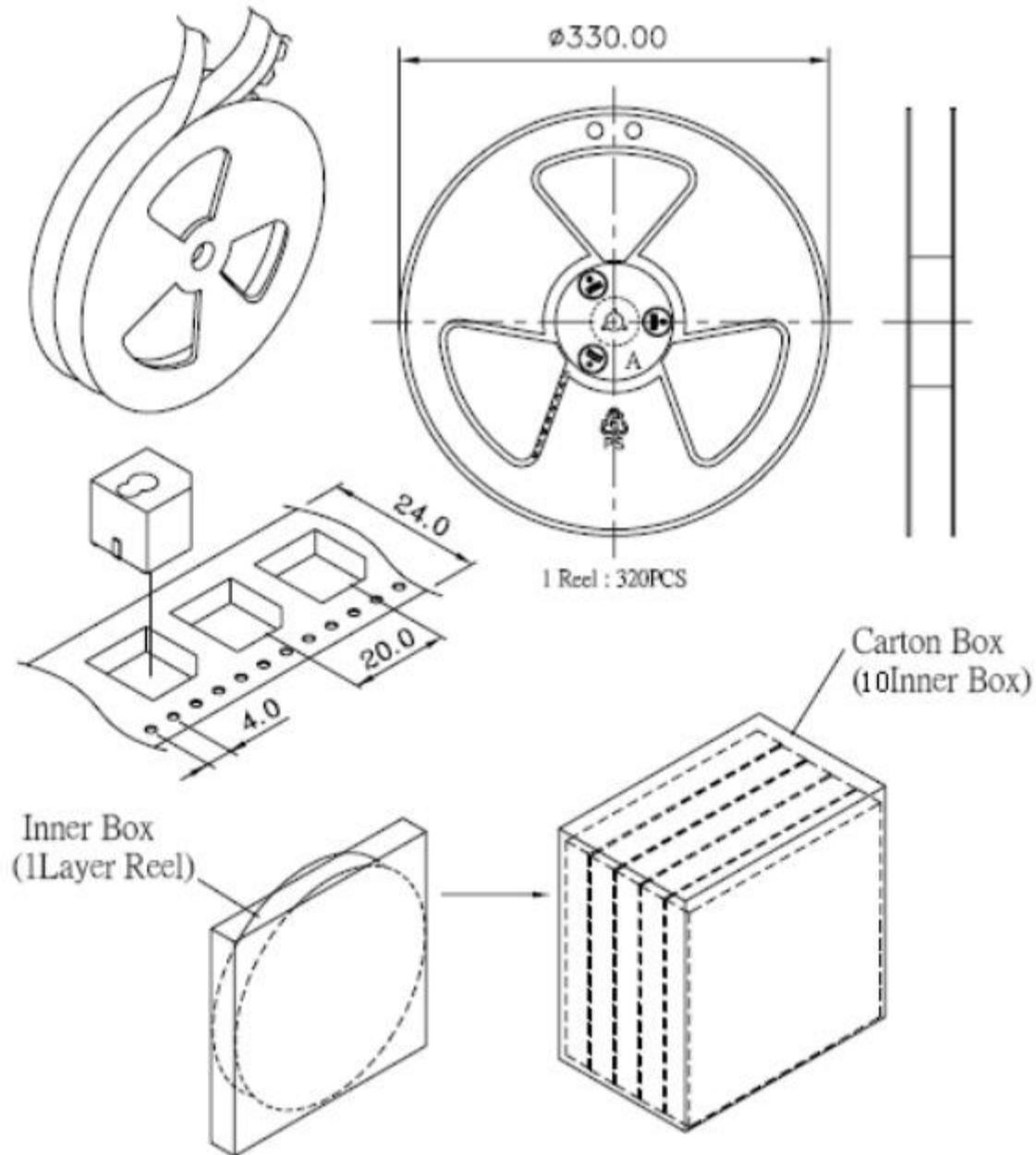
Tolerance: ± 0.5 Unit:mm



Recommendable Land Pattern



8.PACKING



Inner Box	340mmx340mmx40mm	1x320PCS=320PCS
Carton Box	360mmx360mmx420mm	10x320PCS=3,200PCS