

# 请承认书

Version No.: <u>V2.0</u>

常州昊翔电子有限公司	
Changzhou HaoXiang Electronic Co., LTD	
客户名称	
CUSTOMER NAMER :	
产品名称	
COMMODITY : SMD PIEZO BUZZER	
产品型号	
MODEL NO : TDA-M20220	
客户料号	
PART NO :	
审核 <b>秦皓</b> 主办 唐彻雅 Oct.19,2018	3
客户承认栏	
承认担收	
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常州  昊  翔  电  子  有  限  公  司	

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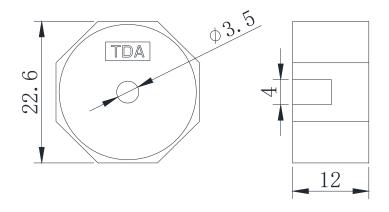
# A. SCOPE

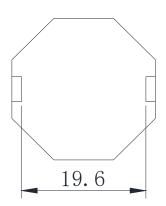
This specification applies piezo buzzer, TDA-M20220

### **B. SPECIFICATION**

No.	Item	Unit	Specification	Condition	
1	Oscillation Frequency	Hz	2000	square wave	
2	Operating Voltage	Vp-p	30max		
3	Current Consumption	mA	MAX. 3	at 5Vp-p	
4	Sound Pressure Level	dB	MIN. 80	at 10cm, 5Vp-p, 2000Hz	
5	Operating Temperature	$^{\circ}\!\mathbb{C}$	-30 ~ +120		
6	Storage Temperature	$^{\circ}\!\mathbb{C}$	-40 ~ +120		
7	Dimension	mm	22.6xH12	See appearance drawing	
8	8 Weight (MAX)		3.5		
9	Housing Material		LCP		
10	Leading Pin		Tin Plated Brass(Sn)	See appearance drawing	
11	Environmental Protection Regulation		RoHS		

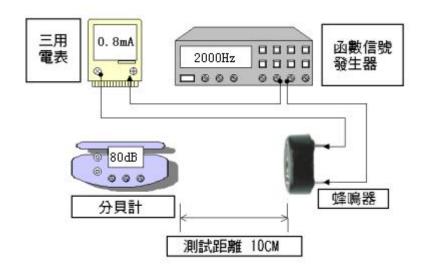
# **C. APPEARANCE DRAWING**



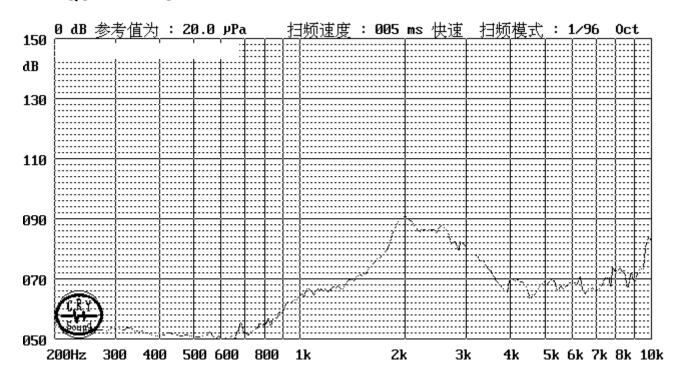


Unit:mm Tolerance :  $\pm$ 0.5mm

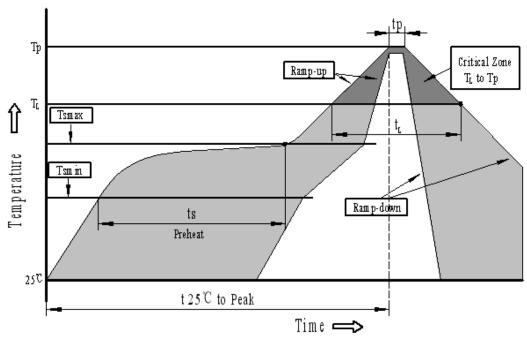
### D. RECOMMEND DIRVING CIRCUIT



### **E.FREQUENCY CURVE**



# F.RECOMMENDED TEMP. PROFILE FOR REFLOW OVEN



Profile Feature	Pb-Free Assembly
Average ramp-up rate(T <sub>L</sub> to Tp)	3°C/second max.
Preheat	
-Temperature Min.(Ts <sub>min</sub> )	150℃
-Temperature Min.(Ts <sub>max</sub> )	200℃
-Temperature Min.(ts)	60∼180 seconds
Ts <sub>max</sub> to T <sub>L</sub>	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
- Temperature(T∟)	217℃
-Time( $T_L$ )	$60{\sim}150$ seconds
Peak temperature(Tp)	245℃+0/-5℃
Time within 5℃of actual Peak temperature (tp)	6 seconds max.
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

### **G. RELIABLY TEST**

NO.	ITEM	TESTING CONDITION	VARIANCE AFTER TEST
1	High temp.	The part shall be capable of withstanding a storage	
	storage life Low temp.	temperature is +120°C for 96 hours  The part shall be capable of withstanding a storage	
2	storage life	temperature is -40°C for 96hours	Being placed for 4
3	Temp. Cycle	The part shall be subjected to 5 cycles. One cycle shall be consist of:  120°C  20°C  20°C  20°C  3hours	hours at 25°C, buzzer shall be measured. The value of oscillation frequency and current consumption should be in ±10% compared with initial one. The SPL should be in ±10dB compared with initial one.
4	Humidity Test	40±2℃, 90∼95% RH, 96hours	
5	Vibration Test	The part shall be subjected to a vibration cycle is 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 plane in each three mutually perpendicular planes for a total time of 6 hours.	The value of oscillation frequency and current consumption
6	Shock	Sounder shall be measured after being applied shock (980m/s²) for each three mutually perpendicular directions to each of 3 times by half sine wave.	should be in±10%compared with initial ones.
7	Drop Test	Dropped naturally from 700mm height onto the surface of 10mm thick wooden board. 2 directions-upper and side of the part are to be applied.	The SPL should be in ±10dB compared with initial one.
8	Lead pull	The part shall be pushed with a force of 9.8N for 10±1 seconds behind the part.	After the test part shall meet specifications without any degradation in appearance and performance.
9	Recommende d temp. Profile for Reflow Oven	Shown in Fig.1	

**Warranty**: For a period of one year from date of manufacture under normal operations.

### **TEST CONDITION**

**Standard Test Condition :** a) Temperature :  $+5 \sim +35 \,^{\circ}\text{C}$  b) Humidity : 45-85% c) Pressure : 860-1060mbar **Judgment Test Condition:** a) Temperature :  $+25\pm2\,^{\circ}\text{C}$  b) Humidity : 60-70% c) Pressure : 860-1060mbar

### H. NOTE CAUTIONS

- **a.** Can not be applied DC bias voltage and a sounding body or pronunciation elements, otherwise its insulation resistance will decrease and the use of performance degradation.
- b. Can not be imposed over pronunciation body or pronunciation components allows the use of voltage range of the voltage on the.
- C. Please pay attention in welding process, don't let soldering flux invasion into the sound chamber, otherwise flux can cause defect conduction.
- **d**. Use should handle with care, avoiding direct pressure contact, or inadvertently falling down, to prevent the occurrence of fault, or the generation characteristics of abnormal movements.

#### I. NOTICE ON PRODUCT STORAGE

**a**. Please store the products in room where the temperature / humidity is stable. And avoid such places where there are large temperature changes. Please store the products under the following conditions :

Temperature: -10 to +40 (degree C)

Humidity: 15 to 85% R.H.

- **b**. Expire date (Shelf life) of the products is 6 months after delivery under the conditions of a sealed and an unopened package. Please use the products within 6 months after delivery. If you store the products for a long time (more than 6months), use carefully because the products may be degraded in the solder-ability and/or rusty. Please confirm solder-ability and characteristics for the products regularly.
- C. Please use the products immediately after the package is opened, because the characteristics may be reduced in quality, and/or be degraded in the solder-ability due to storage under the poor condition.

#### J. REVISION

No.	DATE	DESCRIPTION	REMARK	VERSION
1	Oct.19,2018	Initial condition	TDA-M20220	V2.0
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