*FCT

SPECIFICATION

Version No.: <u>V2.3</u>

| 常州 | 昊 翔 电 | 子 有 限 | 公 司 |
|----------|------------|---------------|-----------------|
| Changzho | u HaoXiang | Electronic | Co., LTD |
| 客户名 | 分 称 | | |
| CUSTOME | R NAMER : | | |
| 产品名 | 分 称 | | |
| COMMODI | : | SMD Speake | er |
| 产品型 | 显号 | · | |
| MODEL NO | · <u> </u> | TDA-M1515KC8D | 40 |
| 客户彩 | 十号 | | |
| PART NO | : | | |
| | | · | |
| 审 核 | 秦皓 | 主办 | 唐俐雅 Mar.20,2019 |
| | | | |

| | 客 | 户 | 承 | 认 | 栏 | |
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| 承 | 认 | | | | 拒 | 收 |
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| 常 | 州 | 昊 | 翔 | 电 | 子 | 有 | 限 | 公 | 司 |
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| 常 | 州 | 声 | 翔 | 电 | 子 | 有 | 限 | 公 | 司 |

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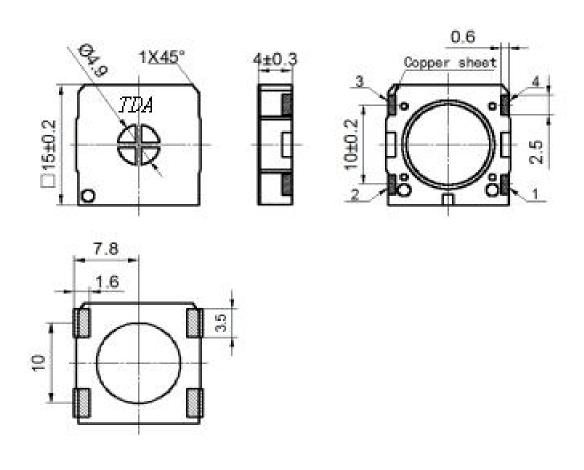
A. MODEL: TDA-M1515KC8D40

B. SPECIFICATION

| Test condition: | Temperature: 15~35°C | Related Humidity:25~75% | (GB/T9396-1996) |
|-----------------|----------------------|-------------------------|-----------------|
| | | | |

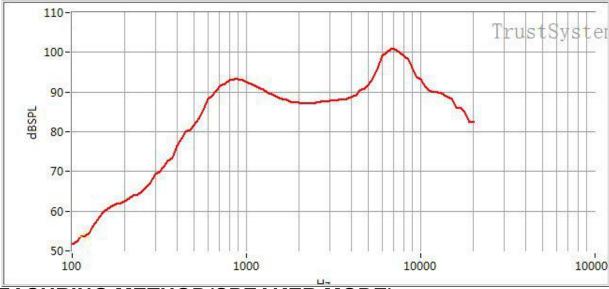
| No. | Item | Specification | Condition |
|-----|-----------------------------|---|----------------------------------|
| 1 | Dimension | 15 x 15 x H4.0mm | |
| 2 | Weight (MAX) | 1.5g | |
| 3 | Impedance | 8±20%Ω | At 0.1M,0.5W |
| 4 | Output Sound Pressure Level | 89±3dB(0.1M,0.5W) | Average at1k, 1.6k, 2.0k, 3.2kHz |
| 5 | Response Frequency | 800±15%Hz | |
| 6 | Frequency Range | F0∼6KHz | |
| 7 | Power Rating | Normal: 0.5Watts Maximum: 0.8 Watts | Sine Wave |
| 8 | Operating temperature | -40 ~ +100℃ | |
| 9 | Storage Temperature | -40 ~ +105℃ | |
| 10 | Abnormal Sound test | should not be audible at 2.37V sine wave between 300-6000Hz | Sine Wave |
| 11 | RoHS | The Speaker is RoHS compliant. | |

C. APPEARANCE DRAWING



Unit: mm Tolerance: ± 0.5mm

D.FREQUENCY RESPONSE



E. MEASURING METHOD(SPEAKER MODE)

E-1.Test Condition

(a)STANDARD:

Temperature : $17 \sim 25^{\circ}$ °C, Relative humidity : $45\% \sim 80\%$,

Atmospheric pressure: 860mbar to 1060mbar

(b)JUDGEMENT:

Temperature : $20\pm3^{\circ}$ °C, Relative humidity : $60\% \sim 70\%$,

Atmospheric pressure: 860mbar to 1060mbar

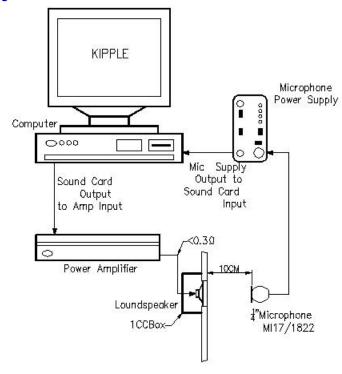
E-2.Standard Test Fixture

1.Input Power :0.5W(2.37 V)

2.Zero Level: -dB 3.Mode:SPEAKER

4.potentiometer Range: 50dB

5.Sweep Time: 0.5sec

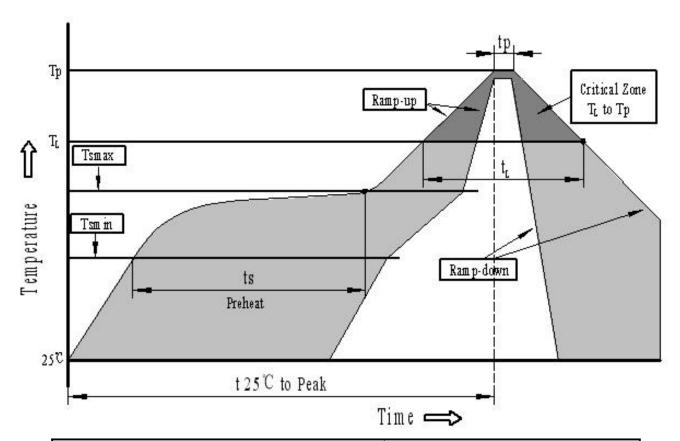


F.RELIABILTY TEST

| No. | Item | Condition | Evaluation standard | |
|-----|--|---|--|--|
| 1 | High temp. storage life | The part shall be capable of Withstanding a storage temperature is +105 $^{\circ}\!$ | | |
| 2 | Low temp storage life | The part shall be capable of Withstanding a storage temperature is -40 $^{\circ}\!$ | | |
| 3 | Temp. Cycle | Total 5 cycles 1 cycle consisting of -40 $\pm 2^{\circ}$ C, 30 minutes 20 $\pm 5^{\circ}$ C 15 minutes 105 $\pm 2^{\circ}$ C 30 minutes 20 $\pm 5^{\circ}$ C 15 minutes | | |
| 4 | Humidity Test | 40±2℃,90~95%RH,120hours | All specifications must be | |
| 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 | satisfied after the test. | |
| 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 | | |
| 7 | Drop Test | Dropped naturally from 700mm height onto the surface of 10mm thick wooden board. 2directions-upper and side of the part are to be applied. | | |
| 8 | Lead pull | The part shall be pushed with a force of 9.8N for 10 \pm 1 seconds behind the part. | After the test part shall meet specifications without any degradation in appearance and performance. | |
| 9 | Recommended temp. Profile for Reflow Oven | Shown in Fig.1 | | |

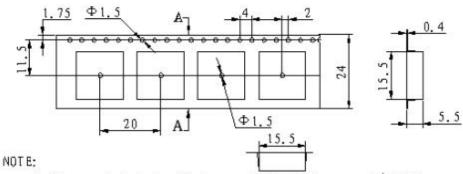
Warranty: For a period of one year from date of manufacture under normal operations.

G. RECOMMENDED TEMP. ROFILE FOR REFLOW OVEN(Fig.1)

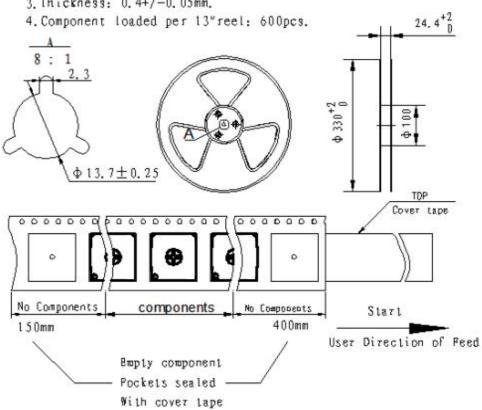


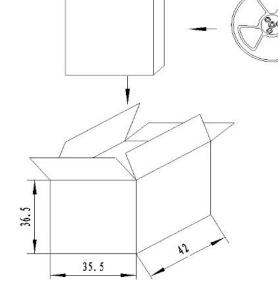
| Profile Feature | Pb-Free Assembly |
|---|---------------------|
| Average ramp-up rate(T _L to Tp) | 3°C/second max. |
| Preheat | |
| -Temperature Min.(Ts _{min}) | 150℃ |
| -Temperature Min.(Ts _{max}) | 200℃ |
| -Temperature Min.(ts) | $60\sim180$ seconds |
| Ts _{max} to T _L | |
| -Ramp-up Rate | 3℃/second max. |
| Time maintained above: | |
| - Temperature(T _L) | 217℃ |
| -Time(T_L) | $60\sim150$ seconds |
| Peak temperature(Tp) | 245°C+0/-5°C |
| Time within 5°C of actual Peak temperature (tp) | 6 seconds max. |
| Ramp-down Rate | 6°C/second max. |
| Time 25°C to Peak Temperature | 8 minutes max. |

H. PACKING STANDARD



- 1.10 sprocket hole pitch cumulative tolerance +/-0.20mm.
- 2. All dimensions meet EIA-481-2-A requirements.
- 3. Thickness: 0.4+/-0.05mm.





NOTE:

- 1.600 PCS per box
- 2. Total 10 boxes per carton
- 3.Total 6000 PCS carton
- 4.Volume: $42 \times 35.5 \times 36.5$ cm

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 | 2017.09.15 | Initial condition | TDA-M1515KC8D40 | V1.0 |
| 2 | Nov.14,2018 | Version upgrade | TDA-M1515KC8D40 | V2.0 |
| 3 | Mar.11,2019 | Update product specifications, drawings and frequency curves | TDA-M1515KC8D40 | V2.1 |
| 4 | Mar.20,2019 | Change operating temperature from "-30°C ~ +85°C" to "-40°C ~ +100°C" | TDA-M1515KC8D40 | V2.2 |
| 5 | Jan.13,2020 | Change the direction of product packing | TDA-M1515KC8D40 | V2.3 |
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