

Approved by:

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**APPROVAL SHEET**

**承认书**

PRODUCT: CERAMIC RESONATOR

MODEL: ZTT4.00MG

3PAD CASE

SHENZHEN HUAJINGDA ELECTRONICSCO.,LTD

深圳市华晶达电子有限公司

**1. SCOPE**

(范围)

This specification is applied to the ceramics resonator used for communication.

(本规格书适用于通讯用陶瓷谐振器。)

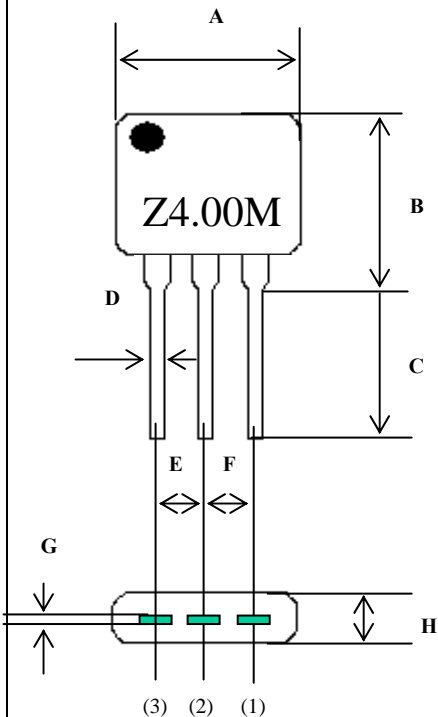
**2. MODEL NAME**

(产品名称)

Part Name (型号)	Customer's Part Number (客户型号)	Drawing No. (图号)
ZTT4.00MG		GG-024

**3. DIMENSIONS**

(尺寸)



UNIT : MM

A	8.0MAX
B	8.0MAX
C	5.0±1.0
D	0.6±0.1
E F	2.5±0.3
G	0.25±0.05
H	4.0MAX

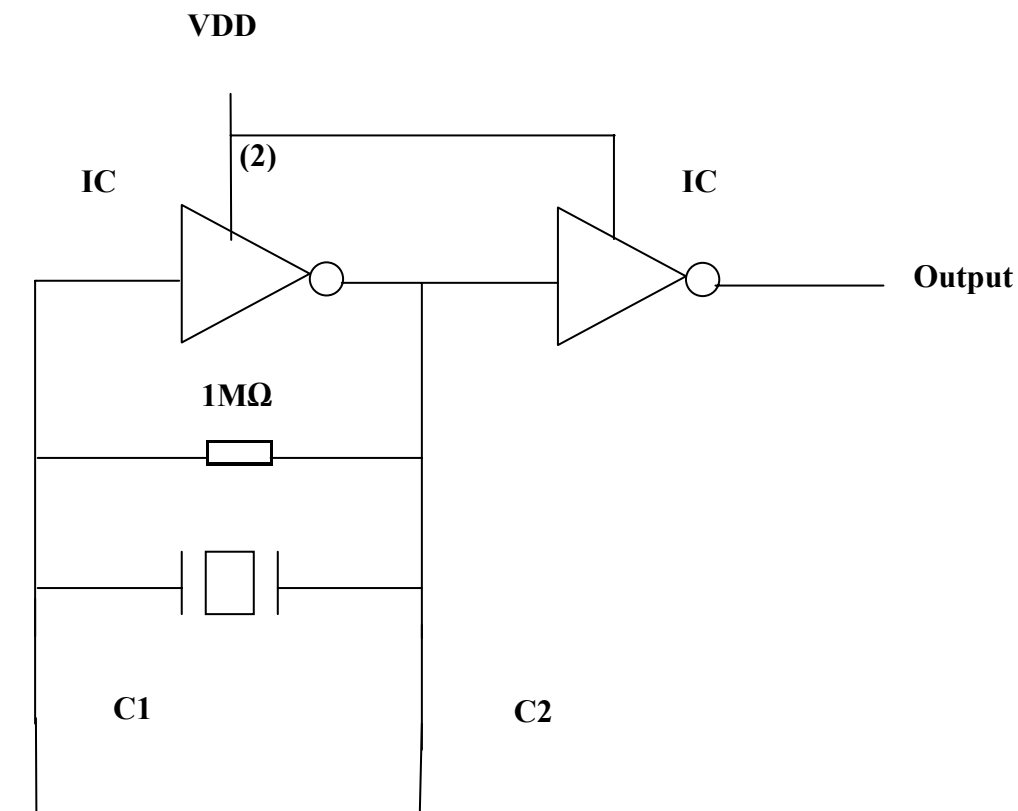
- (1). INPUT
- (2). GROUND
- (3). OUTPUT

**4. TEST CIRCUIT**

(测试电路)

Parts shall be measured under a condition (Temp.: 3~35°C. Hum.: 45~85%) unless any necessity to measure under a standard condition (Temp.: 20 ± 2°C. Humi.: 65 ± 5%) is occurred.

(测量条件为温度 3-35°C，相对湿度 45~85%，必要时标准测量条件为温度 20 ± 2°C，相对湿度 65 ± 5%)

**IC= 1/6CD4069UBE****VDD=+5V**

**5. ELECTRICAL CHARACTERISTICS**

(电气性能)

	<b>Item</b> (项目)	<b>Requirements</b> (要求)
5-1	<b>Center Frequency (fo)</b> (中心频率)	<b>4.00MHZ</b>
5-2	<b>Frequency Accuracy</b> (频率精度)	<b>Fc±0.5% ±0.3%</b>
5-3	<b>Resonator Impedance</b> (谐振阻抗)	<b>50 Ω max</b>
5-4	<b>Build in capacitor</b> (内置电容)	<b>30 PF</b>
5-5	<b>Operating Temperature Range</b> (使用温度)	<b>-20 TO +80 °C</b>
5-6	<b>Storage Temperature Range</b> ( 储存温度)	<b>-30 TO +85 °C</b>
5-7	<b>Withstanding Voltage</b> (耐电压)	<b>DC 100 V</b>
5-8	<b>Temperature Coefficient</b>  <b>Of Center Frequency</b>  (-20~+80°C)	<b>±0.3% max</b>
5-9	<b>Insulation Impedance</b> (绝缘阻抗)	<b>200 MΩ min</b>

**6. PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS**

(物理及环境特性)

	<b>Test Item</b> (试验项目)	<b>Condition of Test</b> (试验条件)	<b>Requirements</b> (要求)
6-1	<b>Lead Strength</b> (引脚强度) <b>Lead Pulling</b> (引脚拉力) <b>Lead Bending</b> (引脚弯曲)	Applied to vertical weight 1Kg along with the direction of lead without any shock for 5-10sec. (沿引线方向加 10 牛顿静载荷 5-10 秒.) Resonator lead shall be subjected to withstand against 90° bending its stem.This operation shall be done toward both diretion. (引脚折弯 90°,反方向同样。)	No mechanical damage and the measured values shall meet Item 5. (无机械损伤, 测量值足第 5 款要求.)
6-2	<b>Solderability</b> (可焊性)	Dip the terminals of the filter no closer than 1.5mm into a soldering bath(230+5°C) for 5+1 sec . (refer to MIL-STD-202E-208C) (端子至少 1.5mm应浸没在(230+5°C)锡池内 5+1 秒。)(端子表面 95%被浸润)	The solder shall be for coat at least 95% of the terminal surface (端子表面 95%被浸润)
6-3	<b>Vibration</b> (振动)	Resonator shall be measured after being applied vibration as below (在下面条件下振动后测试) <b>Vibration Freq:</b> 10-55HZ (振动频率) <b>Amplitude</b> : 1.5 mm (幅度) <b>Directions</b> : 3 axial directions (方向) (3 轴向) <b>Time</b> : 1 hour/each direction (时间) (1 小时/各方向)	No visible damage and the measured value shall meet table 1 (无可见损伤且测量值满足表 1)
6-4	<b>Random Drop</b> (任意跌落)	Resonator shall be measured after 3 times random dropping from the height of 30 cm. concrete floor. (3 次 30 cm 高度跌落到水泥地板后测试)	
6-5	<b>Resistance to Soldering Heat</b> (耐焊接热)	Resonator immersing the terminals up to 1.5 mm to filter's body in soldering bath (350 +10°C) for 3 sec., filter shall be measure after being placed in natural condition for 1 hour. (端子在(350+10°C)锡池内浸没到器件根部 1.5mm,, 时间 3 秒, 自然条件放置 1 小时后测试。)	The measured value shall meet table 1. (测量值满足表 1)

**6. PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS (续上页)**

(物理及环境特性)

	<b>Test Item</b> (试验项目)	<b>Condition of Test</b> (试验条件)	<b>Requirements</b> (要求)
6-7	<b>Humidity</b> (湿度)	After being placed in a chamber (Humi, :90-95% RH Temp.:40 ± 2°C) for 100 hours filter shall be measured after placed in natural condition for 1 hour (相对湿度 90-95% 温度 40 ± 2°C 容器中放置 100 小时, 自然条件放置 1 小时后测试。)	The measured value shall meet Table 1. (测量值应满足表 1)
6-8	<b>Life Test (High temperature)</b> (寿命试验) (高温)	After being placed in a chamber 85±2°C for 100 hours ,filter shall be measured after being placed in natural condition for 1 hour. (温度 85± 2°C 容器中放置 100 小时, 自然条件放置 1 小时后测试。)	
6-9	<b>Life Test (Low temperature)</b> (寿命试验) (低温)	Placed in a chamber (Temp:-55± 2°C) for 100 hours,filter shall be measured placed in natural condition for 1 hour . (温度-55±2°C 容器中放置 100 小时, 自然条件放置 1 小时后测试。)	
6-10	<b>Thermal Shock</b> (温度冲击)	After temperature cycling of -55°C (30 minutes ) to +85°C ( 30 minutes ) was performed 5 times with a transfer time15 min filter shall be measured after being placed in natural condition for 1 hour. (温度-55°C (30 分钟) 至+85°C (30 分钟) 循环 5 次, 15 分钟 1 次, 自然条件放置 1 小时后测试。 )	

**6. PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS (续上页)**

(物理及环境特性)

**Table 1**

(表 1)

<b>Item</b> (项目)	<b>Limit Value</b> (极限值)
※ <b>Center Frequency</b> (中心频率)	<b>± 0.5%</b>

※ **Note: The limits in the above table are referenced to the initial Measurements.** (表中的限值参照初始测量值)

**7. NOTICE**

(注意)

**7.2 Ceramic filter should be stored in storeroom .And the surrouding atmosphere is acidless,alkali-free and no other harmful impurity.**

(器件应贮藏在贮藏室, 周围环境无酸、碱性腐蚀或其它有害气体.)

**7.3 The package for ceramic filter should be avoid the hit by rain and Snow,also the mechanical damage.**

(包装应避免风雪、雨水的侵袭以及机械伤害。)

**7.4 This specification limits the quality of the component as a single unit .Please make sure that the component is evaluated and confirmed the drawing When it is mounted to your product.**

(本规格书只规定了部件本身的质量。应用于您的产品时。请确认图纸该部件是否等效。)