



CHEQUERS ELECTRONIC (CHINA) LIMITED

捷嘉電子(中國)有限公司

CERAMIC RESONATOR SPECIFICATION

PART NO.: ZTTRS8.00MG-TF

<This product is RoHS and REACH compliant>

Part no.	: ZTTRS8.00MG-TF
Printed on	: 1-Aug-13
Prepared	: FRANKIE
Ver. Ctrl.	: JX111010/F
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1. Scope

This specification shall cover the characteristics of the ceramic resonator with ZTTRS8.00MG-TF for clock oscillation circuit such as microprocessors.

2. Part no.: ZTTRS8.00MG-TF

3. Electrical specification

3-1	Nominal oscillating frequency	8.00MHz
3-2	Initial tolerance	±0.30% max.
3-3	Resonant resistance	25Ω max.
3-4	Insulation resistance	5x10 ⁸ Ω min. (at 10V DC)
3-5	Withstanding voltage	DC 100V (5 seconds) max.
3-6	Rating voltage - DC voltage - AC voltage	6V DC 15V p-p
3-7	Temperature stability (-28°C to +85°C) Operating temperature Storage temperature	±0.3% max. (from initial value) -25°C to +85°C -55°C to +85°C
3-8	Aging (for 10 years)	±0.3% max. (from initial value)

4. Physical characteristics

	Test item	Condition of test	Performance requirement
4-1	Random drop	Resonator shall be measured after 3 times of random drops from the height of 1 meter on concrete floor.	No visible damage and the measured values shall meet Table 1.
4-2	Vibration	Resonator shall be measured after being applied with vibration (amplitude: 1.5mm, frequency: 10Hz to 55Hz) to each of the 3 perpendicular directions (X, Y, and Z) for 2 hours.	The measured values shall meet Table 1.
4-3	Resistance to soldering heat	Lead terminals are immersed up to 2mm from the resonator's body in solder bath (260°C±5°C for 10 seconds±1 second). Then the resonator shall be measured after being placed in room temperature for 1 hour.	The measured values shall meet Table 1.
4-4	Solderability	Lead terminals are immersed up to 2mm resonator body in soldering bath of 250°C± 5°C for 3 seconds ± 0.5 second.	Min. 95% of lead terminals' surface shall be covered with solder.
4-5	Terminal strength	After a weight of 0.5kg is applied to each terminal in axial direction for 10 seconds±1 second, the resonator shall be measured. After lead terminals are fixed at 2mm from the resonator's body. They shall be folded up to 90° from their axial direction and folded back to -90°, then folded back to their axial direction. The speed of folding shall be 3 seconds.	No visible damage and the measured values shall meet Table 1. No cutting off shall be visible.

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5. Environmental characteristics

	Test item	Condition of test	Performance requirement
5-1	High temperature	After being placed in a chamber (+85°C±5°C) for 500 hours, the resonator is measured after being placed in room temperature for 1 hour.	The measured values shall meet Table 1.
5-2	Low temperature	After being placed in a chamber (-40°C±2°C) for 500 hours±4 hours, the resonator is measured after being placed in room temperature for 1 hour.	The measured values shall meet Table 1.
5-3	Humidity	After being placed in a chamber with a humidity of 90% to 95% RH and a temperature of +40°C±2°C for 500 hours, the resonator is measured after being placed in room temperature for 1 hour.	The measured values shall meet Table 1.
5-4	Heat shock	After being kept at room temperature, resonator shall be placed at a temperature of -25°C±3°C. After 30 minutes at this temperature, the resonator is immediately placed at a temperature of 85°C±3°C. After another 30 minutes at this temperature, the resonator is placed under -25°C±3°C again. The above processes are counted as 1 cycle. After 5 cycles (with a transfer time of 15 seconds between each cycle), the resonator shall be measured after being placed in room temperature for 1 hour.	The measured values shall meet Table 1.

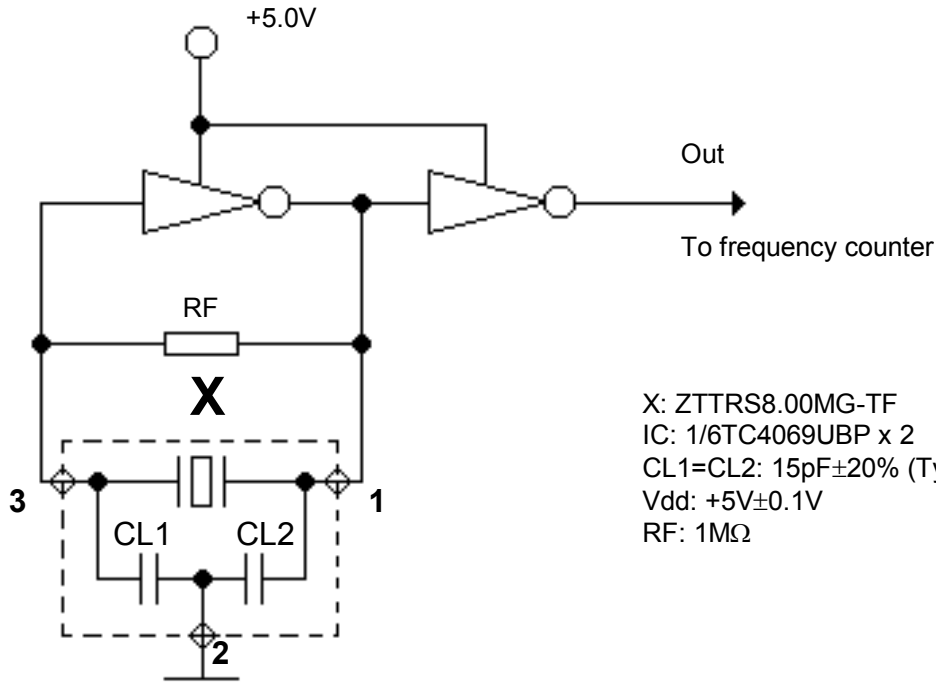
Table 1

Measurements	Requirements*
Oscillating frequency change	± 0.3% max.
Resonant impedance	25Ω max.
* Reference from initial value	

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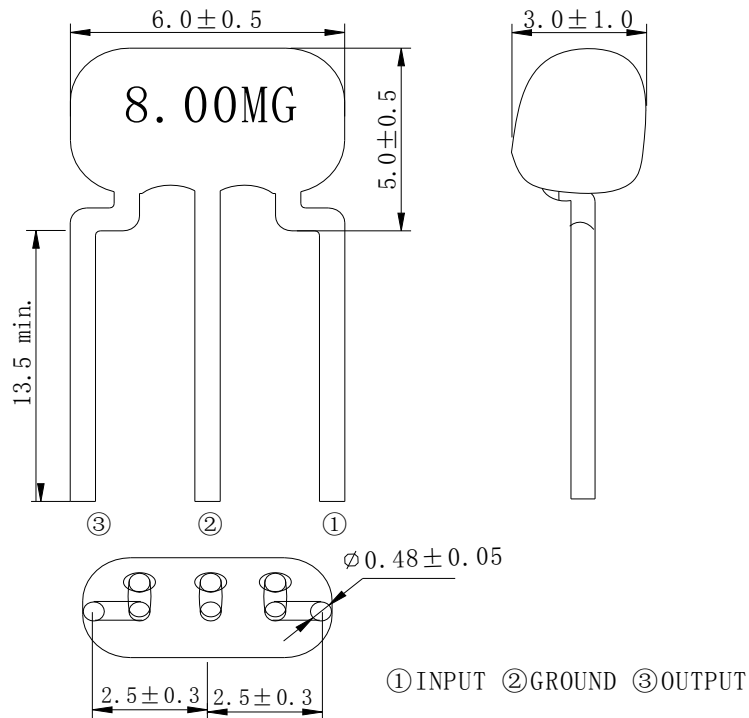
6. Test circuit

- 6-1 Oscillating frequency : See Figure 2.
 6-2 Equivalent circuit constants : Network Analyzer HP87510A or equivalent
 6-3 Measuring condition : Temperature: +5°C to +35°C
 Humidity: 45% to 85% RH
 If require : Temperature: +25°C ± 3°C
 Humidity: 60% ± 10% RH



X: ZTTRS8.00MG-TF
 IC: 1/6TC4069UBP x 2
 CL1=CL2: 15pF±20% (Typical)
 Vdd: +5V±0.1V
 RF: 1MΩ

7. Dimension of ZTTRS8.00MG-TF

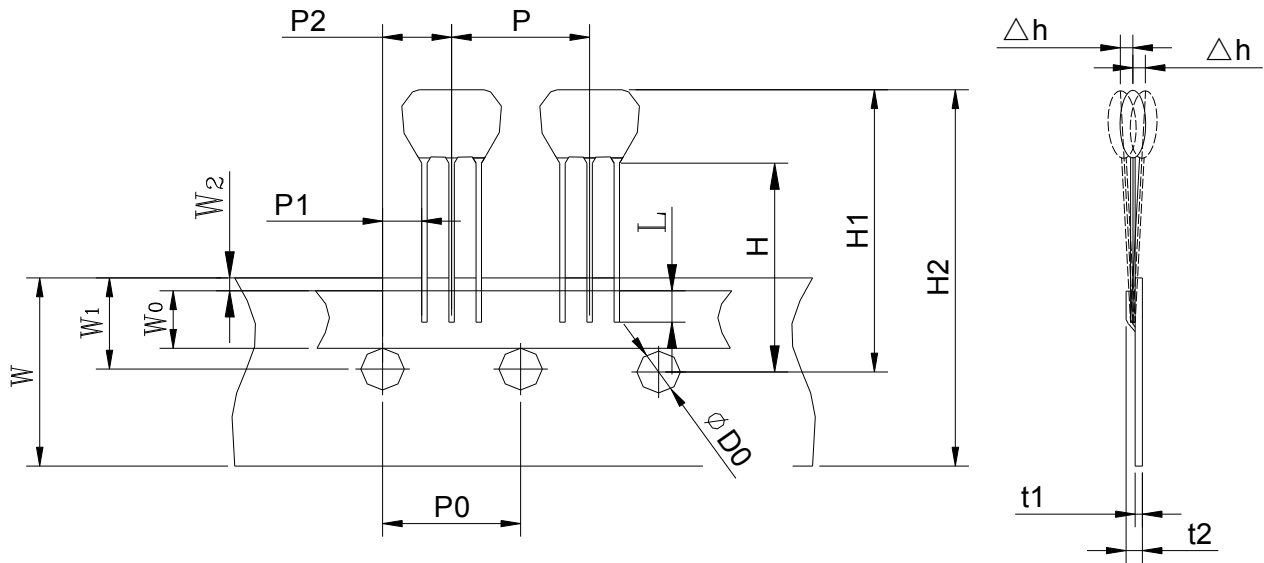


① INPUT ② GROUND ③ OUTPUT

Unit: mm

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8. Information on tape packaging



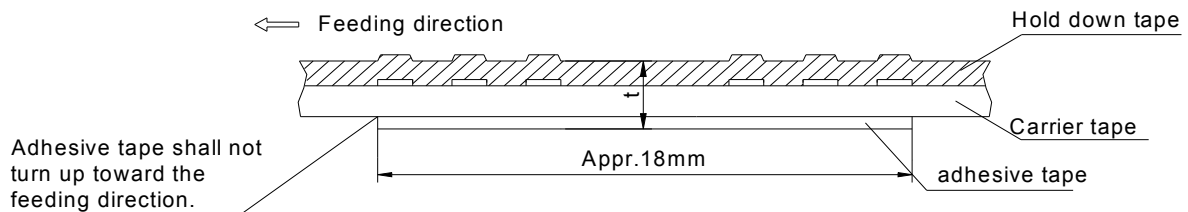
Symbol	Dimension (mm)
P	12.7±0.5
Po	12.7±0.2
P1	3.85±0.5
P2	6.35±1.3(include the slant of product)
W0	5.5±0.5
W1	9.0±0.5
H	18.0 +0.5 -1.0
H1	27.0 Max.
H2	34.0 Max.
ØDo	4.0±0.2
t1	0.6±0.2
t2	1.5 Max.
Δh	1.0 Max.

8.1 Stipulation of products alignment

- Dropout of parts shall be confined to no more than 3 continuous parts.
- Dropout of parts on a reel shall be less than 0.25% of net quantity.
- All products shall face their marking side toward the hold down tape.
(Upward in the figure below in this page)

8.2 Tape Connection

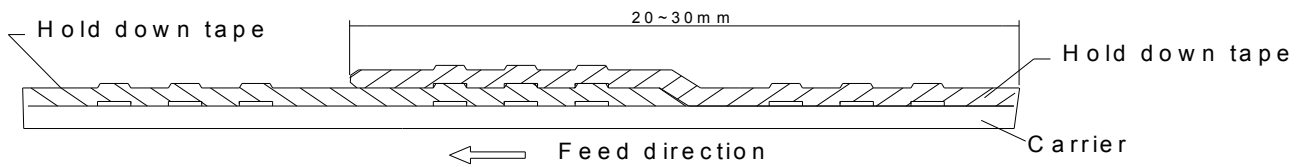
- In the case of a carrier tape running out, connect the back face of tapes together with an adhesive tape. (Total thickness of tape t:1.05mm max.)



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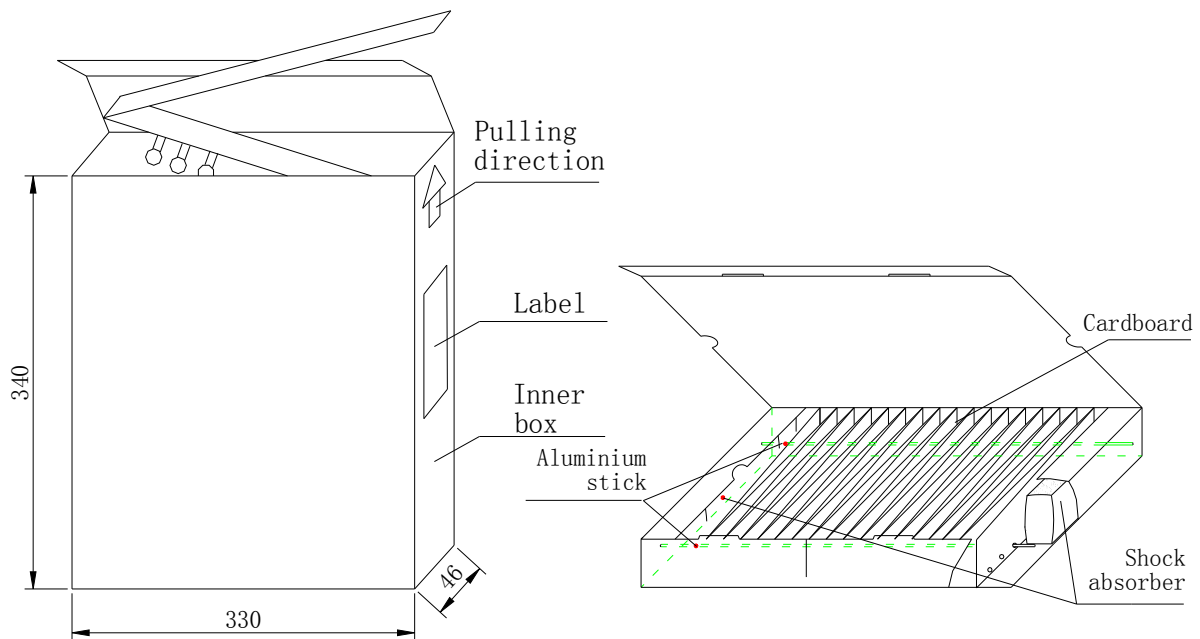
8.2 Tape Connection (continue)

- In the case of a hold down tape running out, overlap the hold down tape for connection.
(Total thickness of tape t:1.05mm max.)



- In the case of both carrier tape and hold down tape running out, connect both carrier tape and hold down tape together with adhesive tape without pulling out the products

9. Information on carton box packaging



Unit: mm

- **Leader tape**
More than 300mm leader tape with no products shall be provided at both end of the tape.
- **Packing style**
Tape is folded at every 25 pitches in zigzag way, and contained in the box. Aluminum sticks are inserted the third hole from both edge of the tape. Those are used to keep steady state. Shock absorber shall be placed between products and box.
- **Packing Quantity**
2000pcs are contained in box.
- **Label**
The minimum packaging unit shall be one box. Each box shall have a label which shows part number, inspection number and the number of contents.

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