CHEQUERS ELECTRONIC (CHINA) LIMITED

捷嘉電子(中國)有限公司

SURFACE-MOUNT (SMD)
CERAMIC RESONATOR SPECIFICATION

PART NO.: ZTTCR8.00MG

<This Product is RoHS and REACH Compliant>

Part no.	:	ZTTCR8.00MG
Printed on	:	4-Dec-09
Prepared	:	Frankie
Ver. Ctrl.	:	120409/F
Page	:	1 of 5

Address : Room 1101-2, Mongkok Commercial Centre, 16 Argyle St.,
Mongkok, Kowloon, Hong Kong SAR, China
Phone : (852) 2391-6725, (852) 2391-7306, (852) 2391-6158
Fax : (852) 2789-3205, (852) 2789-3349
Homepage : http://www.chequers-electronic.com
E-mail : info@chequers-electronic.com

1. Scope

This specification shall cover the characteristics of the SMD ceramic resonator ZTTCR8.00MG for clock oscillation circuit such on DVD, CD-ROM, computer hard disk and other automation equipment.

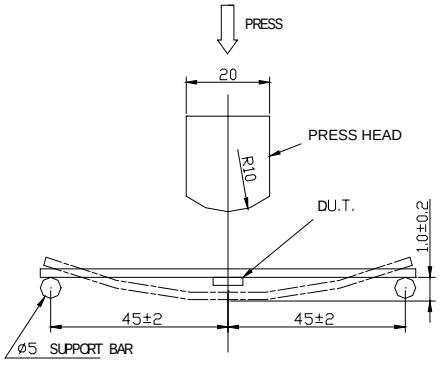
2. Specification no.: CQ2.882.122.18F.07

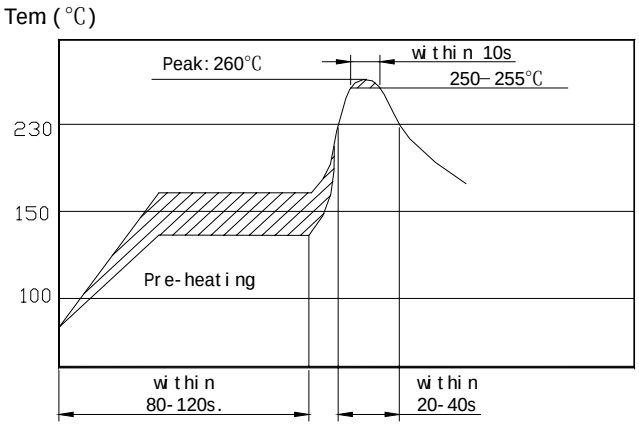
3. Part no.: ZTTCR8.00MG

4. Electrical specification

4-1	Nominal oscillating frequency	8.00MHz
4-2	Initial tolerance	±0.50% max.
4-3	Resonant impedance Ro	40Ω max.
4-4	Loading capacitance	15pF±20%
4-5	Insulation resistance	500MΩ min. (at 10V DC)
4-6	Withstanding voltage	DC 50V max. (1 minute)
4-7	Rating voltage - DC voltage - AC voltage	 6V DC max. 15V p-p max.
4-8	Temperature coefficient of oscillating frequency (-25°C to +85°C)	±0.3% max.
4-9	Operating temperature	-25°C to +85°C
4-10	Storage temperature	-55°C to +85°C
4-11	Aging (for 10 years)	±0.2% Max.

5. Physical characteristics

	Test item	Condition of test	Performance requirement
5-1	Random drop	Resonator shall be measured after 3 random drops from the height of 1.0m on wooden floor.	No visible damage and the measured values shall meet Table 1.
5-2	Vibration	Resonator shall be measured after being applied with vibration (amplitude: 1.5mm, frequency: 10Hz to 55Hz) to each of the 3 perpendicular directions i.e. X, Y and Z for 2 hours.	The measured values shall meet Table 1.
5-3	PCB bending strength	With a glass-epoxy board (width=40mm, thickness=1.6mm. Then the board is bent to 1.0mm displacement and kept in this condition for 5 seconds (see below for details). 	No visible damage and the measured values shall meet Table 1.

	Test item	Condition of test	Performance requirement
5-4	Soldering heat resistance	**Temperature profile of reflow soldering** The resonator shall be measured after being placed in room temperature for 1 hour. 	The measured values shall meet Table 1.
5-5	Soldering test	Passed through the reflow oven under the following condition and left at room temperature for 1 hour before measurement.	
		Surface temperature of the substrate: Duration	
		Preheat: 150°C±5°C: 60secs ± 10secs	
		Peak: 260°C±5°C: 10secs ± 3secs	
5-6	Solderability	Dipped in 250°C±5°C solder bath for 3secs±0.5secs with rosin flux (25wt% ethanol solution).	Terminals should be at least 95% covered by solder.

6. Environmental characteristics

	Test item	Condition of test	Performance requirement
6-1	High temperature	After being placed in a chamber (+85°C±5°C) for 96 hours, the resonator is measured after being placed in room temperature for 1 hour.	The measured values shall meet Table 1.
6-2	Low temperature	After being placed in a chamber (-25°C±5°C) for 96 hours, the resonator is measured after being placed in room temperature for 1 hour.	The measured values shall meet Table 1.
6-3	Humidity	After being placed in a chamber with a humidity of 90% to 95% RH and a temperature of +60°C±2°C for 100 hours ± 4 hours, the resonator is measured after being placed in room temperature for 1 hour.	The measured values shall meet Table 1.
6-4	Heat shock	After being kept at room temperature, resonator shall be placed at a temperature of –40°C. After 30 minutes at this temperature, the resonator is placed at a temperature of +85°C. After another 30 minutes at this temperature, the resonator is placed under -40°C again. The above processes are counted as 1 cycle. There is a transfer time of 15 seconds between different temperatures. After 5 cycles, the resonator shall be measured after being placed in room temperature for 1 hour.	The measured values shall meet Table 1.

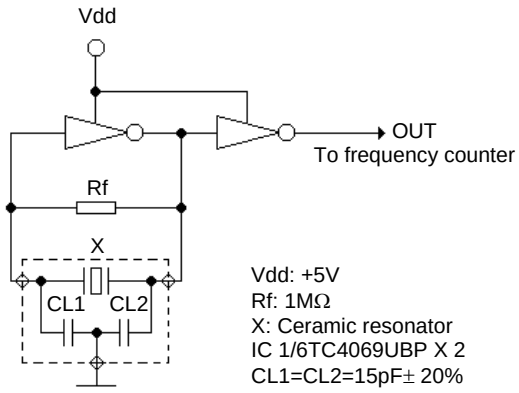
Table 1

Measurements	Requirements
Oscillating frequency change	±0.3% max. (refer to the initial value)
Resonant impedance change	40Ω max.

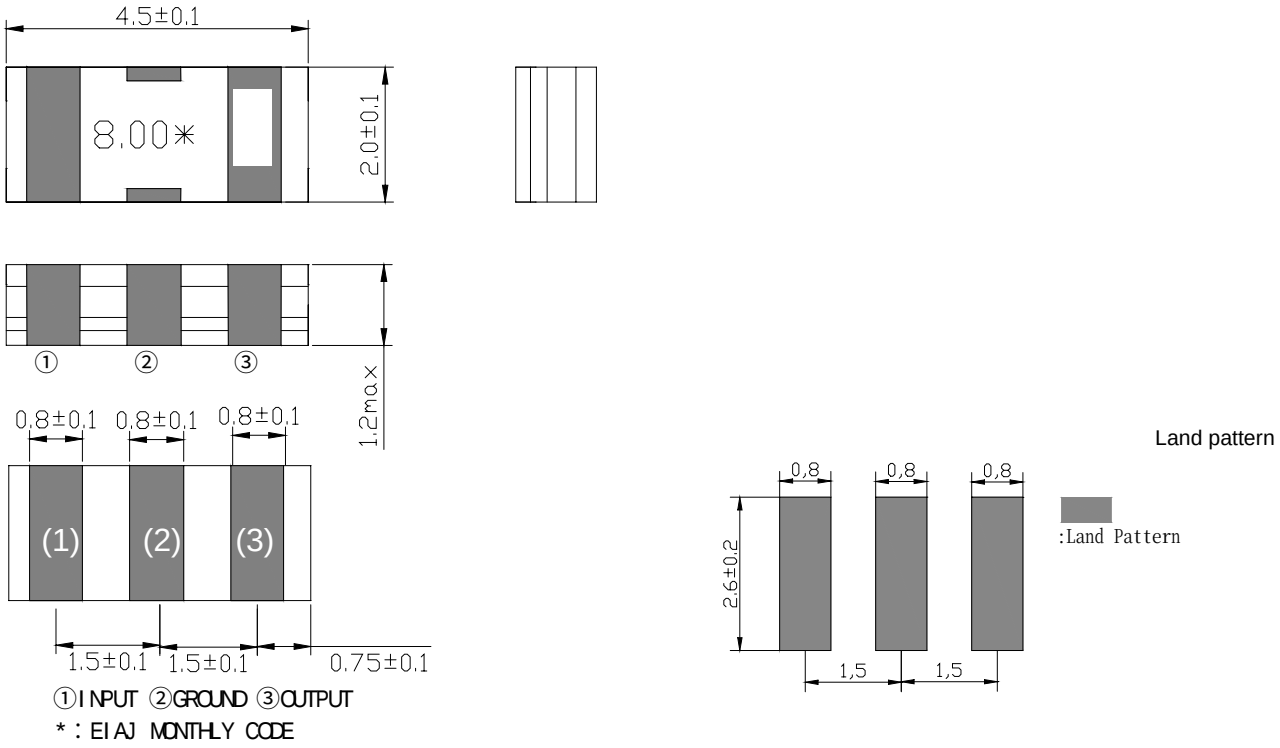
7. Test circuit & loop gain measuring circuit

7-1	Oscillating frequency	:	See Figure 2. Please note that the ZTTCR Series can oscillate normally even terminal (1) and (3) is connected reversibly
7-2	Equivalent circuit constants	:	Network Analyzer HP8751A or equivalent
7-3	Measuring condition	:	Temperature: +5°C to +35°C Humidity: 45% to 85% RH
	If require	:	Temperature: +25°C ± 3°C Humidity: 60% ± 10% RH

7-4 Test circuit



8. Dimensions and recommended soldering pattern

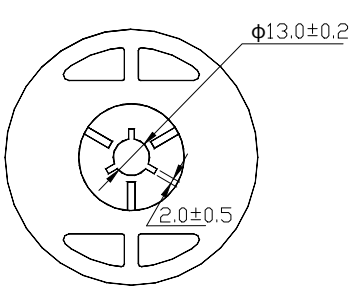


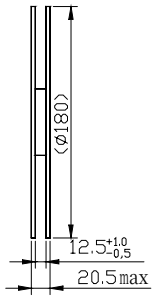
Unit: mm

Part no.	:	ZTTCR8.00MG
Printed on	:	4-Dec-09
Prepared	:	Frankie
Ver. Ctrl.	:	120409/F
Page	:	4 of 5

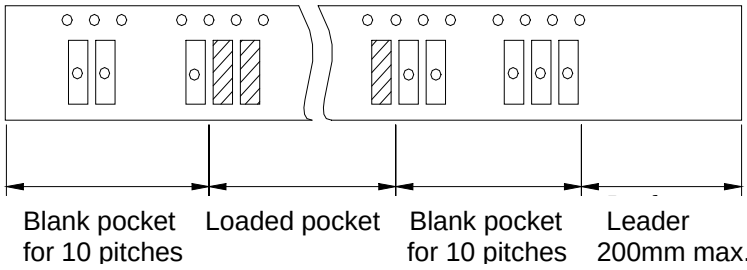
8. Packing information

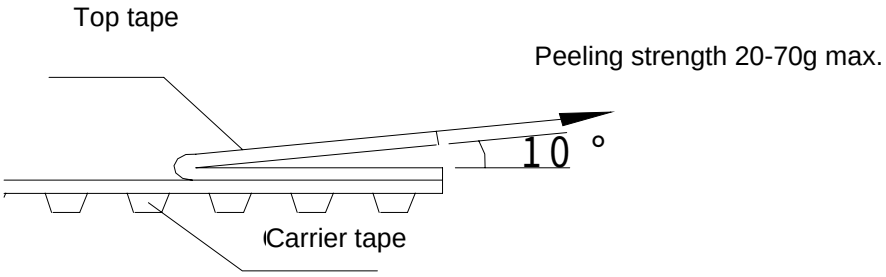
8-1 Reel dimension





8-2 Information on tape





8-3 Inner and outer carton box dimension

Each outer box (380x400x330mm) is made of corrugated paper with a thickness of 0.8cm. Each outer box has 12 inner boxes (185x185x95mm) while each inner box has 5 reels (each reel is wrapped with plastic bag).

Quantity of package

Each reel: 3000 pieces of piezoelectric ceramic part

Each inner box: 5 reels

Each out box: 12 inner boxes (180000 pieces of piezoelectric ceramic part)

Part no.	:	ZTTCR8.00MG
Printed on	:	4-Dec-09
Prepared	:	Frankie
Ver. Ctrl.	:	120409/F
Page	:	5 of 5