Ceramic Resonator 7.4*3.4mm



1. SCOPE

This specification is applied to the ceramic resonator in IC oscillation circuit.

2. ELECTRICAL CHARACTERISTICS

The MHz ceramic resonator must meet the following performance when tested in the circuit indicated in figure 1 and figure 2.

Measuring Condition: Temperature (+15 ~ 35℃), Humidity (45 ~85%RH)

ITEM	SPECIFICATION
HEM	SPECIFICATION
Oscillation Frequency	8.00 MHz
Initial Tolerance	within ±0.5%
Resonant Impedance	30 Ω max.
Built-in Load Capacitance	30pF±20% max.
Insulation Resistance	100 M \Q min. (Applied D.C.10V)
Withstanding Voltage	D.C. 100V, 5 seconds max.
Rated Working Voltage (1) D.C. Voltage (2) A.C. Voltage	D.C. 6V 15Vp-p
Temperature Stability Operating Temperature Storage Temperature	± 0.3 % max. (from initial value) -20 °C ~+80 °C -40 °C ~+85 °C
Aging (10 years)	± 0.3 % max. (from initial value)



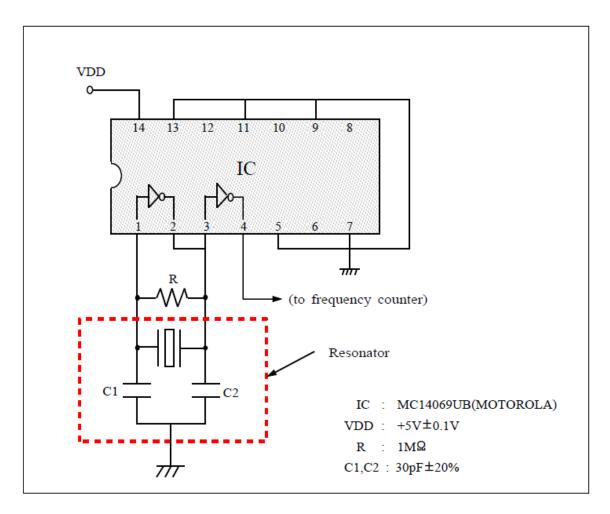


Figure 1. Test Circuit for Oscillating Frequency

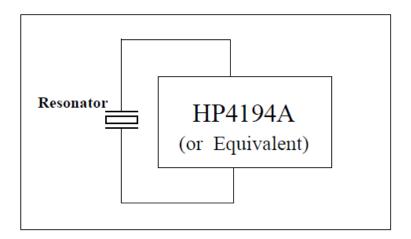
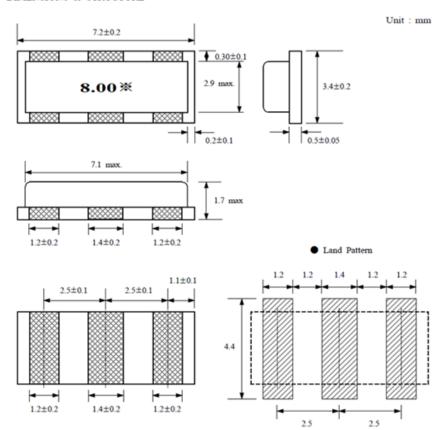


Figure 2. Measurement for Resonant Impedance

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3. DIMENSIONS & STRUCTURE



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4. ENVIRONMENTAL & PHYSICAL CHARACTERISTICS

ITEM	CONDITION & REQUIREMENT	
5-1.	After being placed in a chamber with +85 ± 2 °C for 500hours and then being	
Storage in High Temp.	placed in natural condition for 2 hour, then measure.	
	⇒ To be satisfied Table 1.	
5-2.	After being placed in a chamber with -55 \pm 2 $^{\circ}$ C for 500 hours and then being	
Storage in Low Temp.	placed in natural condition for 2 hour, then measure.	
	⇒ To be satisfied Table 1.	
5-3.	After being placed in a chamber within +90 to 95% R. H. at +60 ± 2 °C for	
Humidity	500 hours and then being placed in natural condition for 2 hour, then measure.	
	⇒ To be satisfied Table 1.	
5-4.	After being kept at room temperature, the resonator shall be placed at temperature of	
Heat Shock	-55 °C. After 30 minutes at this temperature resonator shall be immediately placed at	
	temperature of +85 °C. After 30 minutes at this temperature	
	resonator shall be returned to -55 °C again. After five above cycles, the resonator	
	shall be returned to room temperature for at least 2 hour, then measure.	
	⇒ To be satisfied Table 1.	
5-5.	Resonator shall be measured after 3 times random drops from the height of	
Random Drop	1 m on wooden floor.	
	⇒ No visible damage and the measured values shall meet Table 1.	
5-6.	Resonator shall be measured after being applied vibration of amplitude to 1.5mm with	
Vibration Test	10 to 55Hz band of vibration frequency to each of a perpendicular directions for	
	2 hours.	
	⇒ No visible damage and the measured values shall meet Table 1.	
5-7.	Resonator is soldered onto the center of PCB which is laid on the 2 small supporters	
Bending Strength PCB	th PCB spaced 90mm. PCB deflected to 3mm below from horizontal level by the pressing	
	force with 20x10.R10 stick. The force is supplied for 1 second, 5 times repeatedly.	
Velocity of pole for press: 0.5mm/sec.		
	20x10.R10 Stick	
	3.0	
	Deflection	
	45 45	
	PCB Thickness : 0.8 mm	
	Unit : mm	
	Oint . iiiii	
	→ No visible damage and the magnined values shall west Table 1	
	⇒ No visible damage and the measured values shall meet Table 1.	

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ITEM	CONDITION & REQUIREMENT	
5-8.	End terminals are immersed in rosin for 5 seconds and then immersed in soldering	
Solderability	bath of 245 ± 5 °C for 3 ± 0.5 seconds.	
_	⇒ 75% min. End terminals shall be wet with solder.	
5-9.		
Resistance to Soldering		
Heat		
(1) Reflow	Following profile of heat stress is applied to resonator, then being place in natural	
	condition for 1 hour, resonator shall be measured.	
Temperatrure(♥)		
	Peak Temperature 260°C max. Preheating (in air) 170 10sec. max. 1. Preheating conditions shall be 150 to 170°C for 120 to 160 seconds. Ascending time up to 170°C shall be longer than 30 seconds. 2. Heating conditions shall be within 10 seconds at 245°C min., but peak	
	temperature shall be lower than 260°C.	
(2) Soldering Iron	Soldering iron of 300 ± 5 °C shall be placed 0.5mm above from electrode of resonator. Melting solder through soldering iron shall be applied to electrode for 3 ± 1 seconds, then being place in natural condition for 24 hour, resonator shall be measured.	
	\Rightarrow The measured values shall meet Table 1.	

TABLE 1

MEASUREMENTS	REQUIREMENTS
Resonant Frequency	± 0.3 % max.(from initial value)
Resonant Impedance	30 Ω max.

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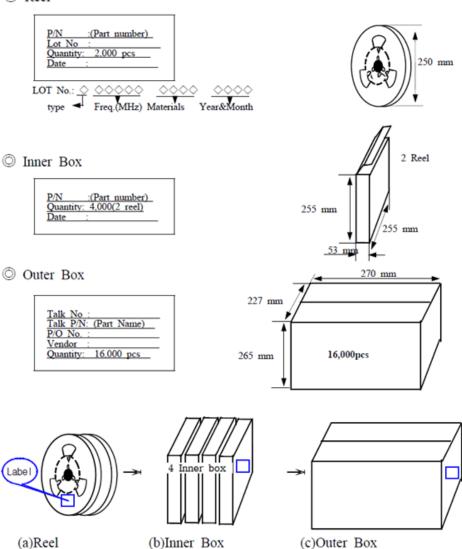


5. PACKAGING STANDARD

The products should be packaged for protecting from the accident which could be caused during transportation or preservation, and part name, quantity and inspection lot No. shall be given to the each minimum packing unit. The dimensions of carrier and carrier tape refer to the attached sheet.

Note) 1 Reel contains 2,000 pcs Resonator.

Reel



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6. CAUTIONS FOR USE

- 1. Resonator might be damaged when an excess stress is applied.
- Cleaning or washing of the component is not acceptable due to non sealed construction.Cleaning conditions, such as kinds of cleaning solvents, immersion time and temperatures etc, after soldering shall be checked by experiments before production.
- Conformal coating of the component is acceptable. However, the resin material, curing temperature, and other process conditions should be evaluated to confirm stable electrical characteristics are maintained.
- 4. Irregular or stop oscillation may occur under unmatched circuit conditions. And it shall be noted that oscillating frequencies of the Ceramics Resonator may drift depending on IC applied (the type names, the manufacturer) and capacitance of external capacitors(C1,C2) and the circuit design in figure 1.

7. LIMITATION FOR USAGE

- The component is manufactured and promoted to be used in general electronic of AV, home appliance, communication, measurement equipments and machine tools.
- 2. Contact us before using our products for the following applications.
 - 1) Aircraft equipment
 - 2) Aerospace equipment
 - 3) Undersea equipment
 - 4) Medical equipment
 - 5) Transportation equipment
 - 6) Traffic signal equipment
 - 7) Disaster prevention/Crime prevention equipment
 - 8) Data-processing equipment
 - Applications of similar complexity or with reliability requirements comparable to the applications listed in the above.

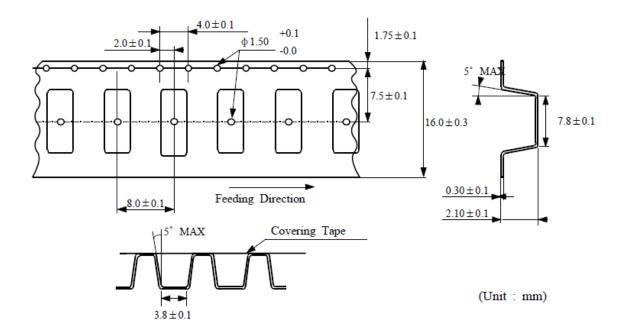
These applications requires especially high reliability in order to prevent defects which might directly cause damage to other party's life, body or property.

8. NOTICE

- This specification mentions the quality of the component as a single unit. Insure the component is thoroughly evaluated in your application circuit.
- Be sure to provide an appropriate fail-safe function on your product to prevent a second damage that may be caused by an abnormality or failure related to our product.
- Please do not use this component in any application that deviates from its intended use as noted within the specification.
- Return one of this specification after your signature of acceptance. In case of no return within three months from submission date, this specification should be treated as accepted.



■ DIMENSIONS OF CARRIER TAPE



DIMENSIONS OF TAPING REEL

