SAW Components

Data Sheet

CQTSR418M00.00

Customer’ s Approval Certificate	
Complies with Directive 2002/95/EC (RoHS)	
Please return this Page Via email as a certification of Your approval	
Checked & Approval by:	Date:

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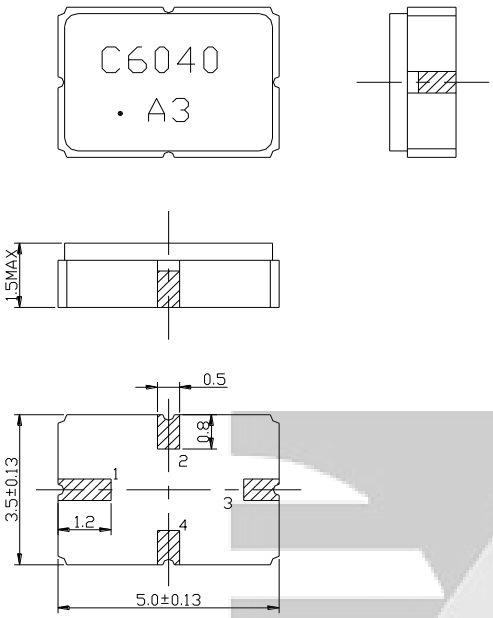
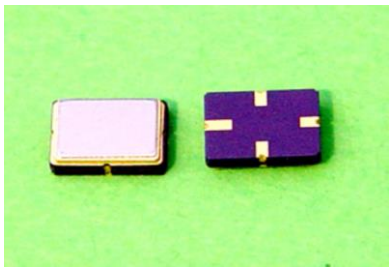
1. Package Dimension

Unit: mm





Pin No.	Function
2	Input
4	Output
1,3	Case Ground

2. Marking

C6040	(1) Model code
A3	(2) Date code

A	3
Month code	Last figure of year

Month	1	2	3	4	5	6	7	8	9	10	11	12
Month code	A	B	C	D	E	F	G	H	I	J	K	L

3. Performance

3.1 Application

One-port SAW Resonator for Wireless Remote Controller.

Center frequency: 418.0MHz

3.2 Maximum Rating

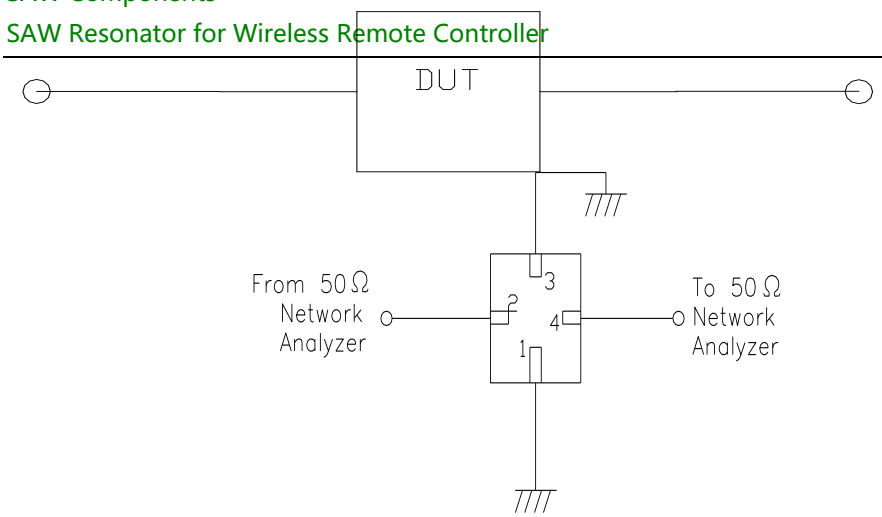
Rating		Value	Unit
Operating Temperature Range	T_A	-40 ~ +85	°C
Storage Temperature Range	T_{stg}	-45 ~ +125	°C
DC Voltage (between any Terminals)	V_{DC}	10	V
RF Power (in *BW*)	*P*	10	dBm
ESD Voltage (HB)	V_{ESD}	150	V

Electrostatic **S**ensitive **D**evice (**ESD**)

3.3 Electronic Characteristics

Item	Unit	Minimum	Typical	Maximum
Center Frequency (fo)	MHz	417.925	418.00	418.075
Insertion Loss	dB	—	1.3	2.0
Quality Factor	—	—	—	—
Unloaded Q	—	—	12,100	—
50Ω Loaded Q	—	—	2,000	—
Temperature Stability	—	—	—	—
Turnover Temperature	℃	20	35	50
Frequency Temperature Coefficient	ppm/℃²	—	0.032	—
Frequency Aging	ppm/yr	—	<±10	
DC Insulation Resistance	MΩ	1.0	—	—
RF Equivalent RLC Model	—	—	—	—
Motional Resistance R_1	Ω	—	20	26
Motional Inductance L_1	μ H	—	91	—
Motional Capacitance C_1	fF	—	1.6	—
Shunt Static Capacitance C_0	pF	1.7	2.0	2.3

3.4 Test Circuit



4 Reliability

4.1 Mechanical Shock: The components shall remain within the electrical specifications after three one-half sine shock pulses(3000g's for 0.3 ms) in each direction(for six total) along each of the three mutually perpendicular axes for a total of 18 shocks.

4.2 Vibration Fatigue: The components shall remain within the electrical specifications after loaded vibration at 20~55Hz, amplitude 1.5mm, X,Y,Z, direction, for 2 hours.

4.3 Leak Test

4.3.1 Gross Leak Test: Submerge samples into at +85℃ water for at least 1 minute. Carefully observe the samples. No bubbles should be seen.

4.3.2 Fine Leak Test: Expose samples for testing to 60 PSIG Helium gas for 2 hours. Then transfer the same samples to another chamber and draw a vacuum. Measure the leak rate. Failure is defined if the leak rate exceeds 5×10^{-8} atm cc/sec Helium.

4.4 High Temperature Storage: The components shall remain within the electrical specifications after being kept at the 85℃±2℃for 960 hours, then kept at room temperature for 2 hours.

4.5 Low Temperature Storage: The components shall remain within the electrical specifications after being kept at the – 40℃±2℃for 960 hours, then kept at room temperature for 2 hours.

4.6 Temperature Cycle: The components shall remain within the electrical specification after 32 cycles of high and low temperature testing (one cycle: 80℃ for 30 minutes → 25℃ for 20 seconds → -40℃ for 30 minutes) than kept at room temperature for 2 hours.

4.7 Humidity Test: The components shall remain within the electrical specifications after being kept at the condition of ambient temperature 70℃, and 90~95% RH for 240 hours, then kept at room temperature and normal humidity for 4 hours.

4.8 Solder-heat Resistance: The components shall remain within the electrical specifications after dipped in the solder at 260℃±5℃ for 10 to 11 seconds, then kept at room temperature for 10 minutes.

4.9 Solderability: Solderability of terminal shall be kept at more than 80% after dipped in the solder flux at 230℃±5℃ for 5±1 seconds.

4.10 Storage: The components shall meet the electrical and mechanical specifications after 5 years storage, if stored within the temperature range of -40℃~+85℃ and in the humidity of 20 to 60% r.h.