深圳市晶友嘉电子有限公司

SHENZHEN JINGYOUJIA ELECTRONIC CO.，LTD

CRYSTAL RESONATOR SPECIFICATIONS

声表面波谐振器承认书

客户 Customer：	立创商城
型号 Product：	SB39
客户料号 Code No：	
我司料号 Code No：	SB3943392TT
频率 Frequency：	433.92MHz
数量 Sample Quantity：	
日期 Date：	2021-7-15

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深圳市龙华区东环二路数字智能颖博园 B 栋 412

TEL：86-755-32840201　32850080

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供应商确认栏：

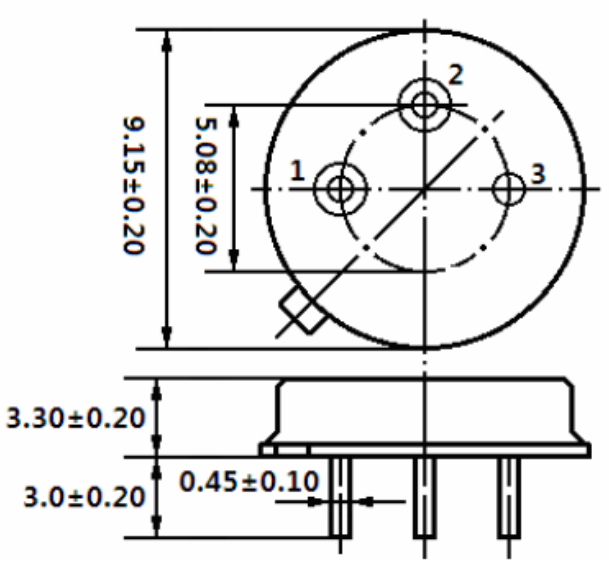
制作 Handler	确认 Checked	核审 Approved
戴晓嘉	陈斌	李晨

客户承认栏：

承认 Checked	核审 Approved

1. Package Dimension

Unit: mm

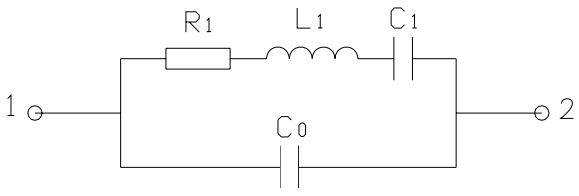


Pin	Connection
1	Input
2	Case Ground
3	Output

2. Marking

R433

3. Equivalent LC Model



4. Performance

4.1 Maximum Rating

Item	Value
DC Voltage V_{DC}	12V
Operation Temperature Range	-40℃ to +85℃
Storage Temperature Range	-40℃ to +85℃
RF Power Dissipation	0dBm

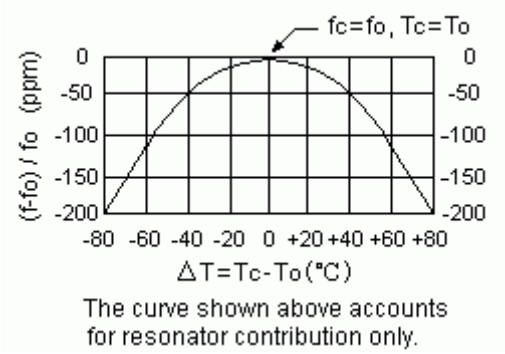
4.2 Electronic Characteristics

Item	Unit	Minimum	Typical	Maximum
Center Frequency (f_c)	MHz	433.845	433.92	433.995
Insertion Loss	dB	—	1.8	2.2
Quality Factor				
Unloaded Q	—	—	13173	—
50Ω Loaded Q	—	—	2167	—
Temperature Stability				
Turnover Temperature (T_0)	℃	25	-	55
Turnover Frequency (f_0)	MHz		f_c	
Frequency Temperature Coefficient (FTC)	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	29
Motional Inductance L_1	μH	—	95.2	—
Motional Capacitance C_1	fF	—	1.7241	—
Shunt Static Capacitance C_0	pF	1.90	2.15	2.40

Notes:

a. Unless noted otherwise, case temperature T_C = +25°C±2°C.
b. The center frequency, f_C, is measured at the minimum insertion loss point with the resonator in the 50Ω test system.
c. Frequency aging is the change in f_C with time and is specified at +65°C or less. Aging may exceed the specification for prolonged temperatures above +65°C. Typically, aging is greatest the first year after manufacture, decreasing in subsequent years.
d. Turnover temperature, T_O, is the temperature of maximum (or turnover) frequency, f_O. The nominal frequency at any case temperature, T_C, may be calculated from: $f = f_O [1 - FTC (T_O - T_C)^2]$.
e. This equivalent RLC model approximates resonator performance near the resonant frequency and is provided for reference only. The capacitance C_O is the static capacitance between Pin 1 and Pin 2 measured at low frequency (10MHz) with a capacitance meter. The measurement includes case parasitic capacitance.

4.3 Temperature Characteristics



5. Remarks

5.1 SAW devices should not be used in any type of fluid such as water, oil, organic solvent, etc.

5.2 Be certain not to apply voltage exceeding the rated voltage of components.

5.3 Do not operate outside the recommended operating temperature range of components.

5.4 Sudden change of temperature shall be avoided, deterioration of the characteristics can occur.

5.5 Be careful of soldering temperature and duration of components when soldering.

5.6 Do not place soldering iron on the body of components.

5.7 Be careful not to subject the terminals or leads of components to excessive force.

5.8 SAW devices are electrostatic sensitive. Please avoid static voltage during operation and storage.

5.9 Ultrasonic cleaning shall be avoided. Ultrasonic vibration may cause destruction of components.