

- **Ideal for 904.30 MHz Transmitters**
- **Very Low Insertion Loss**
- **Quartz Stability**
- **Ultra Miniature Ceramic SMD Package (QCC4A)**
- **Complies with Directive 2002/95/EC (RoHS Compliant)**

SR5001

| ABSOLUTE MAXIMUM RATING ($T_A=25^{\circ}\text{C}$) | | |
|--|-----------|-----------|
| Parameter | Rating | Unit |
| CW RF Power Dissipation | P | 0 |
| DC Voltage | V_{bc} | ± 30 |
| Operating Temperature Range | T_A | -10 ~ +60 |
| Storage Temperature Range | T_{stg} | -40 ~ +85 |

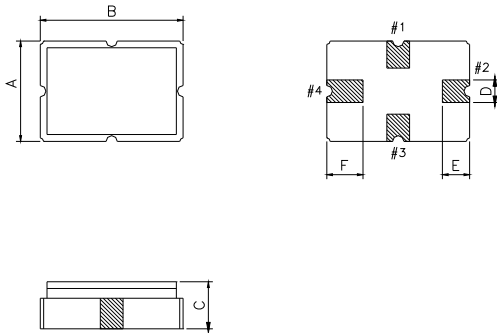
| ELECTRONIC CHARACTERISTICS | | | | | | |
|---|--------------------------------------|--------------|---------|---------|-----------|---------------------|
| Parameter | Sym | Minimum | Typical | Maximum | Unit | |
| Frequency (25°C) | Nominal Frequency | f_c | NS | 904.30 | NS | MHz |
| | Tolerance from 904.30 MHz | Δf_c | - | - | ± 150 | KHz |
| Insertion Loss | | IL | - | 3.4 | 4.0 | dB |
| Quality Factor | Unloaded Q-Value | Q_u | - | 6,200 | - | - |
| | 50Ω Loaded Q-Value | Q_L | - | 2,000 | - | - |
| Temperature Stability | Turnover Temperature | T_o | 25 | - | 55 | °C |
| | Turnover Frequency | f_o | - | f_c | - | KHz |
| | Frequency Temperature Coefficient | FTC | - | 0.032 | - | ppm/°C ² |
| Frequency Aging | Absolute Value during the First Year | $ f_A $ | - | - | 10 | ppm/yr |
| DC Insulation Resistance Between any Two Pins | | - | 1.0 | - | - | MΩ |
| RF Equivalent RLC Model | Motional Resistance | R_M | - | 48.0 | 58.5 | Ω |
| | Motional Inductance | L_M | - | 52.1218 | - | μH |
| | Motional Capacitance | C_M | - | 0.5949 | - | fF |
| | Shunt Static Capacitance | C_o | 1.0 | 1.3 | 1.6 | pF |

NS = Not Specified

Note:

- The frequency f_c is the frequency of minimum IL with the resonator in the specified test fixture in a 50Ω test system with VSWR ≤ 1.2:1.
- Unless noted otherwise, case temperature TC = +25°C±2°C.
- Frequency aging is the change in fC 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.
- Turnover temperature, T0, is the temperature of maximum (or turnover) frequency, f0. The nominal frequency at any case temperature, TC, may be calculated from: $f = f_o [1 - FTC (T_o - T_C)^2]$.
- This equivalent RLC model approximates resonator performance near the resonant frequency and is provided for reference only. The capacitance C_o is the measured static (nonmotional) capacitance between input terminal and ground or output terminal and ground.
- The measurement includes case parasitic capacitance.
- Derived mathematically from one or more of the following directly measured parameters: f_c , IL, 3 dB bandwidth, f_c versus T_C , and Co.
- The specifications of this device are based on the test circuit shown above and subject to change or obsolescence without notice.
- Typically, equipment utilizing this device requires emissions testing and government approval, which is the responsibility of the equipment manufacturer.
- Our liability is only assumed for the Surface Acoustic Wave (SAW) component(s) per se, not for applications, processes and circuits implemented within components or assemblies.
- For questions on technology, prices and delivery, please contact our sales offices or e-mail to sales@vanlong.com.

PACKAGE DIMENSIONS (QCC4A)



Electrical Connections

| Terminals | Connection |
|-----------|-------------|
| 1 | Terminal 1 |
| 3 | Terminal 2 |
| 2,4 | Case-Ground |

Package Dimensions

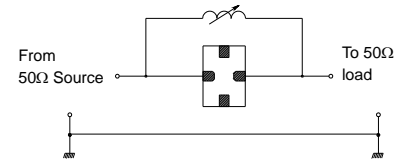
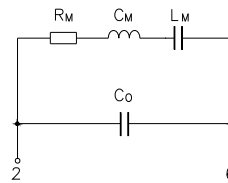
| Dimensions | Nom (mm) | Dimensions | Nom (mm) |
|------------|----------|------------|----------|
| A | 3.5 | D | 0.5 |
| B | 5.0 | E | 0.8 |
| C | 1.4 | F | 1.2 |

MARKING



- SR5001 - Part Code
- Date Code:
Y : Last digit of year
WW : Week No.

EQUIVALENT LC MODEL AND TEST CIRCUIT

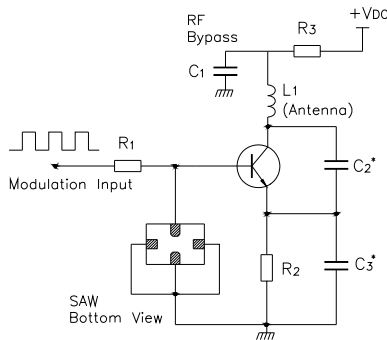


Equivalent LC Model

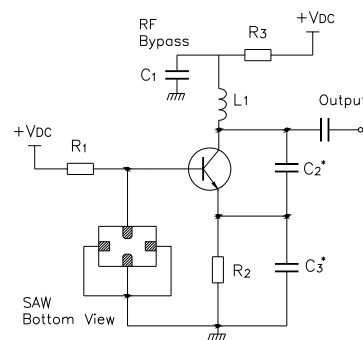
Typical Test Circuit

TYPICAL APPLICATION CIRCUIT

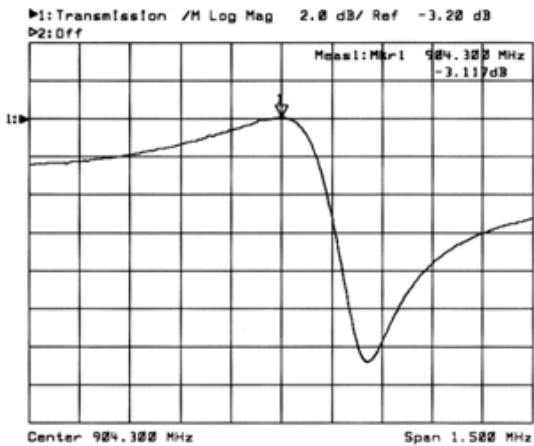
Low Power Transmitter Application



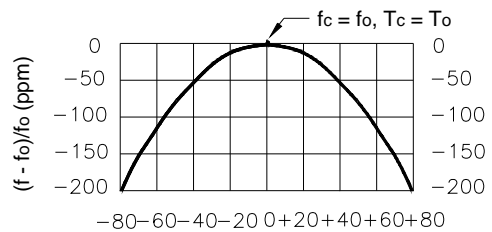
Local Oscillator Application



TYPICAL FREQUENCY RESPONSE



TEMPERATURE CHARACTERISTICS



$$\Delta T = T_c - T_o \text{ (}^\circ\text{C)}$$

The curve shown above accounts for resonator contribution only and does not include oscillator temperature characteristics.

| ENVIRONMENTAL CHARACTERISTICS | | |
|-------------------------------|---|--|
| Item | Condition of Test | Requirements |
| Random Drop | The Filter shall be measured after 3 times random drops from the height of 30cm on concrete floor. | No visible damage and the measured values shall remain the Electronic Characteristics after tests. |
| Vibration | The Filter shall be measured after being applied vibration of amplitude of 1.5mm with 10Hz to 55Hz bands of vibration frequency to each of 3 perpendicular directions for 1 hour. | |
| Lead Pulling Test | A weight of 3kg is pulled towards an axis of each terminal for 10 seconds. | |
| Lead bending Test | Lead shall be subject to withstand against 90 bending at its stem. This operation shall be done toward both directions. | |
| Resistance to Soldering Heat | Lead terminals are immersed up to 1.5mm from the Filter's body in solder bath of 270°C ± 10°C for 10 ± 1 seconds, and then the Filter shall be measured after being placed in natural condition for 2 hour. | |
| Solderability | Lead terminals are immersed in resin for 5 seconds and then immersed in soldering bath of 270°C ± 10°C for 2 ± 0.5 seconds. | |
| High Temperature Storage | After being placed in a chamber with +85°C ± 2°C for 96 ± 4 hours and then being placed in natural condition for 2 hour. The Filter shall be measured. | |
| Low Temperature Storage | After being placed in a chamber with -40°C ± 2°C for 96 ± 4 hours and then being placed in natural condition for 2 hour. The Filter shall be measured. | |
| Humidity | After being placed in a chamber with 90 to 95% R.H. at +40°C ± 2°C for 96 ± 4 hours and then being placed in natural condition for 2 hour. The Filter shall be measured. | |
| Heat Shock | After being kept at room temperature, the Filter shall be placed at temperature of -40°C for 30 minutes, and then the Filter shall be immediately placed at temperature of 85°C, after 30 minutes at temperature of 85°C, the Filter shall be returned to -40°C again. After 5 times above cycles, the Filter shall be returned to room temperature, after 2 hour in natural condition, the Filter shall be measured. | |

