

- **Ideal for 372.50 MHz Transmitters**
- **Very Low Insertion Loss**
- **Quartz Stability**
- **Ultra Miniature Ceramic SMD Package (QCC4A)**

**SR5428**

| Absolute Maximum Rating (Ta=25°C)   |           |      |
|-------------------------------------|-----------|------|
| Parameter                           | Rating    | Unit |
| CW RF Power Dissipation $P$         | 0         | dBm  |
| DC Voltage $V_{DC}$                 | ±30       | V    |
| Operating Temperature Range $T_A$   | -10 ~ +60 | °C   |
| Storage Temperature Range $T_{stg}$ | -40 ~ +85 | °C   |

| Electronic Characteristics                    |                                      |              |         |         |         |                     |
|-----------------------------------------------|--------------------------------------|--------------|---------|---------|---------|---------------------|
| Parameter                                     |                                      | Sym          | Minimum | Typical | Maximum | Unit                |
| Frequency (25°C)                              | Nominal Frequency                    | $f_c$        | NS      | 372.50  | NS      | MHz                 |
|                                               | Tolerance from 372.50 MHz            | $\Delta f_c$ | -       | -       | ± 75    | KHz                 |
| Insertion Loss                                |                                      | $IL$         | -       | 1.2     | 1.8     | dB                  |
| Quality Factor                                | Unloaded Q-Value                     | $Q_u$        | -       | 9,600   | -       | -                   |
|                                               | 50Ω Loaded Q-Value                   | $Q_L$        | -       | 1,250   | -       | -                   |
| Temperature Stability                         | Turnover Temperature                 | $T_o$        | 25      | -       | 55      | °C                  |
|                                               | Turnover Frequency                   | $f_o$        | -       | $f_c$   | -       | KHz                 |
|                                               | Frequency Temperature Coefficient    | $FTC$        | -       | 0.032   | -       | ppm/°C <sup>2</sup> |
| 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                  | $R_M$        | -       | 15      | 23      | Ω                   |
|                                               | Motional Inductance                  | $L_M$        | -       | 61.4500 | -       | μH                  |
|                                               | Motional Capacitance                 | $C_M$        | -       | 2.9738  | -       | fF                  |
|                                               | Shunt Static Capacitance             | $C_o$        | 2.6     | 2.9     | 3.2     | pF                  |

NS = Not Specified

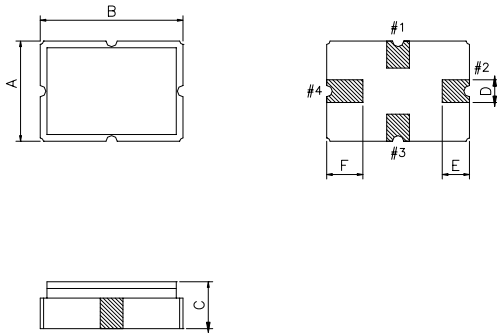
**Note:**

- 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  $C_o$ .
- 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.

# 372.50 MHz One Port SAW Resonator



## Package Dimensions (QCC4A)



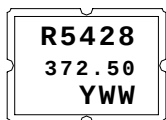
## Electrical Connections

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

## Package Dimensions

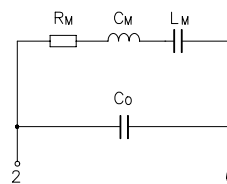
| Dimensions | Nom (mm) | Dimensions | Nom (mm) |
|------------|----------|------------|----------|
| A          | 3.5      | D          | 0.5      |
| B          | 5.0      | E          | 0.8      |
| C          | 1.4      | F          | 1.2      |

## Marking

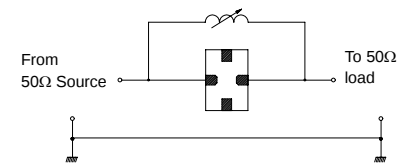


1. R5428 - Part Code
2. Frequency in MHz
3. Date Code:  
Y : Last digit of year  
WW : Week No.

## Equivalent LC Model and Test Circuit



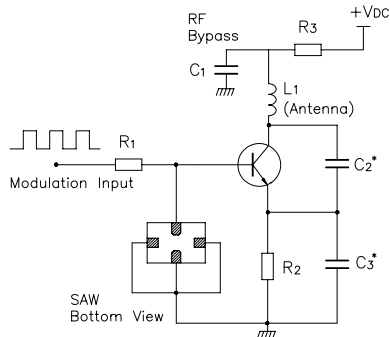
Equivalent LC Model



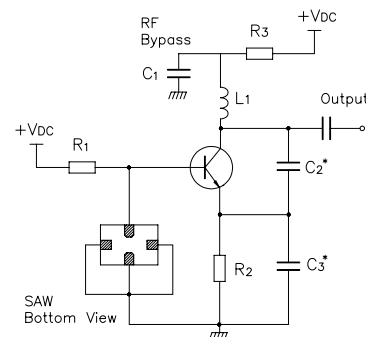
Typical Test Circuit

## Typical Application Circuit

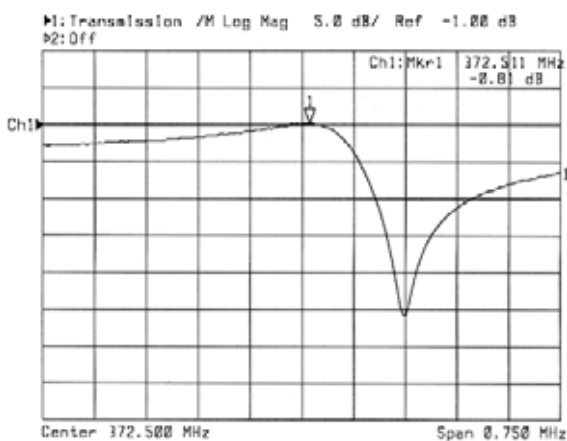
### Low Power Transmitter Application



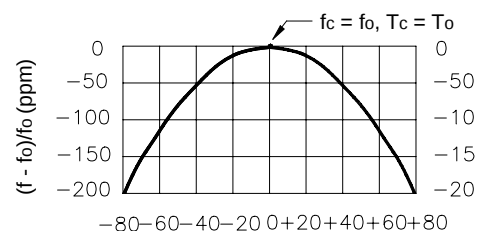
### Local Oscillator Application



## Typical Frequency Response



## Temperature Characteristics



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

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