

# SAW Components

Data Sheet R 770





| SAW Components | R 770               |
|----------------|---------------------|
| Resonator      | 433,81 / 434,06 MHz |

**Data Sheet** 

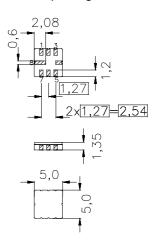
### **Features**

- 1-port resonator (2 Resonators in 1 housing)
- Provides reliable, fundamental mode, quartz frequency stabilization i.e. in transmitters or local oscillators
- Protection layer: Protec

### **Terminals**

■ Ni, gold plated

# Ceramic package QCC8C

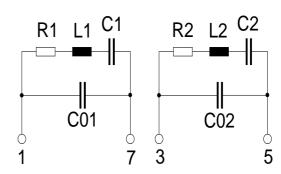


Dimensions in mm, approx. weight 0,1 g

## Pin configuration

| 1   | Input Reso 1  |
|-----|---------------|
| 3   | Input Reso 2  |
| 7   | Output Reso 1 |
| 5   | Output Reso 2 |
| 4,8 | Ground (case) |
| 2.6 | float         |

2,6 float



| Туре  | Ordering code     | Marking and Package | Packing           |  |  |
|-------|-------------------|---------------------|-------------------|--|--|
|       |                   | according to        | according to      |  |  |
| R 770 | B39431-R 770-U310 | C61157-A7-A56       | F61074-V8169-Z000 |  |  |

Electrostatic Sensitive Device (ESD)

# **Maximum ratings**

| Operable temperature range | $T_{A}$       | -45/+120 | °C  |                       |
|----------------------------|---------------|----------|-----|-----------------------|
| Storage temperature range  | $T_{\rm stg}$ | -45/+120 | °C  |                       |
| DC voltage                 | $V_{\rm DC}$  | 12       | V   | between any terminals |
| Source power               | $P_{s}$       | 0        | dBm |                       |



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## **Characteristics Resonator 1**

 $T_{A} = 25 \,^{\circ} \text{C}$   $Z_{S} = 50 \,\Omega$   $Z_{L} = 50 \,\Omega$ Reference temperature: Terminating source impedance: Terminating Load impedance:

|  |                       | min.   | typ.   | max.   |                    |
|--|-----------------------|--------|--------|--------|--------------------|
| Center frequency Resonator 11)                     | f <sub>C</sub>        | 433,76 | 433,81 | 433,86 | MHz                |
| Frequency offset Resonator 2 to Resonator 1        | f <sub>offset</sub>   | 200,0  | 250,0  | 300,0  | KHz                |
| Minimum insertion attenuation                      | $\alpha_{\text{min}}$ | _      | 1,3    | 1,7    | dB                 |
| Unloaded quality factor                            | $Q_{U}$               | 7500   | 10100  | _      |                    |
| Ageing of $f_{\rm c}$                              |                       | _      | _      | ± 50   | ppm                |
| Equivalent circuit elements                        |                       |        |        |        |                    |
| Motional capacitance                               | $C_1$                 | _      | 2,12   | _      | fF                 |
| Motional inductance                                | $L_1$                 | _      | 63,43  | _      | μΗ                 |
| Motional resistance                                | $R_1$                 | _      | 17     | 23     | Ω                  |
| Parallel capacitance <sup>2)</sup>                 | $C_{01}$              | _      | 2,4    | _      | pF                 |
| Temperature coefficient of frequency <sup>3)</sup> | $TC_{f}$              | _      | - 0,03 | _      | ppm/K <sup>2</sup> |
| Turnover temperature                               | $T_0$                 | 5      | _      | 35     | °C                 |

<sup>1)</sup> Center frequency is defined as the maximum of the real part of the admittance.
2) If used in two port configuration (pin 1-input, pin 7-output)  $C_0$  is reduced by approx. 0,3 pF.
3) Temperature dependence of  $f_c$ :  $f_c(T_A) = f_c(T_0)(1 + TC_f(T_A - T_0)^2)$ 



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# **Characteristics Resonator 2**

 $T_{A} = 25 \,^{\circ} \text{C}$   $Z_{S} = 50 \,\Omega$   $Z_{L} = 50 \,\Omega$ Reference temperature: Terminating source impedance: Terminating Load impedance:

|  |                       | min.   | typ.   | max.   |                    |
|--|-----------------------|--------|--------|--------|--------------------|
| Center frequency Resonator 2 <sup>1)</sup>         | f <sub>C</sub>        | 434,01 | 434,06 | 434,11 | MHz                |
| Frequency offset Resonator 2 to Resonator 1        | f <sub>offset</sub>   | 200,0  | 250,0  | 300,0  | KHz                |
| Minimum insertion attenuation                      | $\alpha_{\text{min}}$ | _      | 1,3    | 1,7    | dB                 |
| Unloaded quality factor                            | $Q_{U}$               | 7500   | 10100  | _      |                    |
| Ageing of $f_{\rm c}$                              |                       | _      | _      | ± 50   | ppm                |
| Equivalent circuit elements                        |                       |        |        |        |                    |
| Motional capacitance                               | $C_2$                 | _      | 2,14   | _      | fF                 |
| Motional inductance                                | $L_2$                 | _      | 62,86  | _      | μΗ                 |
| Motional resistance                                | $R_2$                 | _      | 17     | 23     | Ω                  |
| Parallel capacitance <sup>2)</sup>                 | $C_{02}$              | _      | 2,4    | _      | pF                 |
| Temperature coefficient of frequency <sup>3)</sup> | $TC_{f}$              | _      | - 0,03 | _      | ppm/K <sup>2</sup> |
| Turnover temperature                               | $T_0$                 | 5      | _      | 35     | °C                 |

<sup>1)</sup> Center frequency is defined as the maximum of the real part of the admittance.
2) If used in two port configuration (pin 3-input, pin 5-output)  $C_0$  is reduced by approx. 0,3 pF.
3) Temperature dependence of  $f_c$ :  $f_c(T_A) = f_c(T_0)(1 + TC_f(T_A - T_0)^2)$ 



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