



# SAW Components

Data Sheet R 821





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Resonator

315,00 MHz

Data Sheet

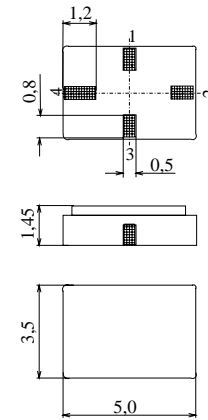
Ceramic package **QCC4A**

**Features**

- 1-port resonator
- Provides reliable, fundamental mode, quartz frequency stabilization i.e. in transmitters or local oscillators
- Protection layer: Elpas
- AEC-Q200 qualified component family

**Terminals**

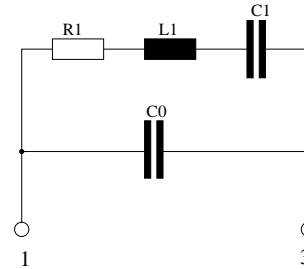
- Ni, gold plated



Dimensions in mm, approx. weight 0,1 g

**Pin configuration**

- 1 Input
- 3 Output, grounded in 1-port conf.
- 2,4 Ground (case)



| Type  | Ordering code     | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| R 821 | B39321-R 821-H210 | C61157-A7-A86                    | F61074-V8175-Z000    |

Electrostatic Sensitive Device (ESD)

**Maximum ratings**

|                            |           |          |     |                       |
|----------------------------|-----------|----------|-----|-----------------------|
| Operable temperature range | $T_A$     | -40/+125 | °C  | between any terminals |
| Storage temperature range  | $T_{stg}$ | -40/+125 | °C  |                       |
| DC voltage                 | $V_{DC}$  | 12       | V   |                       |
| Source power               | $P_s$     | 0        | dBm |                       |



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Characteristics

Reference temperature:  $T_A = 25\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$

|   |                 | min.    | typ.   | max.    |                    |
|---|-----------------|---------|--------|---------|--------------------|
| <b>Center frequency</b> <sup>1)</sup>                     | $f_c$           | 314,925 | 315,00 | 315,075 | MHz                |
| <b>Minimum insertion attenuation</b>                      | $\alpha_{\min}$ | —       | 1,5    | 1,9     | dB                 |
| Unloaded quality factor                                   | $Q_U$           | 9400    | 13000  | —       |                    |
| <b>Ageing of <math>f_c</math></b>                         |                 | —       | —      | -50/+50 | ppm                |
| <b>Equivalent circuit elements</b>                        |                 |         |        |         |                    |
| Motional capacitance                                      | $C_1$           | —       | 2,136  | —       | fF                 |
| Motional inductance                                       | $L_1$           | —       | 119,5  | —       | $\mu\text{H}$      |
| Motional resistance                                       | $R_1$           | —       | 18     | 25      | $\Omega$           |
| Parallel capacitance <sup>2)</sup>                        | $C_0$           | —       | 2,8    | —       | pF                 |
| <b>Temperature coefficient of frequency</b> <sup>3)</sup> | $TC_f$          | —       | -0,032 | —       | ppm/K <sup>2</sup> |
| <b>Turnover temperature</b>                               | $T_0$           | 20      | —      | 50      | $^{\circ}\text{C}$ |

<sup>1)</sup> Center frequency is defined as maximum of the real part of the admittance

<sup>2)</sup> If used in two port configuration (pin 1-input, pin 3-output)  $C_0$  is reduced by approx. 0,3 pF.

<sup>3)</sup> 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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