EPCOS

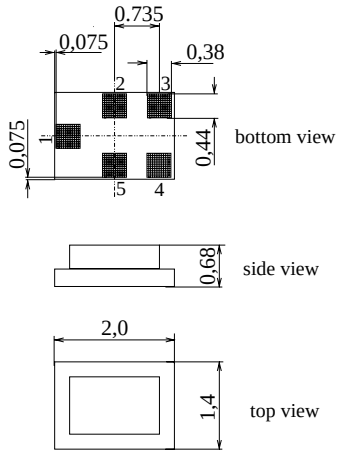
# *SAW Components*

*Data Sheet B7835*

Chip sized SAW package QCS5C

## Features

- Low-loss RF filter for mobile telephone W-CDMA system, receive path
- Low amplitude ripple
- Usable passband 60 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50Ω to 200Ω
- Package for **S**urface **M**ounted **T**echnology (**SMT**)
- Chip Sized SAW Package (CSSP)



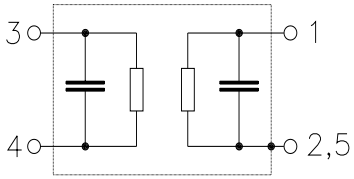

## Terminals

- Gold-plated Ni

Dimensions in mm, approx. weight 0,012 g

## Pin configuration

| | |
|---|---|
| 1 | Input, unbalanced |
| 3, 4 | Output, balanced |
| 2, 5 | To be grounded |




| Type | Ordering code | Marking and Package according to | Packing according to |
|---|---|---|---|
| B7835 | B39212-B7835-C710 | C61157-A7-A111 | F61074-V8151-Z000 |

**E**lectrostatic **S**ensitive **D**evice (**ESD**)

## Maximum ratings

| | | | | |
|---|---|---|---|---|
| Operating temperature range | $T$ | – 20/+ 85 | ˚C | |
| Storage temperature range | $T_{stg}$ | – 40/+ 85 | ˚C | |
| DC voltage | $V_{DC}$ | 5 | V | |
| ESD voltage | $V_{ESD}$* | 50 | V | Machine Model, 10 pulses |
| Source power | $P_S$ | 10 | dBm | |

* - acc. to JESD22-A115A (Machine Model), 10 negative & 10 positive pulses

## Characteristics

Operating temperature range: $T$ = +25°C
Terminating source impedance: $Z_S$ = 50 Ω
Terminating load impedance: $Z_L$ = 200 Ω (balanced) || 22 nH

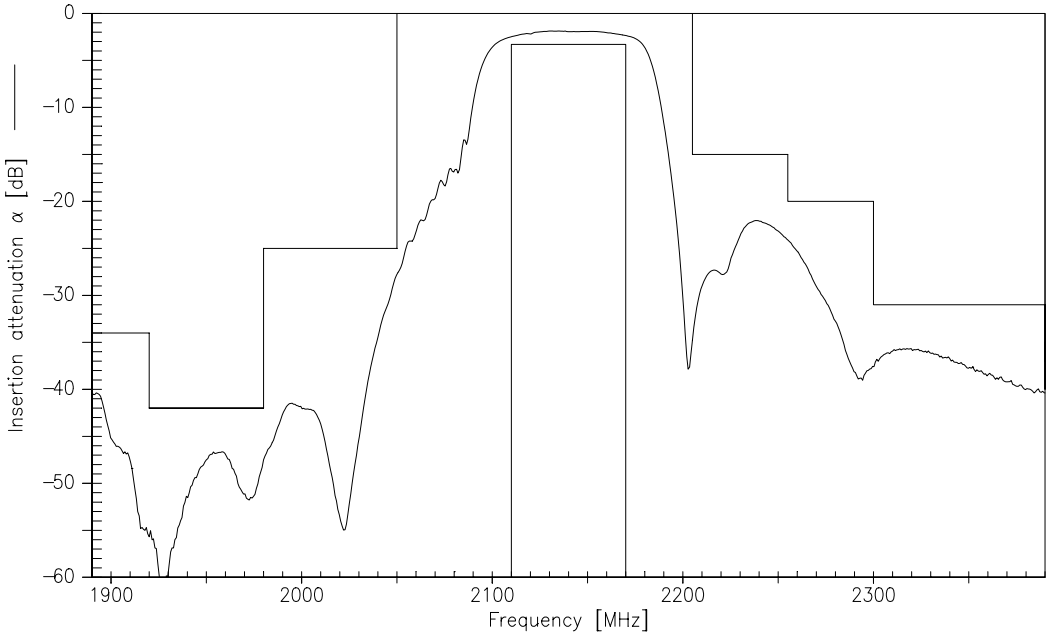
| | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Center frequency** | $f_C$ | — | 2140,0 | — | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | |
| 2110,0 ... 2170,0 MHz | | — | 2,6 | 3,0 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | |
| 2110,0 ... 2170,0 MHz | | — | 0,7 | 1,2 | dB |
| **Amplitude ripple per 5MHz channel** (p-p) | $\Delta\alpha_{5MHz}$ | | | | |
| 2110,0 ... 2170,0 MHz | | — | 0,3 | 0,6 | dB |
| **Input VSWR** | | | | | |
| 2110,0 ... 2170,0 MHz | | — | 1,5 | 2,0 | |
| **Output VSWR** | | | | | |
| 2110,0 ... 2170,0 MHz | | — | 1,7 | 2,1 | |
| **Output amplitude balance**($\lvert S_{31}/S_{21}\rvert$) | | | | | |
| 2110,0 ... 2170,0 MHz | | -1,6 | | 1,6 | dB |
| **Output phase balance**($\phi(S_{31})-\phi(S_{21})+180°$) | | | | | |
| 2110,0 ... 2170,0 MHz | | -12,0 | | 12,0 | degree |
| **Attenuation** | $\alpha$ | | | | |
| 180,0 ... 200,0 MHz | | 60 | 68 | — | dB |
| 200,0 ... 1000,0 MHz | | 39 | 42 | — | dB |
| 1000,0 ... 1880,0 MHz | | 29 | 32 | — | dB |
| 1880,0 ... 1920,0 MHz | | 34 | 38 | — | dB |
| 1920,0 ... 1980,0 MHz | | 42 | 46 | — | dB |
| 1980,0 ... 2050,0 MHz | | 25 | 29 | — | dB |
| 2205,0 ... 2255,0 MHz | | 15 | 22 | — | dB |
| 2255,0 ... 2300,0 MHz | | 20 | 23 | — | dB |
| 2300,0 ... 2490,0 MHz | | 31 | 35 | — | dB |
| 2490,0 ... 2550,0 MHz | | 35 | 40 | — | dB |
| 2550,0 ... 3200,0 MHz | | 35 | 39 | — | dB |
| 3200,0 ... 6000,0 MHz | | 40 | 52 | — | dB |

## Characteristics

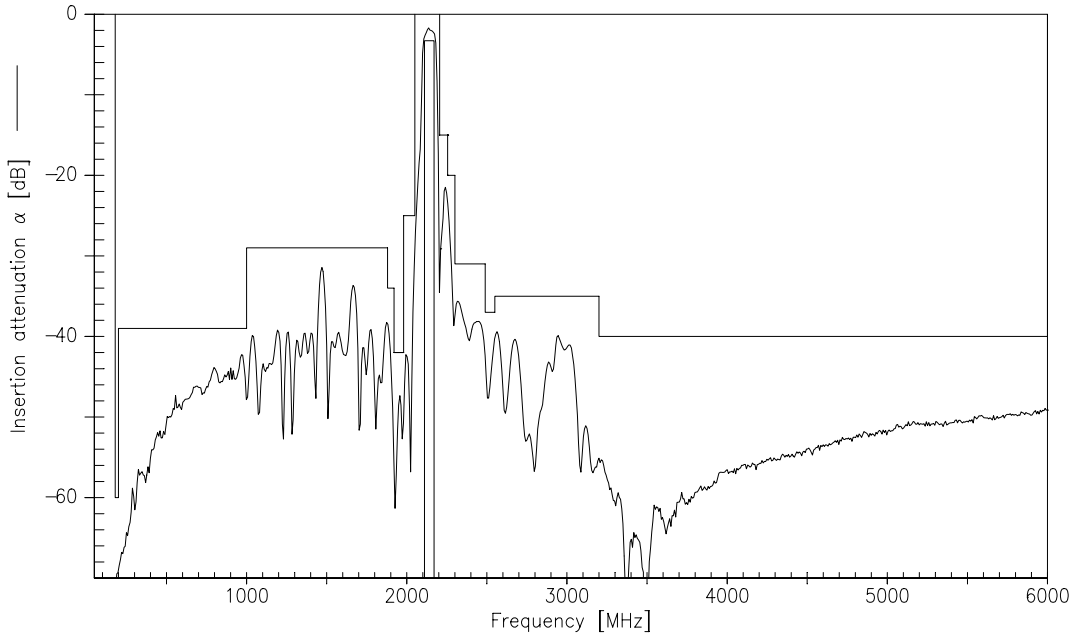
Operating temperature range: $T$ = -20 to +85 °C
Terminating source impedance: $Z_S$ = 50 Ω
Terminating load impedance: $Z_L$ = 200 Ω (balanced) || 22 nH

| | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Center frequency** | $f_C$ | — | 2140,0 | — | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | |
| 2110,0 ... 2170,0 MHz | | — | 2,8 | 3,3 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | |
| 2110,0 ... 2170,0 MHz | | — | 0,9 | 1,5 | dB |
| **Amplitude ripple per 5MHz channel** (p-p) | $\Delta\alpha_{5MHz}$ | | | | |
| 2110,0 ... 2170,0 MHz | | — | 0,4 | 0,6 | dB |
| **Input VSWR** | | | | | |
| 2110,0 ... 2170,0 MHz | | — | 1,6 | 2,0 | |
| **Output VSWR** | | | | | |
| 2110,0 ... 2170,0 MHz | | — | 1,7 | 2,1 | |
| **Output amplitude balance**($\lvert S_{31}/S_{21}\rvert$) | | | | | |
| 2110,0 ... 2170,0 MHz | | -1,6 | | 1,6 | dB |
| **Output phase balance**($\phi(S_{31})-\phi(S_{21})+180°$) | | | | | |
| 2110,0 ... 2170,0 MHz | | -12,0 | | 12,0 | degree |
| **Attenuation** | $\alpha$ | | | | |
| 180,0 ... 200,0 MHz | | 60 | 67 | — | dB |
| 200,0 ... 1000,0 MHz | | 39 | 42 | — | dB |
| 1000,0 ... 1880,0 MHz | | 29 | 32 | — | dB |
| 1880,0 ... 1920,0 MHz | | 34 | 38 | — | dB |
| 1920,0 ... 1980,0 MHz | | 42 | 46 | — | dB |
| 1980,0 ... 2050,0 MHz | | 25 | 26 | — | dB |
| 2205,0 ... 2255,0 MHz | | 15 | 22 | — | dB |
| 2255,0 ... 2300,0 MHz | | 20 | 23 | — | dB |
| 2300,0 ... 2490,0 MHz | | 31 | 35 | — | dB |
| 2490,0 ... 2550,0 MHz | | 37 | 40 | — | dB |
| 2550,0 ... 3200,0 MHz | | 35 | 39 | — | dB |
| 3200,0 ... 6000,0 MHz | | 40 | 52 | — | dB |

**Transfer function**




**Transfer function** (wide band):



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