



SAW Components

Data Sheet B7717, Pb-free





SAW Components

B7717

Low-Loss Filter for Mobile Communication

1960,0 MHz

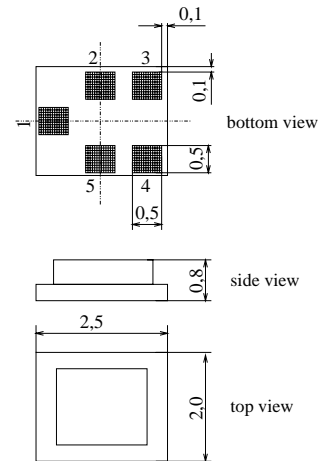
Data Sheet



Chip sized SAW package **QCS5H**

Features

- Low-loss RF filter for mobile telephone PCS systems, receive path
- Low amplitude ripple
- Usable passband 60 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50Ω to 200Ω
- Suitable for GPRS class 1 to 12
- Package for **Surface Mounted Technology (SMT)**
- Pb-free



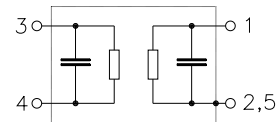
Terminals

- Gold-plated Ni

Dimensions in mm, approx. weight 0,015 g

Pin configuration

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



| Type | Ordering code | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| B7717 | B39202-B7717-K910 | C61157-A7-A139 | F61074-V8189-Z000 |

Electrostatic Sensitive Device (ESD)

Maximum ratings

| | | | | |
|----------------------------|-------------|-----------|-----|--|
| Operable temperature range | T | - 40/+ 85 | °C | Machine Model, 10 pulses |
| Storage temperature range | T_{stg} | - 40/+ 85 | °C | |
| DC voltage | V_{DC} | 5 | V | |
| ESD voltage | V^*_{ESD} | 50* | V | |
| Input power at | | | | |
| GSM850, GSM900 | P_{IN} | 15 | dBm | peak power of GSM signal, duty cycle 4:8 |
| GSM1800, GSM1900 | P_{IN} | 12 | dBm | |
| Tx bands | | | | |

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



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Characteristics

Operating temperature range: $T = + 25 \pm 2 \text{ }^\circ\text{C}$
 Terminating source impedance: $Z_S = 50 \text{ }\Omega$
 Terminating load impedance: $Z_L = 200 \text{ }\Omega$ (balanced) || 15 nH

| | | min. | typ. | max. | |
|--|-----------------|-------------|-------------|-------------|--------|
| Center frequency | f_C | — | 1960,0 | — | MHz |
| Maximum insertion attenuation | α_{\max} | — | 2,6 | 3,1 | dB |
| 1930,0 ... 1990,0 MHz | | | | | |
| Amplitude ripple (p-p) | $\Delta\alpha$ | — | 1,0 | 1,5 | dB |
| 1930,0 ... 1990,0 MHz | | | | | |
| Input VSWR | | — | 1,7 | 2,2 | |
| 1930,0 ... 1990,0 MHz | | | | | |
| Output VSWR | | — | 1,7 | 2,2 | |
| 1930,0 ... 1990,0 MHz | | | | | |
| Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$) | | -15 | 0 | 15 | degree |
| 1930,0 ... 1990,0 MHz | | | | | |
| Output amplitude balance (S_{31}/S_{21}) | | -1,5 | 0 | 1,5 | dB |
| 1930,0 ... 1990,0 MHz | | | | | |
| Attenuation | α | | | | |
| 0,0 ... 1000,0 MHz | | 45 | 50 | — | dB |
| 1000,0 ... 1830,0 MHz | | 25 | 31 | — | dB |
| 1830,0 ... 1900,0 MHz | | 15 | 19 | — | dB |
| 1900,0 ... 1910,0 MHz | | 11 | 18 | — | dB |
| 2010,0 ... 2030,0 MHz | | 8 | 11 | — | dB |
| 2030,0 ... 2070,0 MHz | | 12 | 14 | — | dB |
| 2070,0 ... 2310,0 MHz | | 20 | 22 | — | dB |
| 2310,0 ... 2380,0 MHz | | 35 | 43 | — | dB |
| 2380,0 ... 4600,0 MHz | | 30 | 42 | — | dB |
| 4600,0 ... 6000,0 MHz | | 23 | 50 | — | dB |



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Characteristics

Operating temperature range: $T = -10$ to $+75$ °C
 Terminating source impedance: $Z_S = 50 \Omega$
 Terminating load impedance: $Z_L = 200 \Omega$ (balanced) || 15 nH

| | | min. | typ. | max. | |
|--|----------------|------|--------|------|--------|
| Center frequency | f_C | — | 1960,0 | — | MHz |
| Maximum insertion attenuation | α_{max} | — | 2,8 | 3,5 | dB |
| 1930,0 ... 1990,0 MHz | | | | | |
| Amplitude ripple (p-p) | $\Delta\alpha$ | — | 1,2 | 1,9 | dB |
| 1930,0 ... 1990,0 MHz | | | | | |
| Input VSWR | | — | 1,7 | 2,4 | |
| 1930,0 ... 1990,0 MHz | | | | | |
| Output VSWR | | — | 1,7 | 2,4 | |
| 1930,0 ... 1990,0 MHz | | | | | |
| Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$) | | -15 | 0 | 15 | degree |
| 1930,0 ... 1990,0 MHz | | | | | |
| Output amplitude balance (S_{31}/S_{21}) | | -1,5 | 0 | 1,5 | dB |
| 1930,0 ... 1990,0 MHz | | | | | |
| Attenuation | α | | | | |
| 0,0 ... 1000,0 MHz | | 45 | 50 | — | dB |
| 1000,0 ... 1830,0 MHz | | 25 | 31 | — | dB |
| 1830,0 ... 1900,0 MHz | | 15 | 19 | — | dB |
| 1900,0 ... 1910,0 MHz | | 7 | 15 | — | dB |
| 2010,0 ... 2030,0 MHz | | 5 | 11 | — | dB |
| 2030,0 ... 2070,0 MHz | | 12 | 14 | — | dB |
| 2070,0 ... 2310,0 MHz | | 20 | 22 | — | dB |
| 2310,0 ... 2380,0 MHz | | 35 | 43 | — | dB |
| 2380,0 ... 4600,0 MHz | | 30 | 42 | — | dB |
| 4600,0 ... 6000,0 MHz | | 23 | 50 | — | dB |



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Characteristics

Operating temperature range: $T = -30$ to $+85$ °C
 Terminating source impedance: $Z_S = 50 \Omega$
 Terminating load impedance: $Z_L = 200 \Omega$ (balanced) || 15 nH

| | | min. | typ. | max. | |
|--|----------------|------|--------|------|--------|
| Center frequency | f_C | — | 1960,0 | — | MHz |
| Maximum insertion attenuation | α_{max} | — | 2,9 | 4,0 | dB |
| 1930,0 ... 1990,0 MHz | | | | | |
| Amplitude ripple (p-p) | $\Delta\alpha$ | — | 1,3 | 2,4 | dB |
| 1930,0 ... 1990,0 MHz | | | | | |
| Input VSWR | | — | 1,7 | 2,4 | |
| 1930,0 ... 1990,0 MHz | | | | | |
| Output VSWR | | — | 1,7 | 2,4 | |
| 1930,0 ... 1990,0 MHz | | | | | |
| Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$) | | -15 | 0 | 15 | degree |
| 1930,0 ... 1990,0 MHz | | | | | |
| Output amplitude balance (S_{31}/S_{21}) | | -1,5 | 0 | 1,5 | dB |
| 1930,0 ... 1990,0 MHz | | | | | |
| Attenuation | α | | | | |
| 0,0 ... 1000,0 MHz | | 45 | 50 | — | dB |
| 1000,0 ... 1830,0 MHz | | 25 | 31 | — | dB |
| 1830,0 ... 1900,0 MHz | | 15 | 19 | — | dB |
| 1900,0 ... 1910,0 MHz | | 7 | 15 | — | dB |
| 2010,0 ... 2030,0 MHz | | 5 | 11 | — | dB |
| 2030,0 ... 2070,0 MHz | | 12 | 14 | — | dB |
| 2070,0 ... 2310,0 MHz | | 20 | 22 | — | dB |
| 2310,0 ... 2380,0 MHz | | 35 | 43 | — | dB |
| 2380,0 ... 4600,0 MHz | | 30 | 42 | — | dB |
| 4600,0 ... 6000,0 MHz | | 23 | 50 | — | dB |



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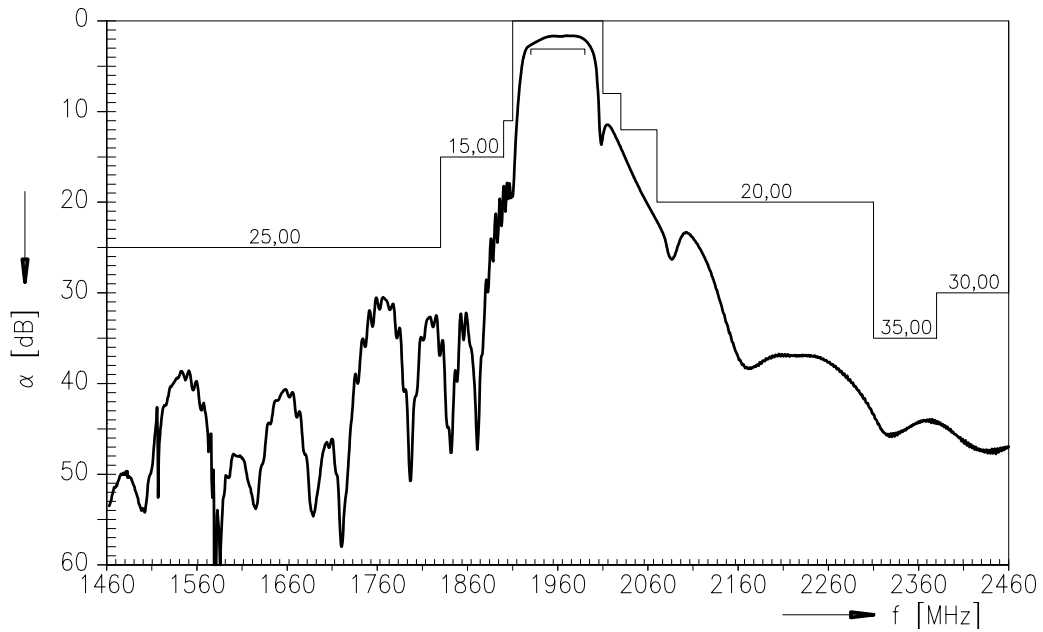
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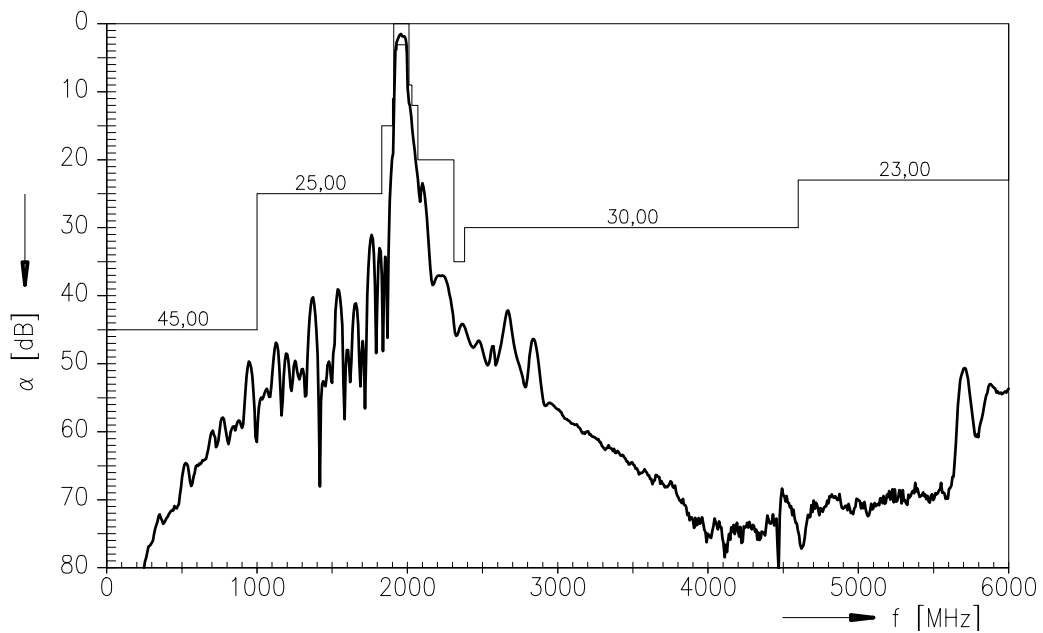
Data Sheet



Transfer function (spec at 25 °C)



Transfer function (wide band):⁴





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