EPCOS

# *SAW Components*

*Data Sheet B7631*

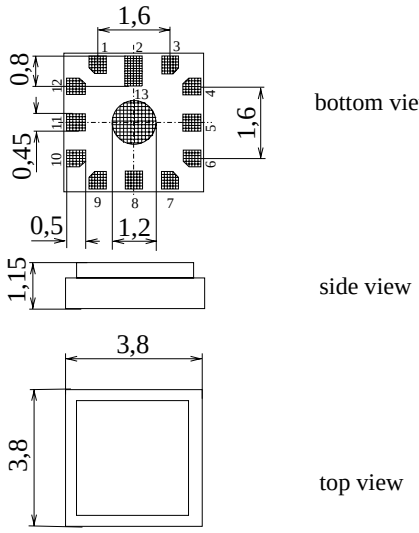


Data Sheet

Chip sized SAW package **QCS12F**

### Features

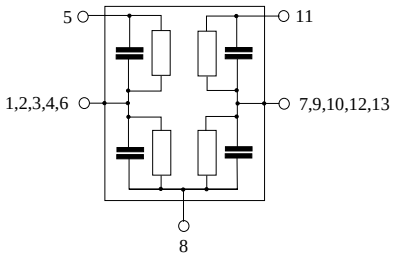
- Low-loss duplexer for Korean PCS mobile telephone systems
- 50 Ω ports by integrated matching network
- Multifunctional ceramic base material for **S**urface **M**ounted **T**echnology (**SMT**)
- Small size and low height




Dimensions in mm, approx. weight 0,08 g

### Pin configuration

| | |
|---|---|
| 11 | TX Input |
| 5 | RX Output |
| 8 | Antenna |
| 1, 2, 3, 4, 6 | Ground |
| 7, 9, 10, 12, 13 | Ground |




| Type | Ordering code | Marking and Package according to | Packing according to |
|---|---|---|---|
| B7631 | B39192-B7631-D910 | C61157-A3-A6 | F61074-V8194-Z000 |

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

### Maximum ratings

| | | | | |
|---|---|---|---|---|
| Operable temperature range | $T$ | – 30/+ 85 | ˚C | |
| Storage temperature range | $T_{stg}$ | – 40/+ 85 | ˚C | |
| DC voltage | $V_{DC}$ | 0 | V | |
| Input power max. | $P_{IN}$ | | | source and load impedance 50 Ω |
| 1750,0 ... 1780,0 MHz | | 28 | dBm | } continuous wave |
| elsewhere | | 10 | dBm | |

## Characteristics

Operating temperature range $T$ = 25 ± 2°C
ANT terminating impedance $Z_{ANT}$ = 50 Ω
RX terminating impedance $Z_{RX}$ = 50 Ω
TX terminating impedance $Z_{TX}$ = 50 Ω

| Characteristics TX - ANT | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Center frequency** | $f_c$ | — | 1765,00 | — | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | |
| 1750,00 ... 1780,00 MHz | | — | 2,0 | 2,3 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | |
| 1750,00 ... 1780,00 MHz | | — | 0,6 | 1,2 | dB |
| **Return loss** | | | | | |
| 1750,00 ... 1780,00 MHz | | 8,0 | 10,0 | — | dB |
| **Attenuation** | $\alpha$ | | | | |
| 1840,00 ... 1870,00 MHz | | 40 | 43 | — | dB |
| 2000,00 ... 3000,00 MHz | | 25 | 32 | — | dB |

| Characteristics ANT - RX | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Center frequency** | $f_c$ | — | 1855,00 | — | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | |
| 1840,00 ... 1870,00 MHz | | — | 2,6 | 3,3 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | |
| 1840,00 ... 1870,00 MHz | | — | 0,4 | 1,0 | dB |
| **Return loss** | | | | | |
| 1840,00 ... 1870,00 MHz | | 9,0 | 10,0 | — | dB |
| **Attenuation** | $\alpha$ | | | | |
| 1750,00 ... 1780,00 MHz | | 52 | 56 | — | dB |
| 2000,00 ... 3000,00 MHz | | 35 | 43 | — | dB |

| Characteristics TX - RX | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Isolation between TX and RX path** | $\alpha$ | | | | |
| 1750,00 ... 1780,00 MHz | | 55 | 59 | — | dB |
| 1840,00 ... 1870,00 MHz | | 43 | 45 | — | dB |

## Characteristics

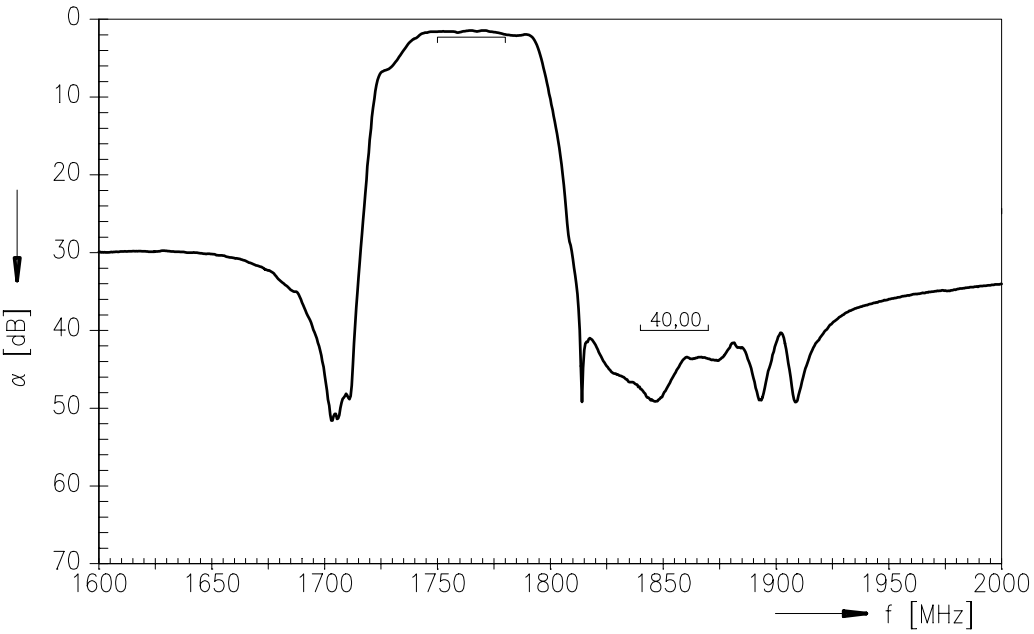
Operating temperature range $T$ = -30 to 85˚C
ANT terminating impedance $Z_{ANT}$ = 50 Ω
RX terminating impedance $Z_{RX}$ = 50 Ω
TX terminating impedance $Z_{TX}$ = 50 Ω

| Characteristics TX - ANT | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Center frequency** | $f_c$ | — | 1765,00 | — | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | |
| 1750,00 ... 1780,00 MHz | | — | 2,1 | 2,5 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | |
| 1750,00 ... 1780,00 MHz | | — | 0,8 | 1,5 | dB |
| **Return loss** | | | | | |
| 1750,00 ... 1780,00 MHz | | 8,0 | 10,0 | — | dB |
| **Attenuation** | $\alpha$ | | | | |
| 1840,00 ... 1870,00 MHz | | 40 | 43 | — | dB |
| 2000,00 ... 3000,00 MHz | | 25 | 32 | — | dB |

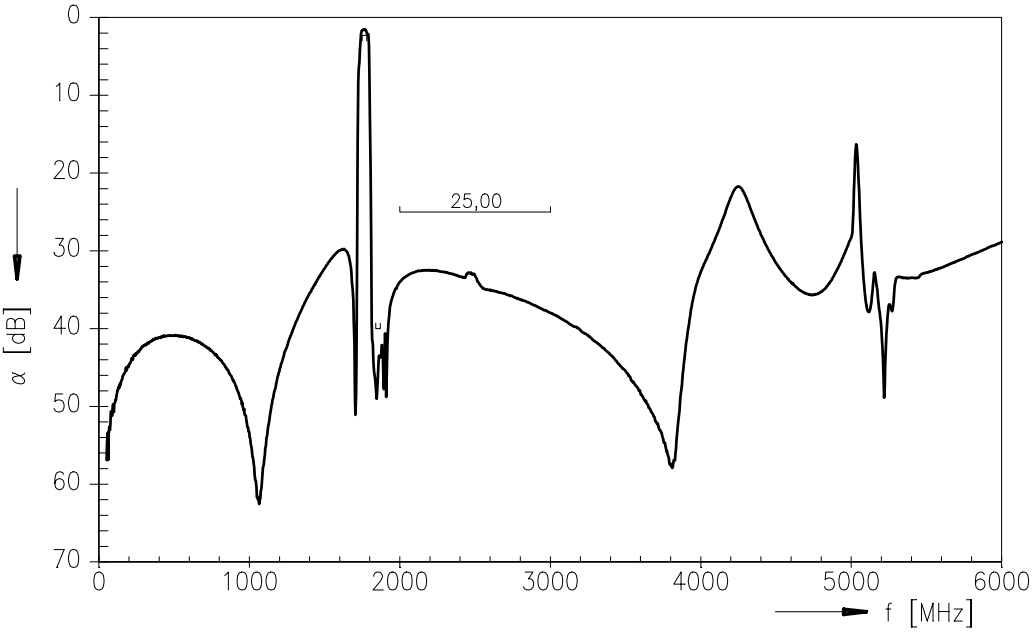
| Characteristics ANT - RX | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Center frequency** | $f_c$ | — | 1855,00 | — | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | |
| 1840,00 ... 1870,00 MHz | | — | 2,7 | 3,5 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | |
| 1840,00 ... 1870,00 MHz | | — | 0,5 | 1,3 | dB |
| **Return loss** | | | | | |
| 1840,00 ... 1870,00 MHz | | 9,0 | 10,0 | — | dB |
| **Attenuation** | $\alpha$ | | | | |
| 1750,00 ... 1780,00 MHz | | 52 | 55 | — | dB |
| 2000,00 ... 3000,00 MHz | | 35 | 43 | — | dB |

| Characteristics TX - RX | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Isolation between TX and RX path** | $\alpha$ | | | | |
| 1750,00 ... 1780,00 MHz | | 54 | 55 | — | dB |
| 1840,00 ... 1870,00 MHz | | 42 | 44 | — | dB |

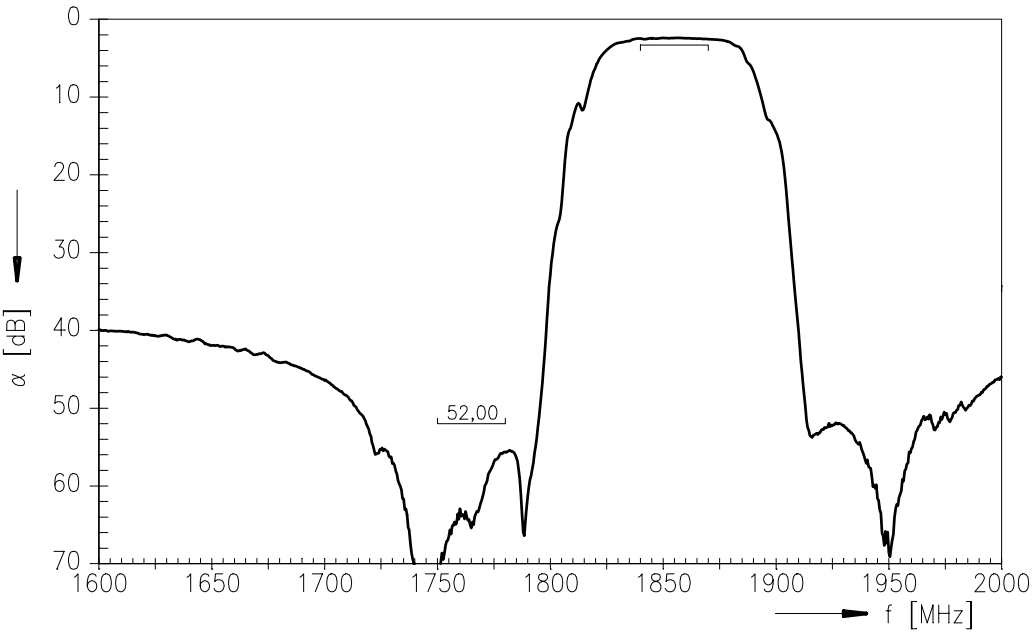
**Frequency Response TX - ANT**



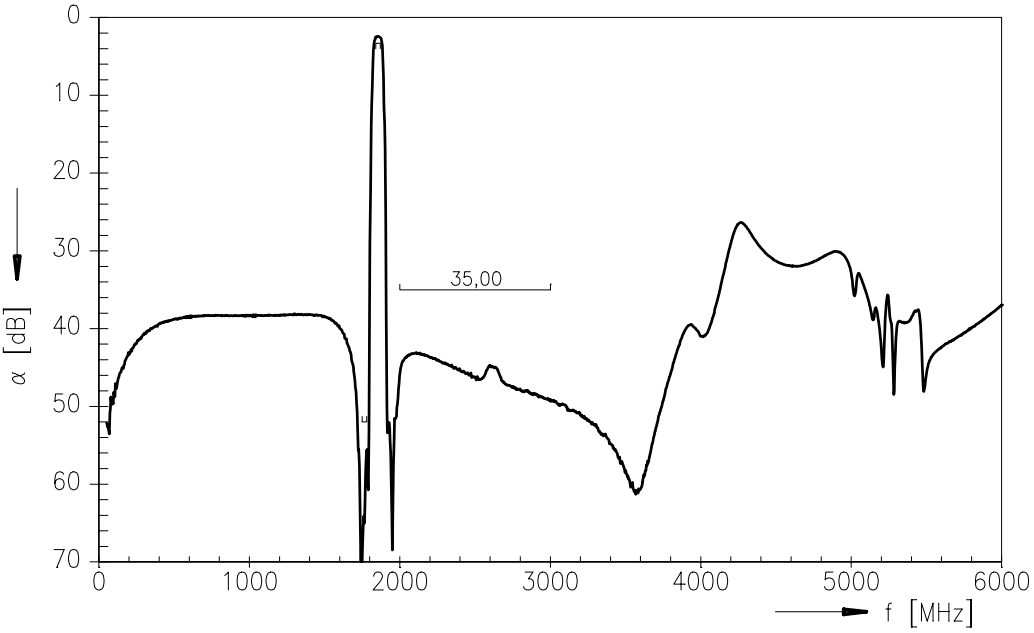

**Frequency Response TX - ANT (wideband)**



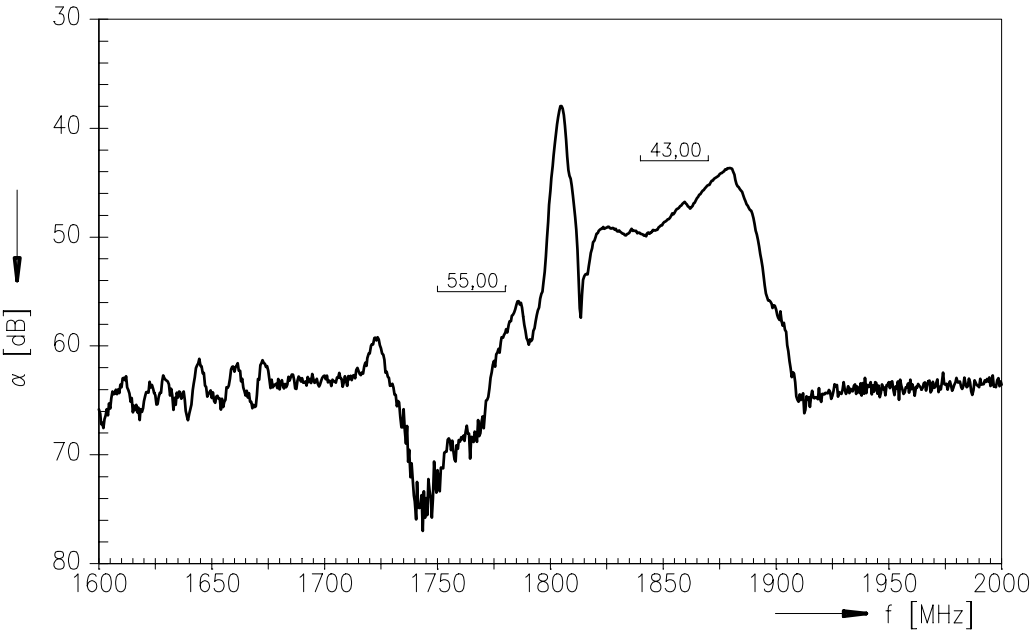
**Frequency Response ANT - RX**



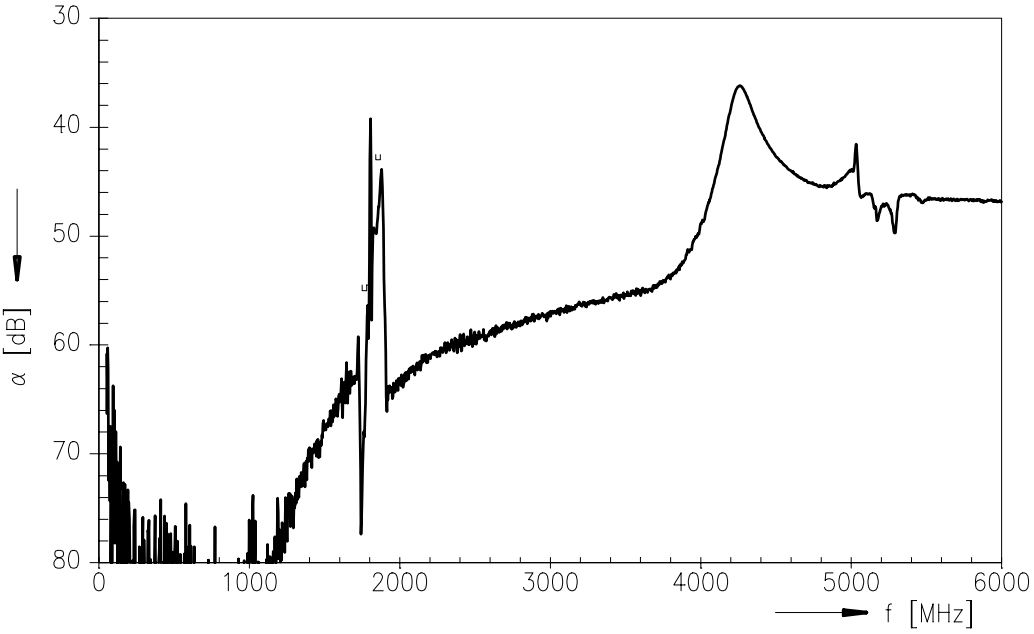

**Frequency Response ANT - RX (wideband)**



**Frequency Response TX - RX**




**Frequency Response TX - RX (wideband)**



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