EPCOS

# *SAW Components*

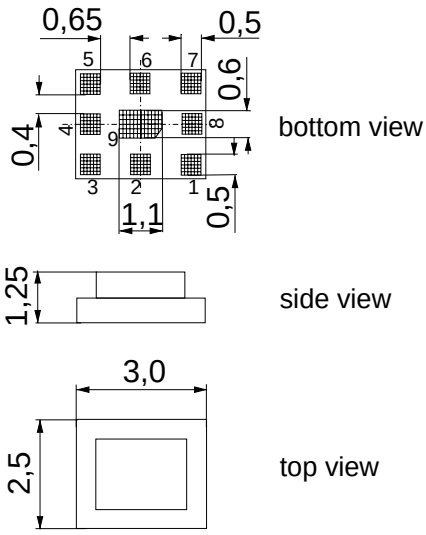
*Data Sheet B7639*



**C**hip **Si**zed **S**AW **P**ackage **QCS9L**

### Features

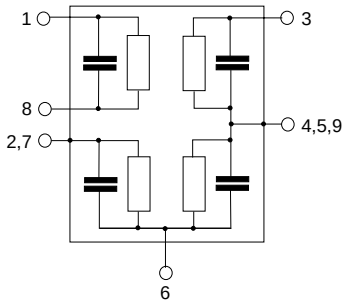
- Low-loss duplexer for cellular band mobile telephone systems
- fully matched by integrated matching network
- Package for **S**urface **M**ounted **T**echnology (**SMT**)
- Small size and low height
- Balanced Rx port, single ended Tx port
- Impedance transformation from 50 Ω to 100 Ω in Rx path




Dimensions in mm, approx. weight 0,035 g

### Pin configuration

| | |
|---|---|
| 3 | se. TX Input |
| 1,8 | bal. RX Output |
| 6 | Antenna |
| 2, 4, 5, 7, 9 | Ground |




| Type | Ordering code | Marking and Package according to | Packing according to |
|---|---|---|---|
| B7639 | B39881-B7639-P710 | C61157-A3-A19 | F61074-V8211-Z000 |

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

### Maximum ratings

| | | | | |
|---|---|---|---|---|
| Operating temperature range | $T$ | – 25/+ 85 | ˚C | |
| Storage temperature range | $T_{stg}$ | – 40/+ 85 | ˚C | |
| DC voltage | $V_{DC}$ | 5 | V | |
| ESD voltage | $V_{ESD}$ | 100[1)] | V | |
| Input power max. | $P_{IN}$ | | | source and load impedance 50 Ω |
| 824,0 ... 849,0 MHz | | 27 | dBm | } continuous wave |
| elsewhere | | 10 | dBm | $T$ = 55˚C, 50.000 h |

1) -acc. toJESD22-115A (Machine Model), 10 negatie & 10 positive pulses

## Characteristics

Operating temperature range $T$ = -15 to +80˚C
ANT terminating impedance $Z_{ANT}$ = 50 Ω
RX terminating impedance $Z_{RX}$ = 100 Ω (balanced)
TX terminating impedance $Z_{TX}$ = 50 Ω

| Characteristics TX - ANT | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Center frequency** | $f_c$ | — | 836,50 | — | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | |
| 824,00 ... 849,00 MHz | | — | 2,4 | 2,8 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | |
| 824,00 ... 849,00 MHz | | — | 0,9 | 1,3 | dB |
| **Return loss** | | | | | |
| 824,00 ... 849,00 MHz | | 10,0 | 11,5 | — | dB |
| **Attenuation** | $\alpha$ | | | | |
| 100,00 ... 779,00 MHz | | 30 | 39 | — | dB |
| 779,00 ... 804,00 MHz | | 30 | 37 | — | dB |
| 869,00 ... 894,00 MHz | | 45 | 49 | — | dB |
| 1550,00 ... 1600,00 MHz | | 35 | 39 | — | dB |
| 1648,00 ... 1698,00 MHz | | 30 | 37 | — | dB |
| 2400,00 ... 2547,00 MHz | | 18 | 22 | — | dB |
| 2547,00 ... 6000,00 MHz | | — | 3,0 | — | dB |

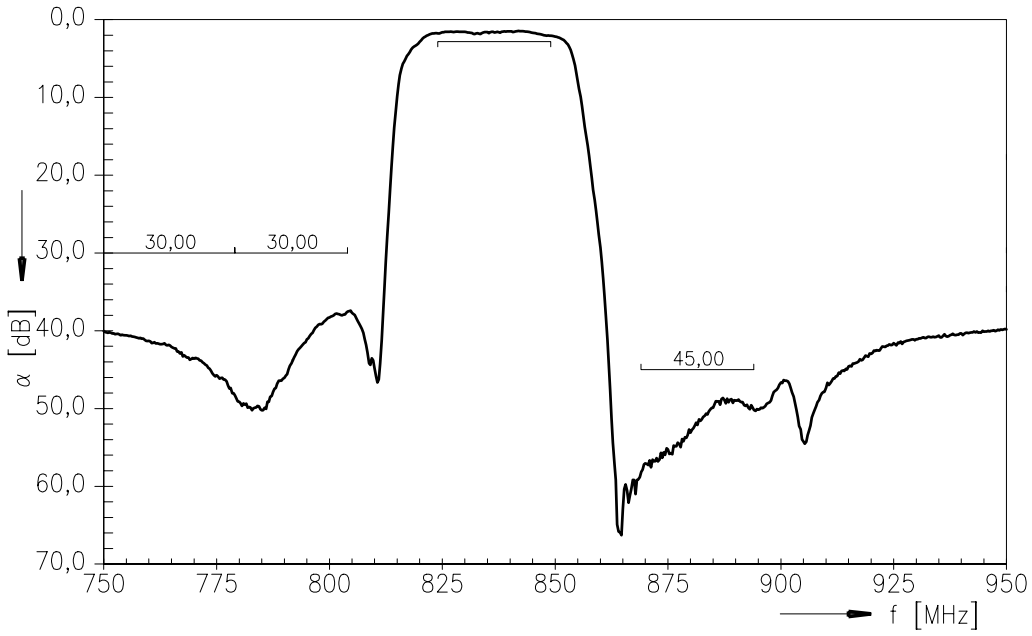
## Characteristics

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RX terminating impedance $Z_{RX}$ = 100 Ω (balanced)
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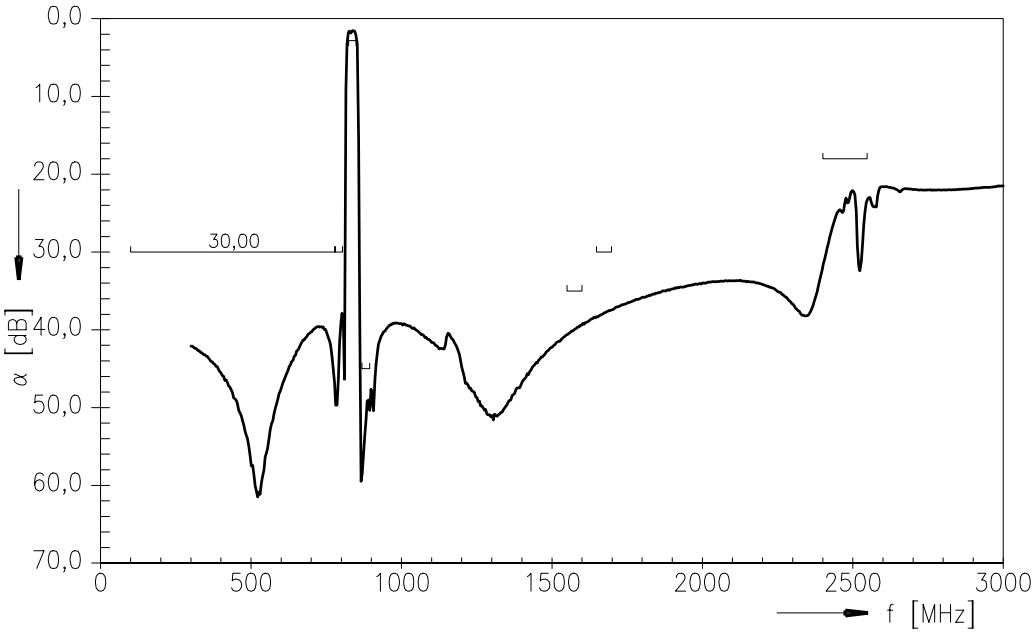
| Characteristics ANT - RX | | | min. | typ. | max. | |
|---|---|---|---|---|---|---|
| **Center frequency** | | $f_c$ | — | 881,50 | — | MHz |
| **Maximum insertion attenuation** | | $\alpha_{max}$ | | | | |
| | 869,00 ... 894,00 MHz | | — | 2,3 | 3,0 | dB |
| **Amplitude ripple** (p-p) | | $\Delta\alpha$ | | | | |
| | 869,00 ... 894,00 MHz | | — | 0,8 | 1,5 | dB |
| **Return loss** | | | | | | |
| | 869,00 ... 894,00 MHz | | 7,0 | 8,5 | — | dB |
| **Attenuation** | | $\alpha$ | | | | |
| | 100,00 ... 779,00 MHz | | 40 | 56 | — | dB |
| | 779,00 ... 824,00 MHz | | 40 | 53 | — | dB |
| | 824,00 ... 849,00 MHz | | 47 | 50 | — | dB |
| | 849,00 ... 854,00 MHz | | 30 | 35 | — | dB |
| | 914,00 ... 1693,00 MHz | | 30 | 35 | — | dB |
| | 1693,00 ... 1788,00 MHz | | 40 | 57 | — | dB |
| | 1788,00 ... 2400,00 MHz | | 40 | 56 | — | dB |
| | 2400,00 ... 2500,00 MHz | | 40 | 48 | — | dB |
| | 2500,00 ... 2682,00 MHz | | 40 | 47 | — | dB |
| | 2682,00 ... 5000,00 MHz | | 35 | 43 | — | dB |
| | 5150,00 ... 5825,00 MHz | | — | 46 | — | dB |
| | 5825,00 ... 6000,00 MHz | | — | 44 | — | dB |

| Characteristics TX - RX | | | min. | typ. | max. | |
|---|---|---|---|---|---|---|
| **Isolation between TX and RX path** | | $\alpha$ | | | | |
| | 824,00 ... 849,00 MHz | | 49 | 53 | — | dB |
| | 869,00 ... 894,00 MHz | | 45 | 50 | — | dB |

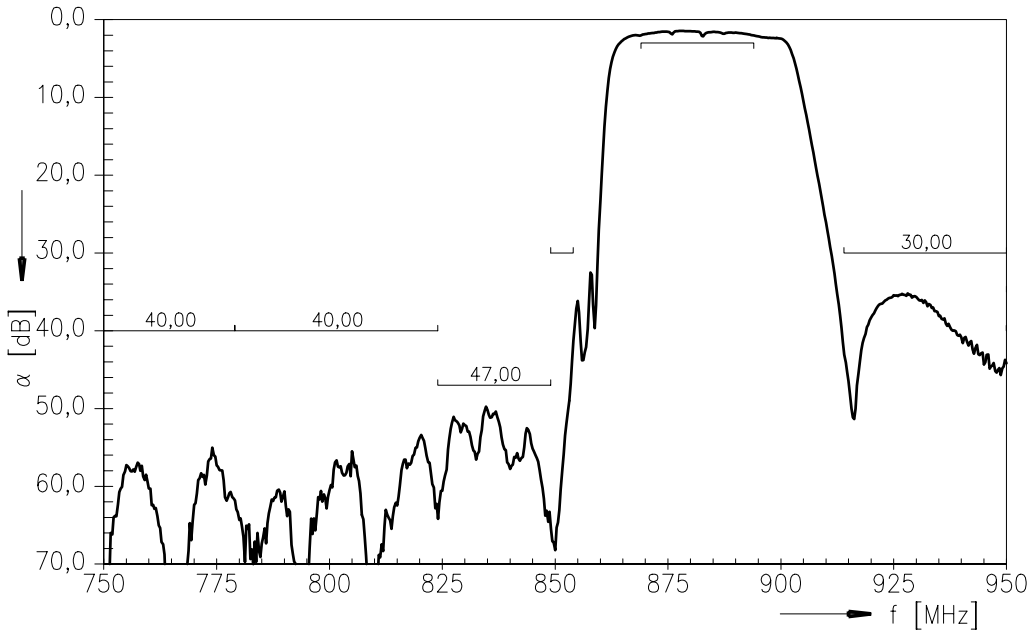
**Frequency Response TX - ANT**



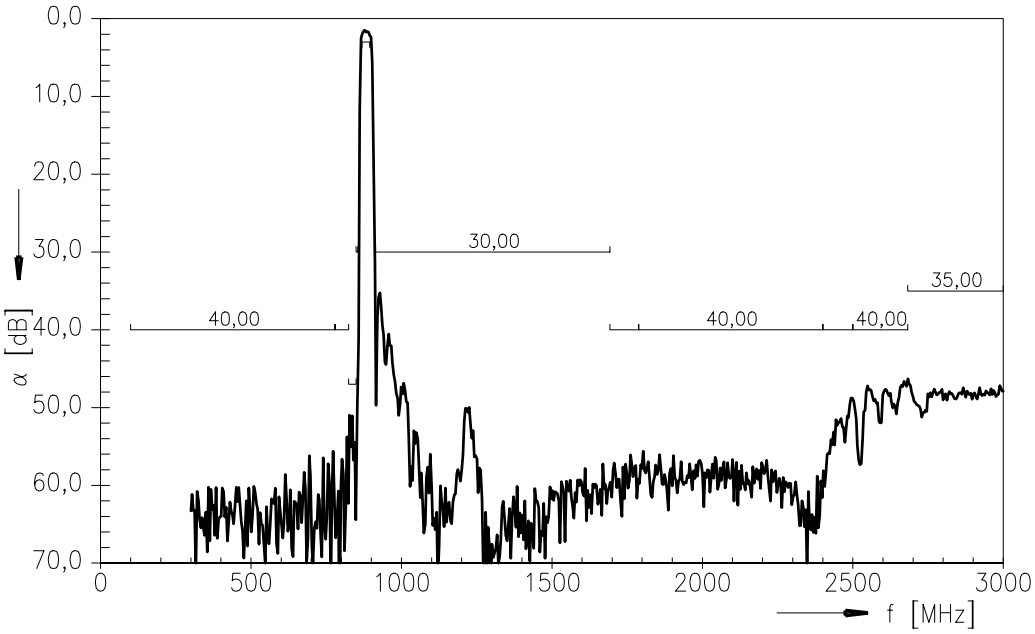

**Frequency Response TX - ANT (wideband)**



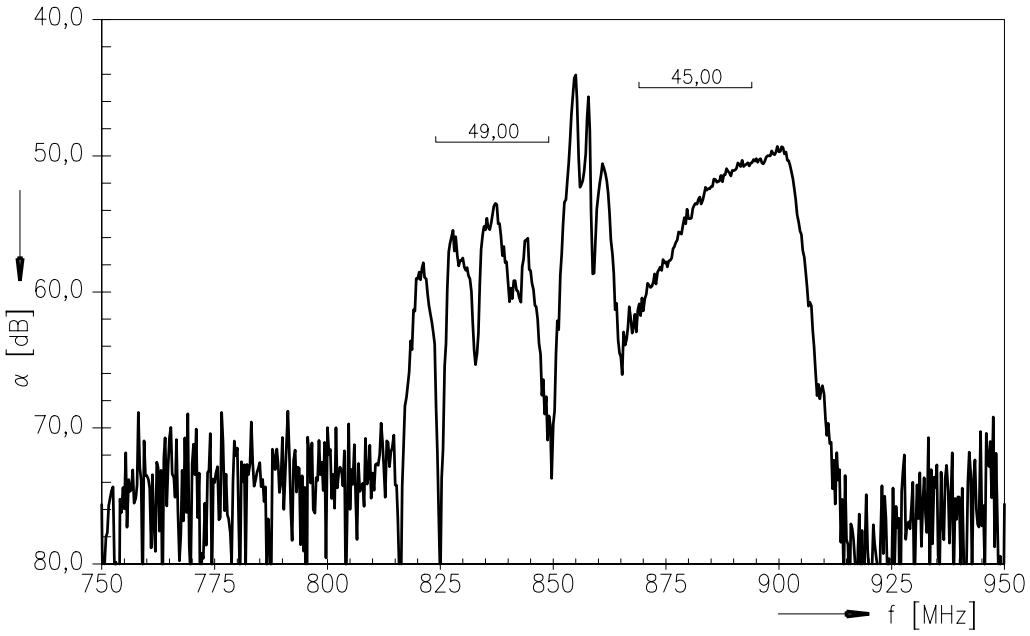
**Frequency Response ANT - RX**



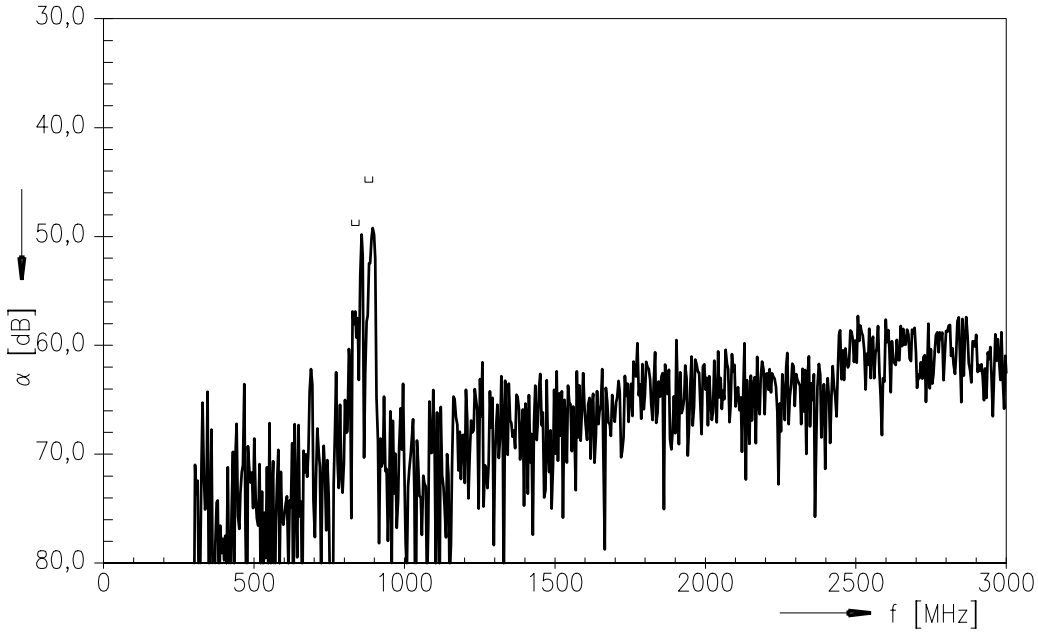

**Frequency Response ANT - RX (wideband)**



**Frequency Response TX - RX**




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



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