



# SAW Components

## SAW Tx filter

Cellular / WCDMA Band V

|                       |                        |
|-----------------------|------------------------|
| <b>Series/type:</b>   | <b>B9425</b>           |
| <b>Ordering code:</b> | <b>B39841B9425M410</b> |
| <b>Date:</b>          | <b>May 11, 2006</b>    |
| <b>Version:</b>       | <b>2.0</b>             |

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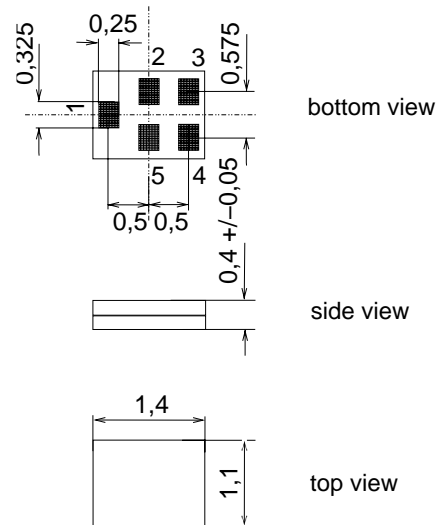
**Data Sheet**

**Application**

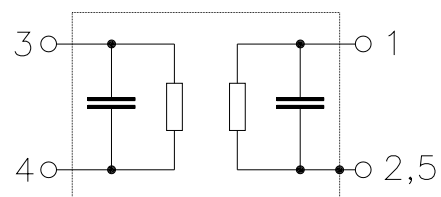
- Low-loss RF filter for mobile telephone Cellular systems, transmit path (TX)
- Impedance 50 Ω input and output
- Unbalanced / unbalanced operation
- Very high RX suppression
- Usable passband 25 MHz


**Features**

- Package size 1.4 x 1.1 x 0.4 mm<sup>3</sup>
- Package code QCS5I
- RoHS compatible
- Approximate weight 0.003 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)


**Pin configuration**

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



**Data Sheet**

**Characteristics**

|                                      |                       |
|--------------------------------------|-----------------------|
| Temperature range for specification: | T = -30 °C to +85 °C  |
| Terminating source impedance:        | Z <sub>S</sub> = 50 Ω |
| Terminating load impedance:          | Z <sub>L</sub> = 50 Ω |

|                                      |                  | min.             | typ.<br>@ 25 °C | max. |     |
|--------------------------------------|------------------|------------------|-----------------|------|-----|
| <b>Center frequency</b>              | f <sub>C</sub>   | —                | 836.5           | —    | MHz |
| <b>Maximum insertion attenuation</b> | α <sub>max</sub> |                  |                 |      |     |
| 824.0 ... 849.0 MHz                  |                  | —                | 1.7             | 2.3  | dB  |
| <b>Amplitude ripple (p-p)</b>        | Δα               |                  |                 |      |     |
| 824.0 ... 849.0 MHz                  |                  | —                | 0.7             | 1.3  | dB  |
| <b>Input VSWR</b>                    |                  |                  |                 |      |     |
| 824.0 ... 849.0 MHz                  |                  | —                | 1.7             | 2.0  |     |
| <b>Output VSWR</b>                   |                  |                  |                 |      |     |
| 824.0 ... 849.0 MHz                  |                  | —                | 1.7             | 2.0  |     |
| <b>Attenuation</b>                   | α                |                  |                 |      |     |
| 0.0 ... 779.0 MHz                    |                  | 45               | 47              | —    | dB  |
| 779.0 ... 804.0 MHz                  |                  | 40               | 44              | —    | dB  |
| 804.0 ... 814.0 MHz                  |                  | 12 <sup>1)</sup> | 19              | —    | dB  |
| 859.0 ... 869.0 MHz                  |                  | 7 <sup>2)</sup>  | 14              | —    | dB  |
| 869.0 ... 894.0 MHz                  |                  | 40               | 42              | —    | dB  |
| 894.0 ... 1570.0 MHz                 |                  | 33               | 35              | —    | dB  |
| 1570.0 ... 2200.0 MHz                |                  | 35               | 42              | —    | dB  |
| 2200.0 ... 6000.0 MHz                |                  | 33               | 38              | —    | dB  |

1) for -15 °C to 80 °C

2) for -15 °C to 80 °C

**Maximum ratings**

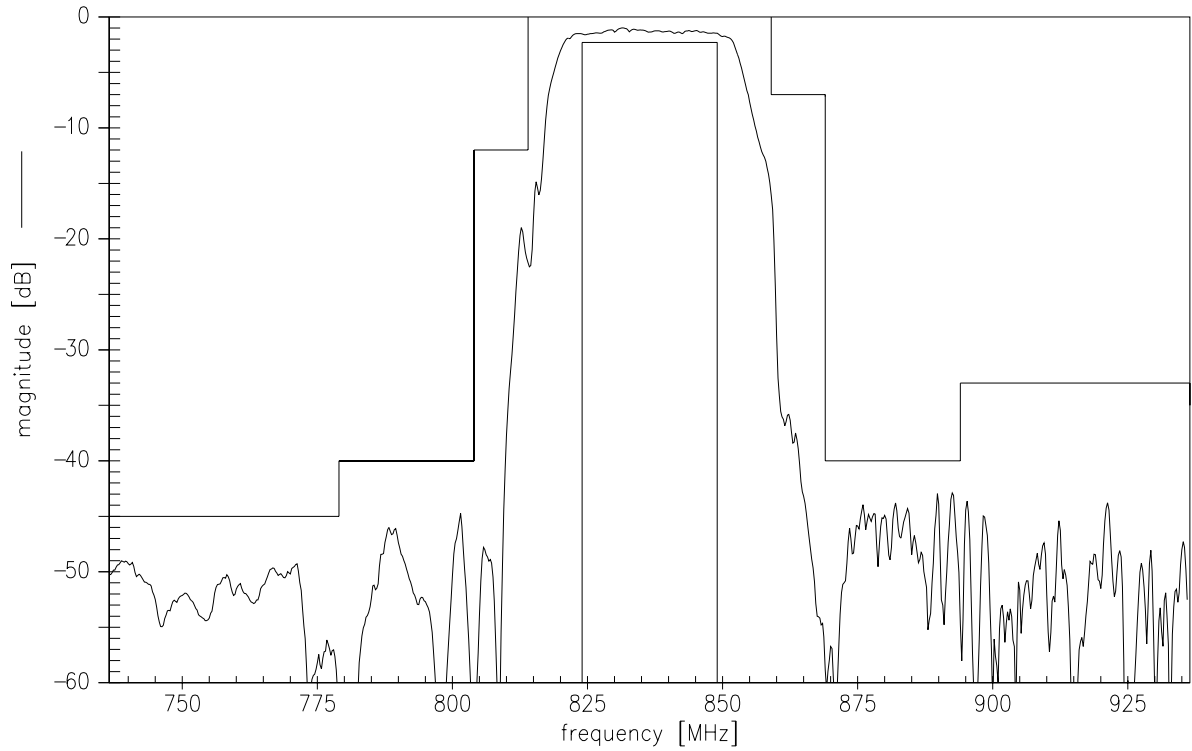
|                            |                  |                   |     |                          |
|----------------------------|------------------|-------------------|-----|--------------------------|
| Operable temperature range | T                | -40/+85           | °C  |                          |
| Storage temperature range  | T <sub>stg</sub> | -40/+85           | °C  |                          |
| DC voltage                 | V <sub>DC</sub>  | 5                 | V   |                          |
| ESD voltage                | V <sub>ESD</sub> | 100 <sup>1)</sup> | V   | Machine model, 10 pulses |
| Input Power                |                  |                   |     |                          |
| 824 - 849 MHz              | P <sub>IN</sub>  | 16                | dBm | source impedance 50 Ω    |
| elsewhere                  | P <sub>IN</sub>  | 10                | dBm | source impedance 50 Ω    |

1) acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.

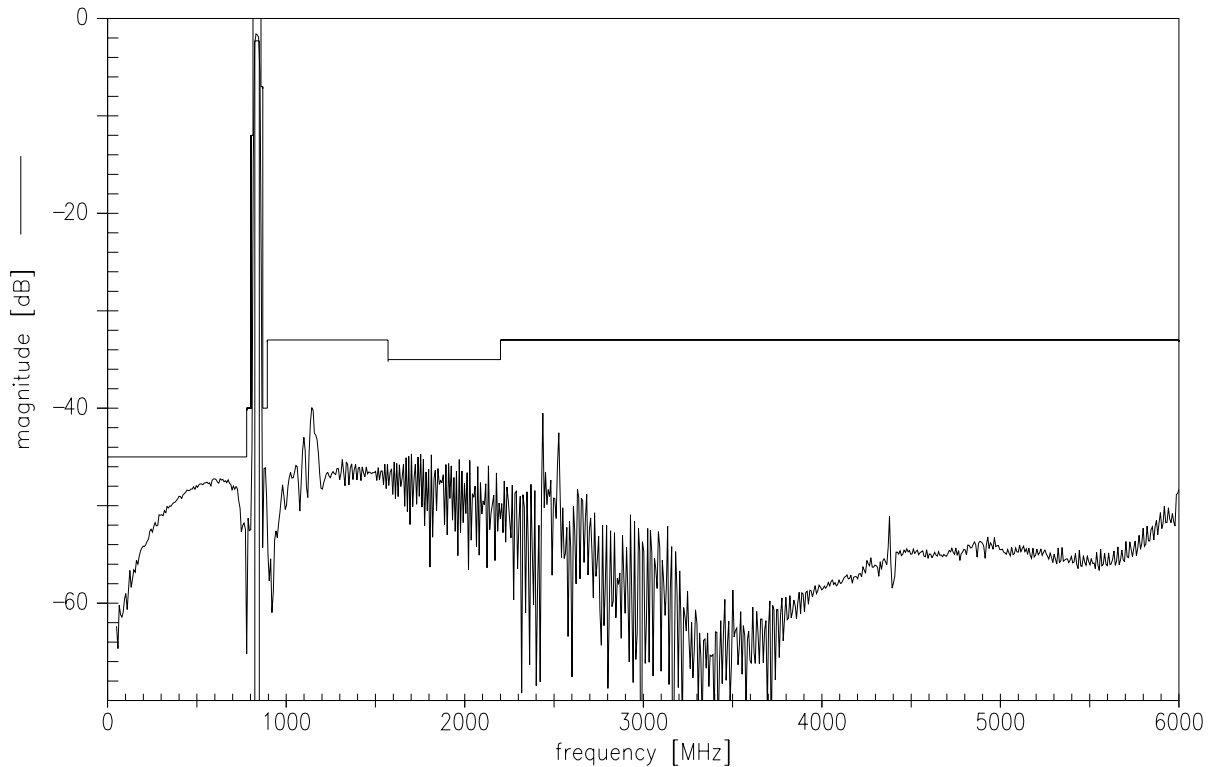
Data Sheet



**Transfer function**



**Transfer function (wideband)**



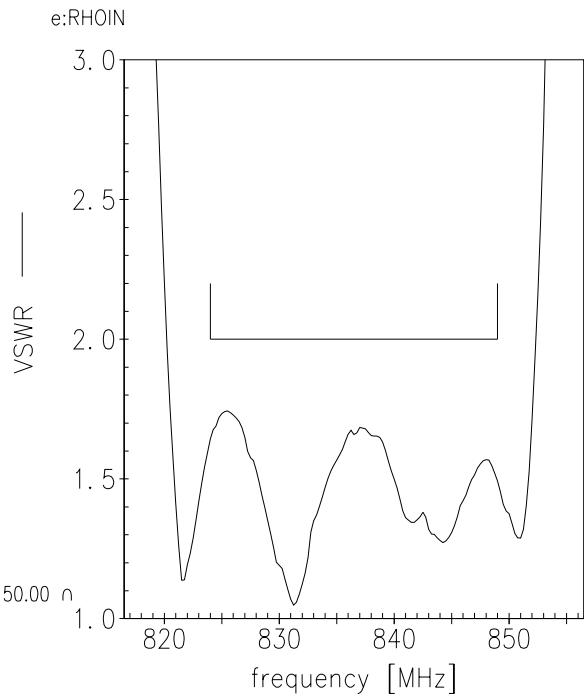
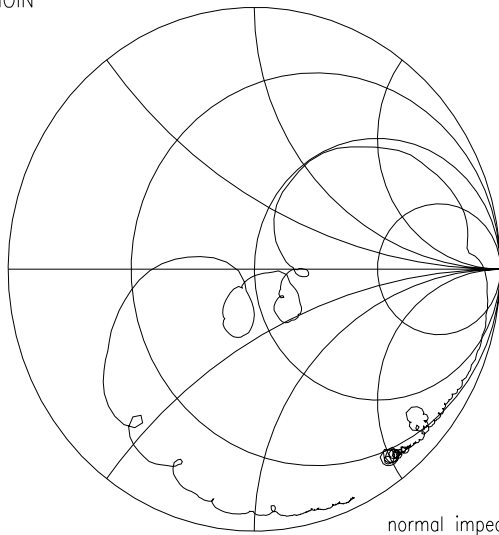
Data Sheet



Smith charts

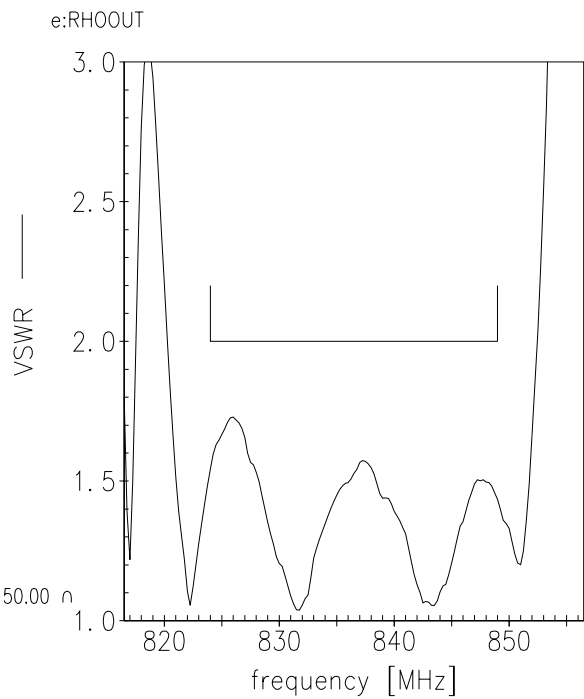
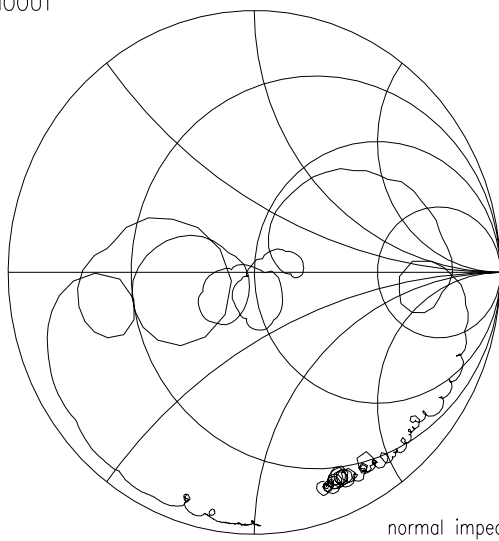
**S<sub>11</sub> function**

e:RHOIN



**S<sub>22</sub> function**

e:RHOOUT



|                       |                  |
|-----------------------|------------------|
| <b>SAW Components</b> | <b>B9425</b>     |
| <b>SAW Tx filter</b>  | <b>836.5 MHz</b> |

Data Sheet



## References

|                            |  |
|----------------------------|--|
| <b>Type</b>                | B9425  |
| <b>Ordering code</b>       | B39841B9425M410  |
| <b>Marking and package</b> | C61157-A8-A3   |
| <b>Packaging</b>           | F61074-V8212-Z000  |
| <b>Date codes</b>          | L_1126   |
| <b>S-parameters</b>        | B9425_NB.s2p<br>B9425_WB.s2p   |
| <b>Soldering profile</b>   | S_6001   |
| <b>RoHS compatible</b>     | defined as compatible with the following documents:<br>"DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment." |
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