



RF360 Europe GmbH

A Qualcomm – TDK Joint Venture

SAW Components

SAW Rx Filter

Trunked Radio

| | |
|----------------|-----------------|
| Series/type: | B5046 |
| Ordering code: | B39821B5046U510 |
| Date: | March 13, 2007 |
| Version: | 2.0 |

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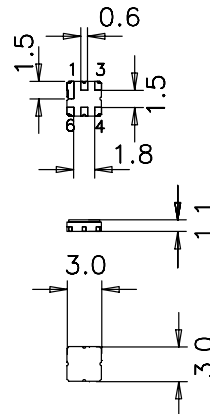
Data Sheet

Application

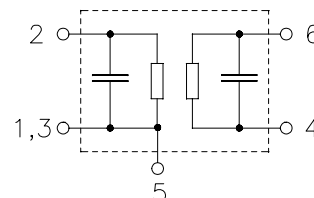
- Low-loss filter (RX) for Trunked Radio
- Usable bandwidth 19 MHz
- No matching required for operation at 50 Ω
- Unbalanced to unbalanced or unbalanced to balanced operation
- Filter impedance 50 Ω

Features

- Package size 3.0 x 3.0 x 1.1 mm³
- Package code DCC6D
- Approx. weight 0.037 g
- Package for **Surface Mount Technology (SMT)**
- Hermetically sealed ceramic package
- RoHS compliant
- Ni, gold-plated
- **Electrostatic Sensitive Device (ESD)**


Pin configuration

- 2 Input
- 6 Output / Output balanced
- 4 Output ground / Output balanced
- 1, 3, 5 Input ground / Case ground



Data Sheet

Characteristics

Temperature range for specification: $T = -30$ to $+70$ °C
 Terminating source impedance: $Z_S = 50 \Omega$
 Terminating load impedance: $Z_L = 50 \Omega$ (balanced)

| | | min. | typ. @ 25 °C | max. | |
|---|---|------|-----------------|-------------------|-------|
| Center frequency | f_C | — | 815.5 | — | MHz |
| Maximum insertion attenuation | α_{\max} | — | 2.6 | 4.5 ¹⁾ | dB |
| 806.0 ... 825.0 MHz | | | | | |
| Amplitude ripple (p-p) | $\Delta\alpha$ | — | 0.9 | 2.5 ²⁾ | dB |
| 806.0 ... 825.0 MHz | | | | | |
| Input VSWR | | — | 1.3 | 2.0 | |
| 806.0 ... 825.0 MHz | | | | | |
| Output VSWR | | — | 1.3 | 2.0 | |
| 806.0 ... 825.0 MHz | | | | | |
| Attenuation | α | | | | |
| 0.1 ... 663.0 MHz | | 44 | 47 | — | dB |
| 663.0 ... 789.0 MHz | | 30 | 39 | — | dB |
| 789.0 ... 796.0 MHz | | 13 | 32 | — | dB |
| 850.0 ... 900.0 MHz | | 20 | 26 | — | dB |
| 900.0 ... 1600.0 MHz | | 30 | 33 | — | dB |
| 1600.0 ... 2313.0 MHz | | 24 | 27 | — | dB |
| 2313.0 ... 3500.0 MHz | | 20 | 23 | — | dB |
| 3500.0 ... 4000.0 MHz | | 7 | 23 | — | dB |
| Amplitude balance | (S_{31}/S_{21}) | — | -0.1 / +1.0 | -0.8 / +1.2 | dB |
| 806.0 ... 825.0 MHz | | | | | |
| Phase balance | $(\phi(S_{31}) - \phi(S_{21}) + 180^\circ)$ | — | -/+ 3 | -/+ 10 | ° |
| 806.0 ... 825.0 MHz | | | | | |
| Temperature coefficient of frequency | TC_f | — | -36 | — | ppm/K |

¹⁾ 3.5 dB at +15 to +35 °C.

²⁾ 1.5 dB at +15 to +35 °C.

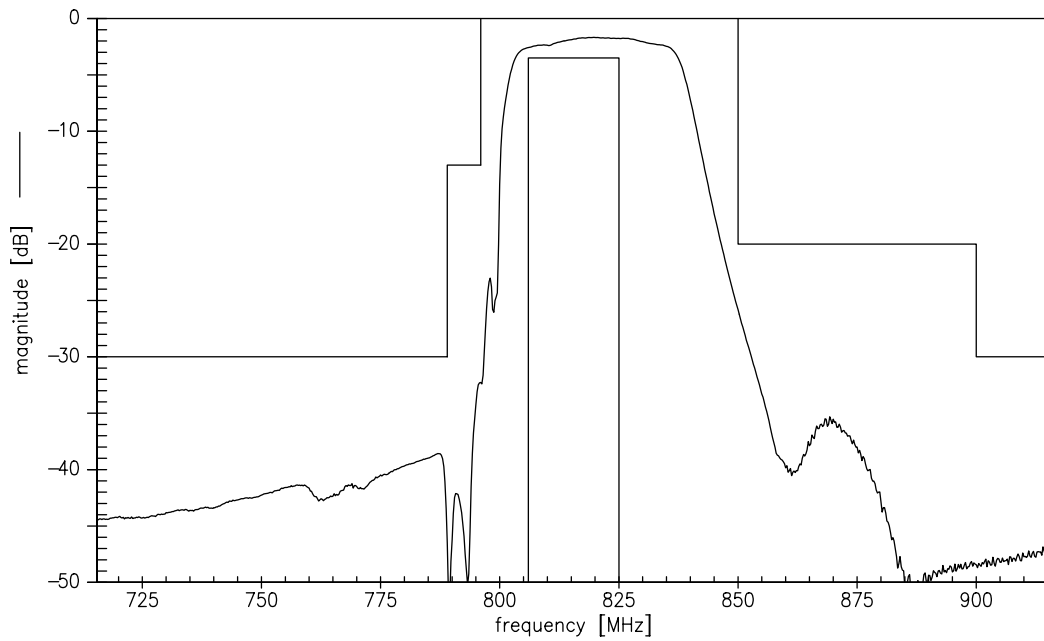

Maximum ratings

| | | | | |
|---------------------------------------|------------------|-------------------|-----|--------------------------|
| Operable temperature range | T | -40 / +85 | °C | |
| Storage temperature range | T _{stg} | -40 / +85 | °C | |
| DC voltage | V _{DC} | 5 | V | |
| ESD voltage | V _{ESD} | 100 ¹⁾ | V | machine model, 10 pulses |
| Input Power at 806.0 ... 825.0 MHz | P _{IN} | 15 | dBm | continuous wave |

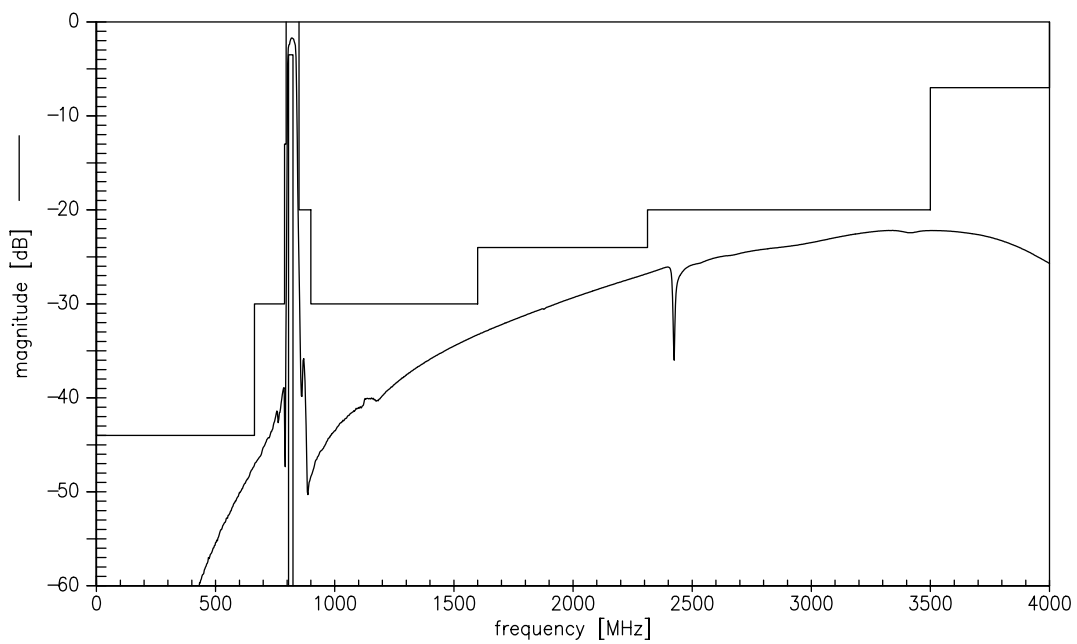
¹⁾ acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



Transfer function (narrowband)



Transfer function (wideband)

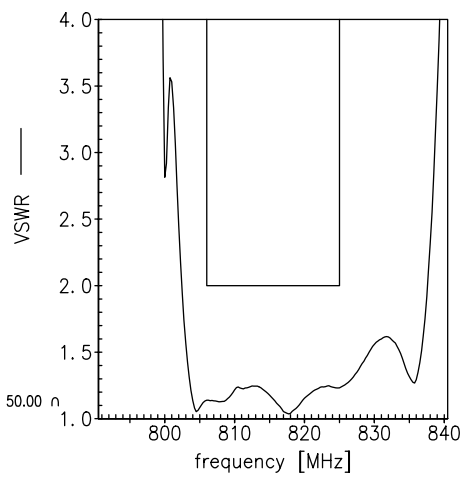
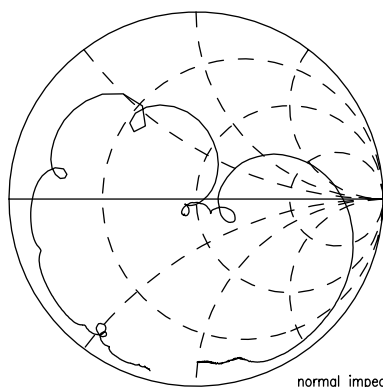


Data Sheet

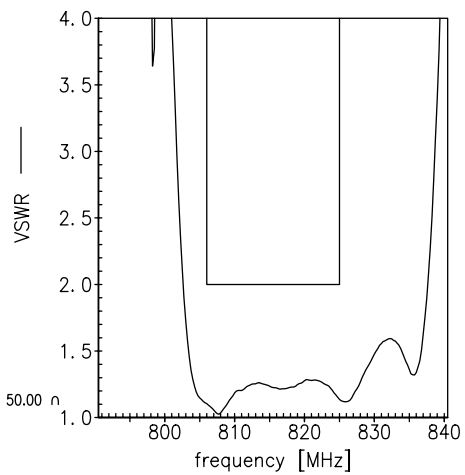
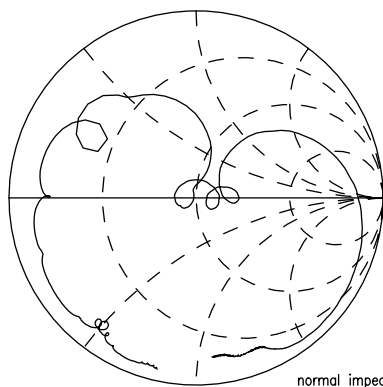


Smith chart

S_{11} function

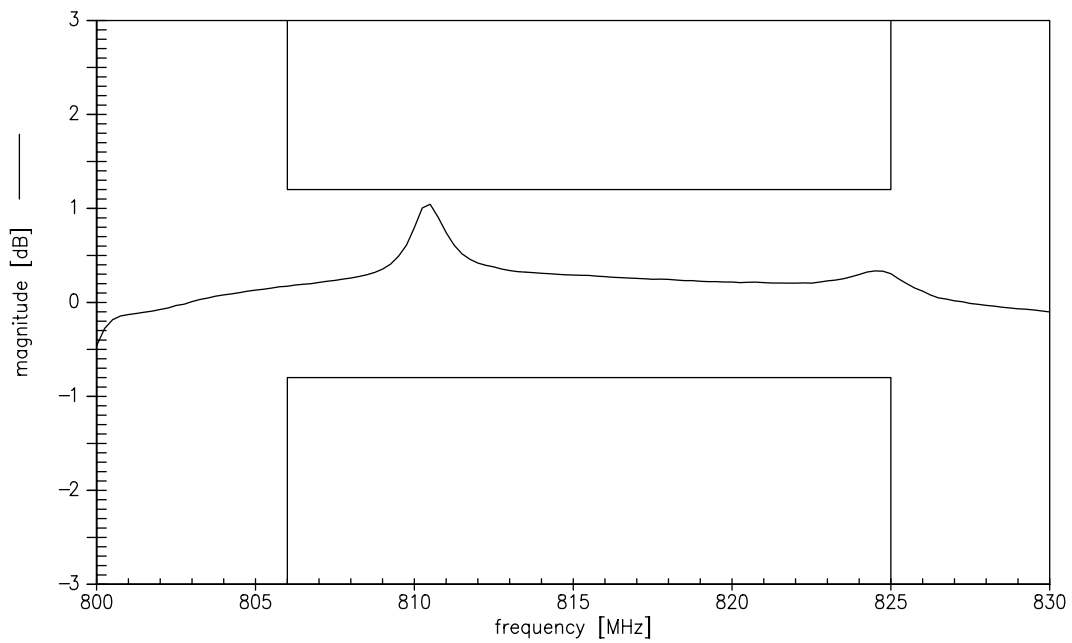


S_{22} function

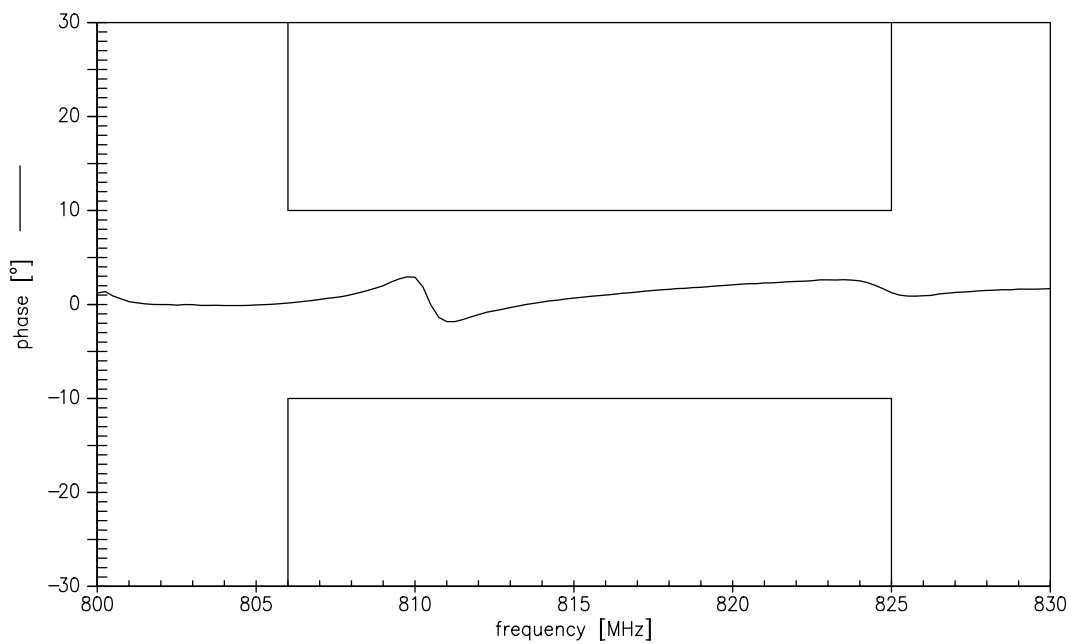




Amplitude balance



Phase balance



SAW Components
B5046
SAW Rx Filter
815.5 MHz

Data Sheet


References

| | |
|----------------------------|--|
| Type | B5046 |
| Ordering code | B39821B5046U510 |
| Marking and package | C61157-A7-A68 |
| Packaging | F61074-V8168-Z000 |
| Date codes | L_1126 |
| S-parameters | B5046_NB.s3p B5046_WB.s3p |
| Soldering profile | S_6001 |
| RoHS compatible | defined as compatible with the following documents: "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." |

For further information please contact your local EPCOS sales office or visit our webpage at www.epcos.com.

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Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: ocean@oceanchips.ru

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А