



SAW Components

SAW RF filter for base stations

GSM RF Filter

| | |
|-----------------------|------------------------|
| Series/type: | B4125 |
| Ordering code: | B39881B4125U410 |
| Date: | Mar 05, 2015 |
| Version: | 2.3 |

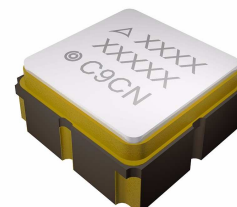
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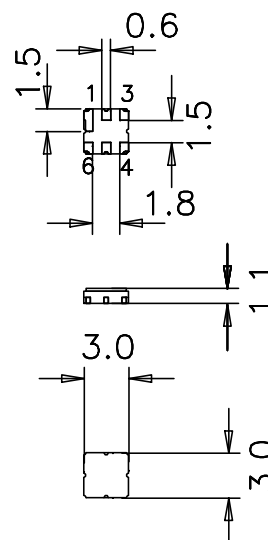
Data sheet

Application

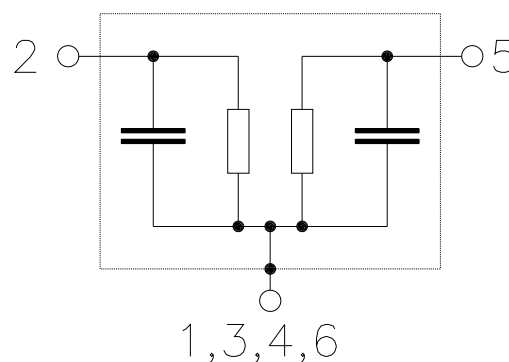
- RF filter for band 5 downlink
- Unbalanced to unbalanced operation
- Low amplitude ripple
- Usable passband 25 MHz
- No matching required for operation at 50 Ω


Features

- Package size 3.0 x 3.0 x 1.1 mm³
- Package code DCC6C
- RoHS compatible
- Approximate weight 0.037 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitivity Level 1**
- Filter surface passivated


Pin configuration

- 2 Input
- 5 Output
- 1, 3, 4, 6 To be grounded



Data sheet


Characteristics

Temperature range for specification: $T = -40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

| | | min. | typ. @ 25 °C | max. | |
|--------------------------------------|-----------------|------|-----------------|-------|-----|
| Centre frequency | f_C | — | 881.5 | — | MHz |
| Maximum insertion attenuation | α_{\max} | | | | |
| 869.0 ... 894.0 MHz | | — | 2.6 | 3.0 | dB |
| Amplitude ripple (p-p) | $\Delta\alpha$ | | | | |
| 869.0 ... 894.0 MHz | | — | 1.1 | 1.5 | dB |
| Input VSWR | | | | | |
| 869.0 ... 894.0 MHz | | — | 1.4:1 | 1.6:1 | |
| Output VSWR | | | | | |
| 869.0 ... 894.0 MHz | | — | 1.4:1 | 1.6:1 | |
| Attenuation | α | | | | |
| 00.0 ... 824.0 MHz | | 35.0 | 50.0 | — | dB |
| 824.0 ... 849.0 MHz | | 35.0 | 45.0 | — | dB |
| 970.0 ... 997.0 MHz | | 35.0 | 60.0 | — | dB |
| 997.0 ... 1150.0 MHz | | 40.0 | 60.0 | — | dB |
| 1150.0 ... 1500.0 MHz | | 30.0 | 50.0 | — | dB |
| 1500.0 ... 2000.0 MHz | | 25.0 | 38.0 | — | dB |
| 2000.0 ... 6000.0 MHz | | 20.0 | 25.0 | — | dB |

Data sheet


Characteristics

Temperature range for specification: $T = -40\text{ °C to }+105\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

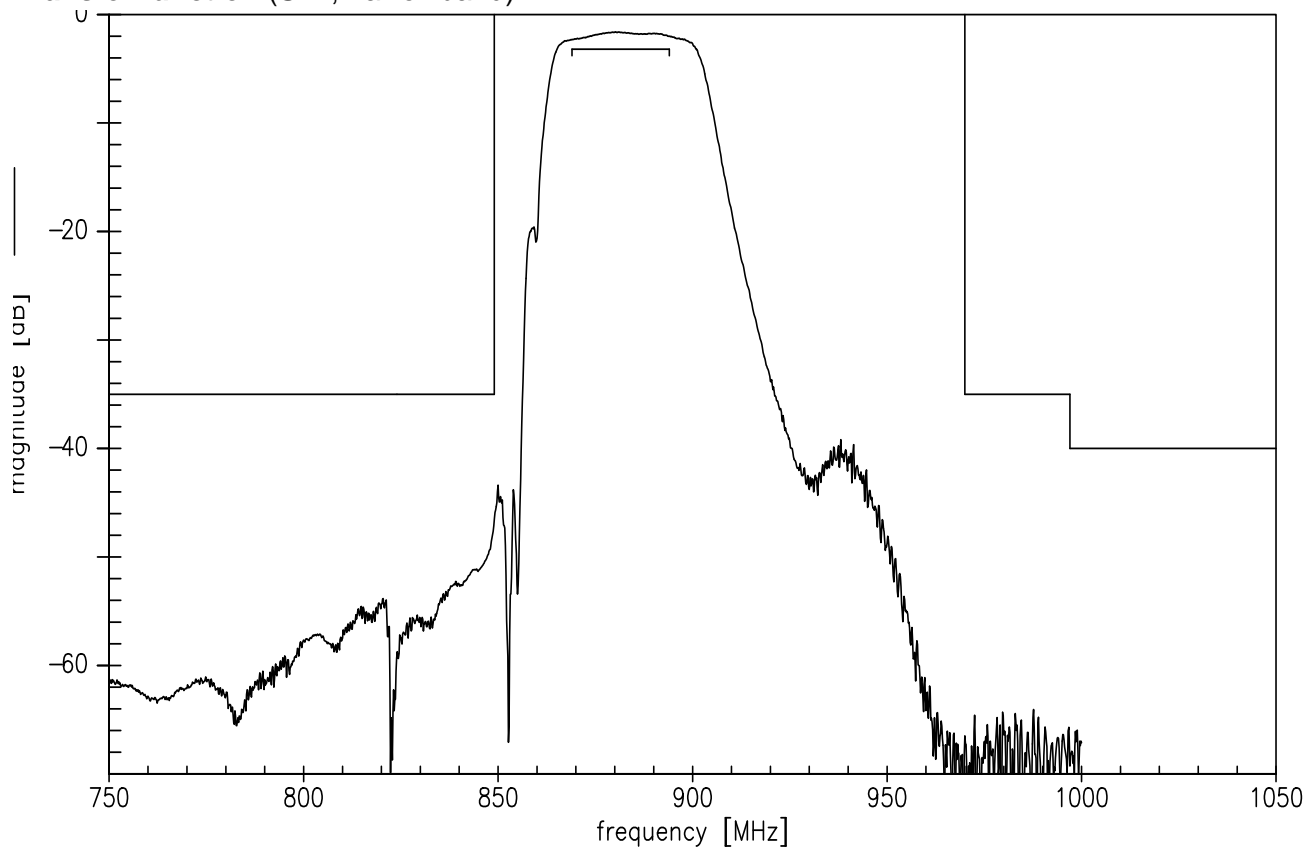
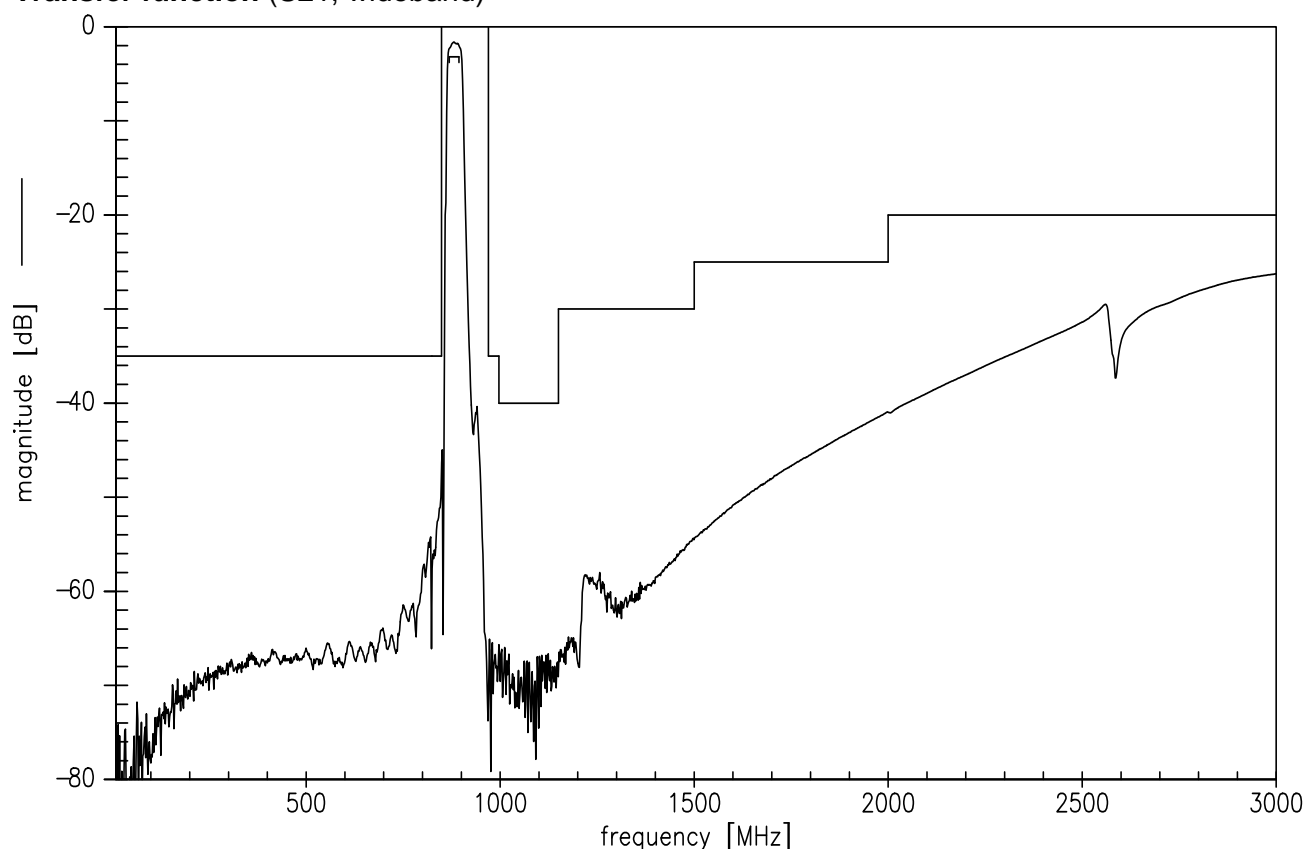
| | | min. | typ. @ 25 °C | max. | |
|--------------------------------------|-----------------|------|-----------------|-------|-----|
| Centre frequency | f_C | — | 881.5 | — | MHz |
| Maximum insertion attenuation | α_{\max} | | | | |
| 869.0 ... 894.0 MHz | | — | 2.6 | 3.7 | dB |
| Amplitude ripple (p-p) | $\Delta\alpha$ | | | | |
| 869.0 ... 894.0 MHz | | — | 1.1 | 2.1 | dB |
| Input VSWR | | | | | |
| 869.0 ... 894.0 MHz | | — | 1.4:1 | 2.1:1 | |
| Output VSWR | | | | | |
| 869.0 ... 894.0 MHz | | — | 1.4:1 | 2.1:1 | |
| Attenuation | α | | | | |
| 00.0 ... 824.0 MHz | | 35.0 | 50.0 | — | dB |
| 824.0 ... 849.0 MHz | | 30.0 | 45.0 | — | dB |
| 970.0 ... 997.0 MHz | | 35.0 | 60.0 | — | dB |
| 997.0 ... 1150.0 MHz | | 40.0 | 60.0 | — | dB |
| 1150.0 ... 1500.0 MHz | | 30.0 | 50.0 | — | dB |
| 1500.0 ... 2000.0 MHz | | 25.0 | 38.0 | — | dB |

Maximum ratings

| | | | | |
|------------------------------------|------------------|------------------|-----|----------------------|
| Operable temperature range | T | -45/+125 | °C | |
| Storage temperature range | T _{stg} | -45/+125 | °C | |
| DC voltage | V _{DC} | 5 | V | |
| ESD voltage | V _{ESD} | 50 ¹⁾ | V | Machine Model |
| Input power 869.0 ... 894.0 MHz | P _{IN} | 13 | dBm | cw, 100000 h, 100 °C |

¹⁾ acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses

Data sheet

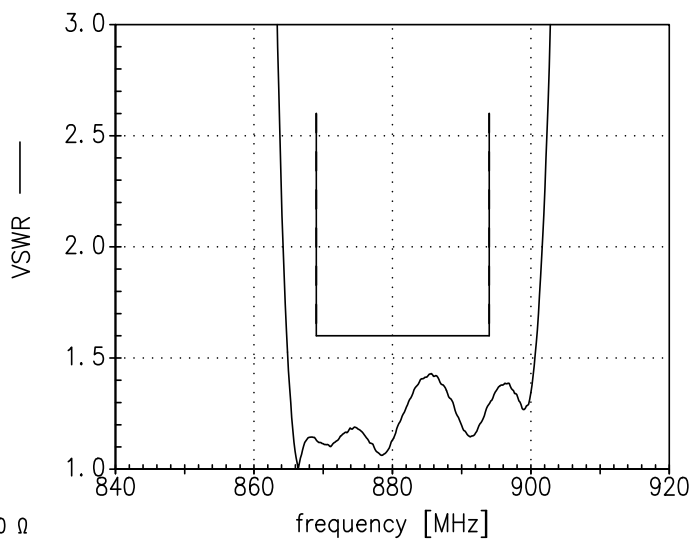
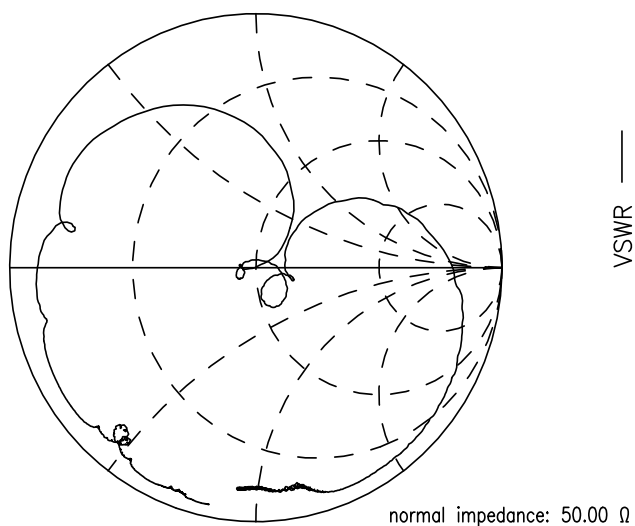
SMD
Transfer function (S21, narrowband)

Transfer function (S21, wideband)


Data sheet

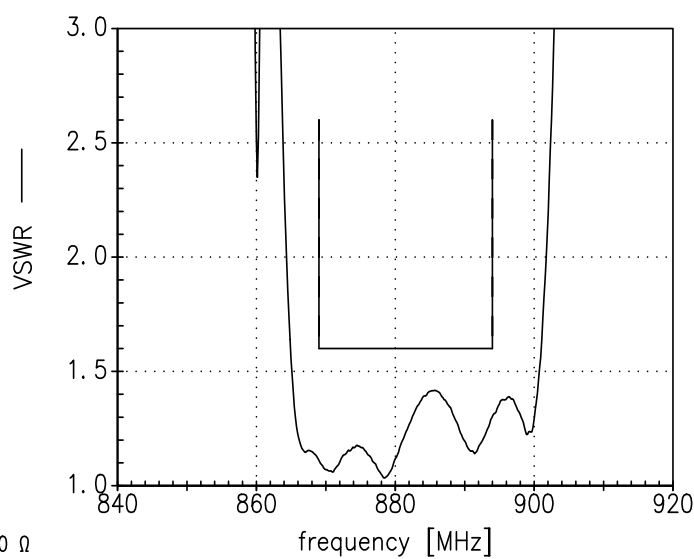
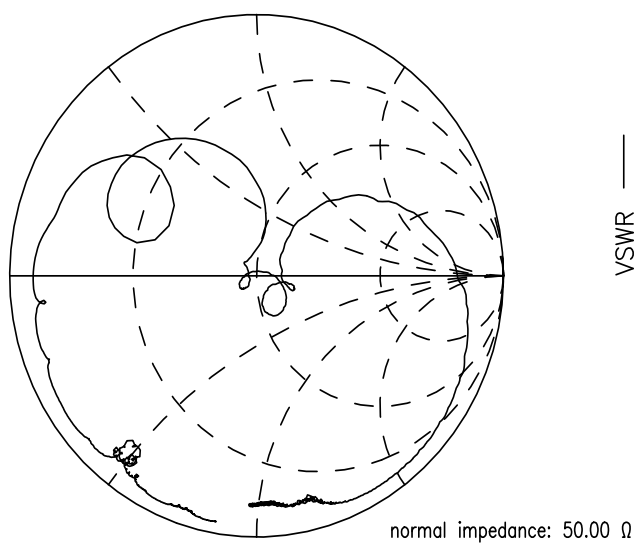
SMD

Smith charts

S₁₁ function



S₂₂ function



References

| | |
|----------------------------|--|
| Type | B4125 |
| Ordering code | B39881B4125U410 |
| Marking and package | C61157-A7-A67 |
| Packaging | F61074-V8168-Z000 |
| Date codes | L_1126 |
| S-parameters | B4125_NB.s2p B4125_WB.s2p see file header for port/pin assignment table |
| Soldering profile | S_6001 |
| RoHS compatible | RoHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8th, 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases. |
| Matching coils | See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm for a large variety of matching coils. |

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