



SAW Components

SAW Rx Filter

TETRA

| | |
|-----------------------|--------------------------|
| Series/type: | B5047 |
| Ordering code: | B39391B5047Z810 |
| Date: | December 12, 2006 |
| Version: | 2.0 |



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B5047

SAW Rx Filter

390.0 MHz

Data Sheet

SMD

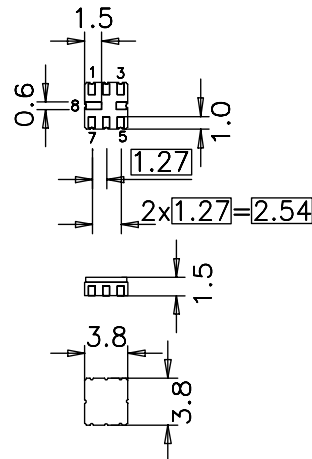
Application

- Low-loss filter for TETRA
- Usable passband 20 MHz
- Unbalanced to balanced operation
- No matching required
- Filter impedance 50 Ω



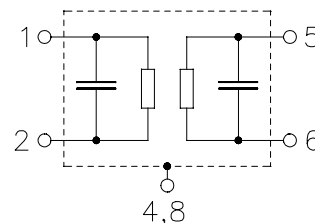
Features

- Package size 3.8 x 3.8 x 1.5 mm³
- Package code QCC8B
- Approx. weight 0.07 g
- Ceramic package for **Surface Mount Technology (SMT)**
- RoHS compliant
- Ni, gold-plated
- **Electrostatic Sensitive Device (ESD)**



Pin configuration

- 5 Input
- 1 Output balanced
- 2 Output balanced
- 3,6,7 To be grounded
- 4,8 Case ground



Please read *cautions and warnings and important notes* at the end of this document.



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Characteristics

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

| | | min. | typ. @ 25 °C | max. | |
|---|-----------------------|------|-----------------|-------------------|-------|
| Center frequency | f_C | — | 390.0 | — | MHz |
| Maximum insertion attenuation | α_{max} | | | | |
| 380.0 ... 400.0 MHz | | — | 3.1 | 5.0 ¹⁾ | dB |
| Amplitude ripple (p-p) | $\Delta\alpha$ | | | | |
| 380.0 ... 400.0 MHz | | — | 1.1 | 3.0 ²⁾ | dB |
| Input VSWR | | | | | |
| 380.0 ... 400.0 MHz | | — | 2.0 | 2.3 | |
| Output VSWR | | | | | |
| 380.0 ... 400.0 MHz | | — | 2.1 | 2.3 | |
| Attenuation | α | | | | |
| 0.0 ... 150.0 MHz | | 35 | 54 | — | dB |
| 150.0 ... 346.0 MHz | | 30 | 34 | — | dB |
| 346.0 ... 370.0 MHz | | 13 | 17 | — | dB |
| 410.0 ... 440.0 MHz | | 14 | 17 | — | dB |
| 440.0 ... 460.0 MHz | | 20 | 31 | — | dB |
| 460.0 ... 542.0 MHz | | 28 | 32 | — | dB |
| 542.0 ... 563.0 MHz | | 35 | 40 | — | dB |
| 563.0 ... 1300.0 MHz | | 30 | 34 | — | dB |
| 1300.0 ... 1526.0 MHz | | 25 | 30 | — | dB |
| 1526.0 ... 2600.0 MHz | | 16 | 20 | — | dB |
| 2600.0 ... 4000.0 MHz | | 5 | 28 | — | dB |
| Temperature coefficient of frequency | TC_f | — | -70 | — | ppm/K |

¹⁾ 3.5 dB at 25 °C.

²⁾ 1.5 dB at 25 °C.



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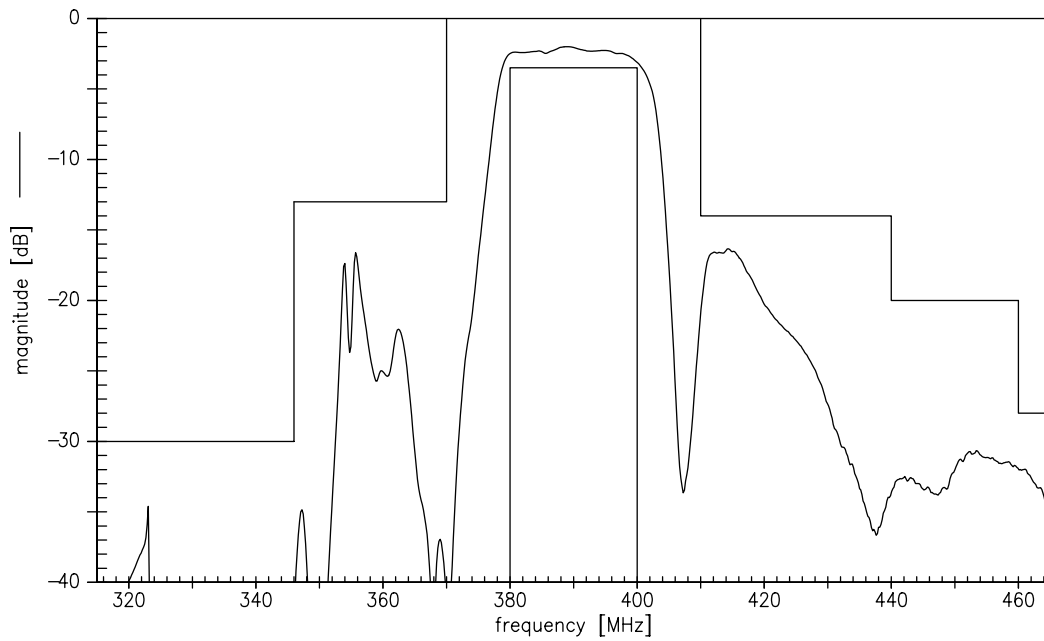
Maximum ratings

| | | | | |
|---------------------------------------|------------------|-------------------|-----|--------------------------|
| 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 380.0 ... 400.0 MHz | P _{IN} | 15 | dBm | continuous wave |

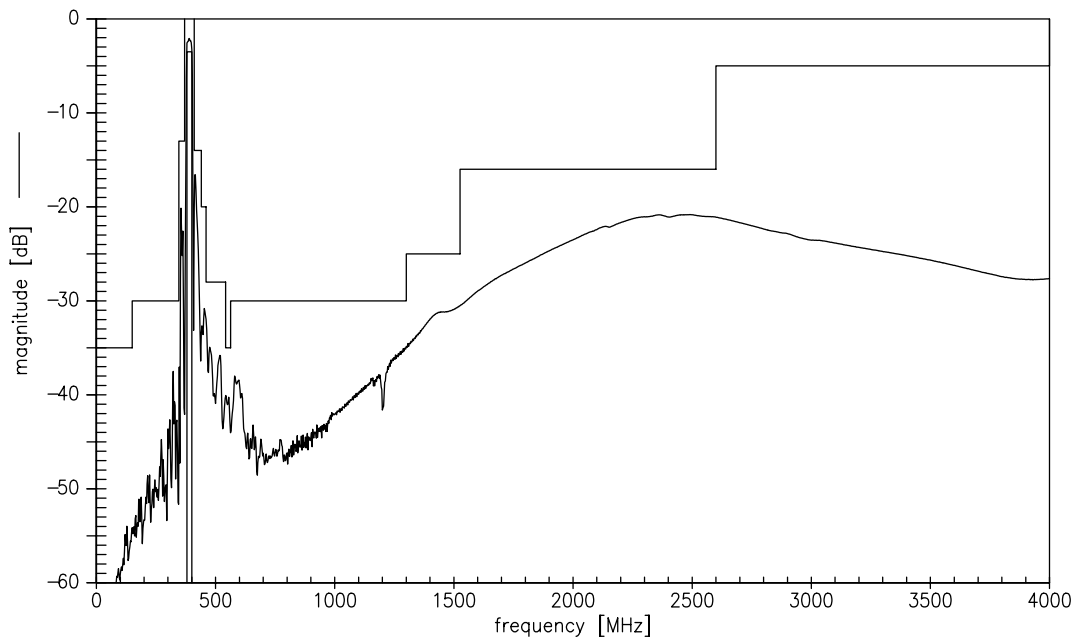
¹⁾ acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



Transfer function (narrowband)



Transfer function (wideband)



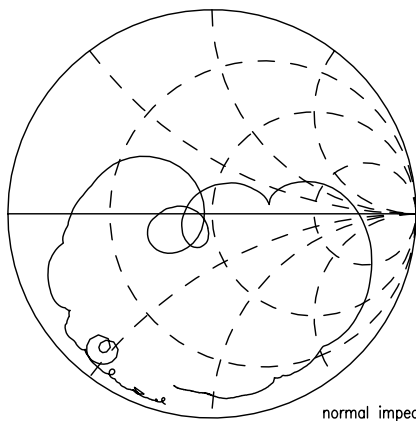


Data Sheet

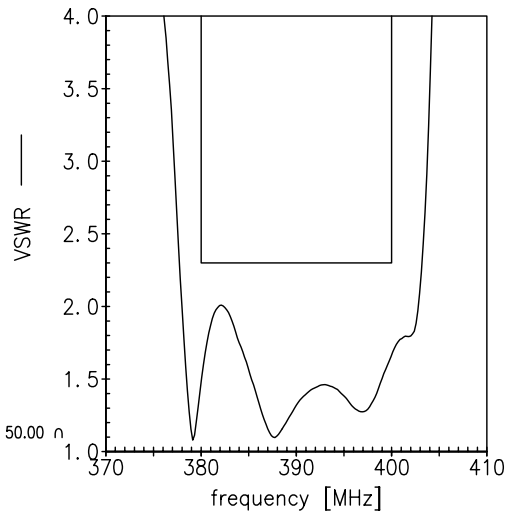


Smith chart

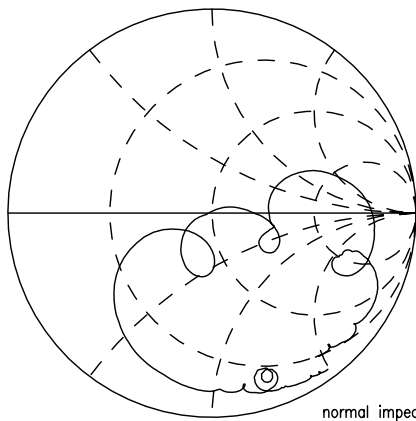
S₁₁ function



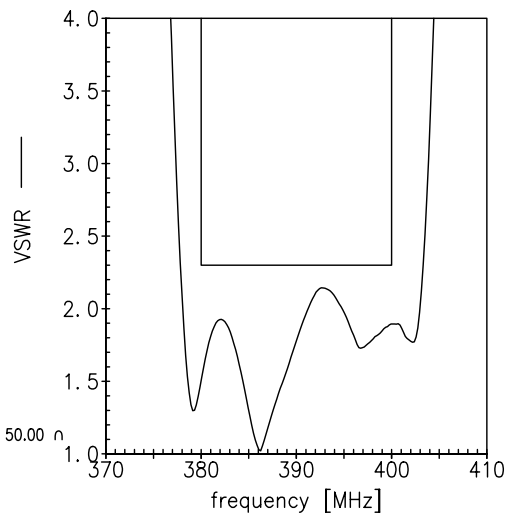
normal impedance: 50.00 Ω



S₂₂ function



normal impedance: 50.00 Ω





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References

| | |
|----------------------------|--|
| Type | B5047 |
| Ordering code | B39391B5047Z810 |
| Marking and package | C61157-A7-A46 |
| Packaging | F61074-V8167-Z000 |
| Date codes | L_1126 |
| S-parameters | B5047_NB.s3p B5047_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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