



SAW Components

SAW IF filter for base stations LTE

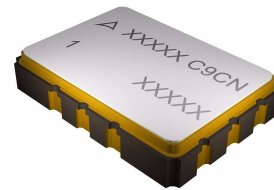
| | |
|-----------------------|--------------------------|
| Series/type: | B5254 |
| Ordering code: | B39311B5254H810 |
| Date: | February 11, 2013 |
| Version: | 2.0 |

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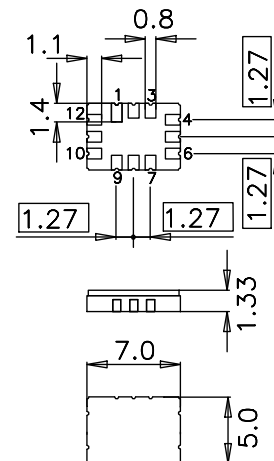
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Application

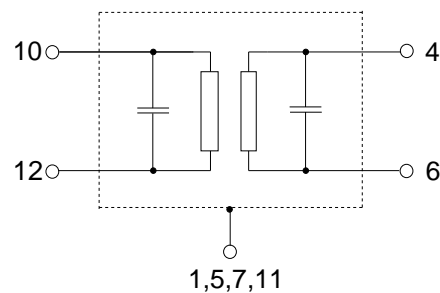
- Low-loss IF filter for LTE base stations
- Usable passband 60 MHz
- Unbalanced or balanced operation possible


Features

- Package size 7.0 x 5.0 x 1.33 mm³
- Package code QCC12E
- RoHS compatible
- Approximate weight 0.25 g
- Ceramic Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- Filter surface passivated
- **Moisture Sensitivity Level 1**


Pin configuration

- 10 Input
- 12 Input ground
- 4 Output
- 6 Output ground or balanced output
- 2, 3, 8, 9 To be grounded
- 1, 5, 7, 11 Case ground



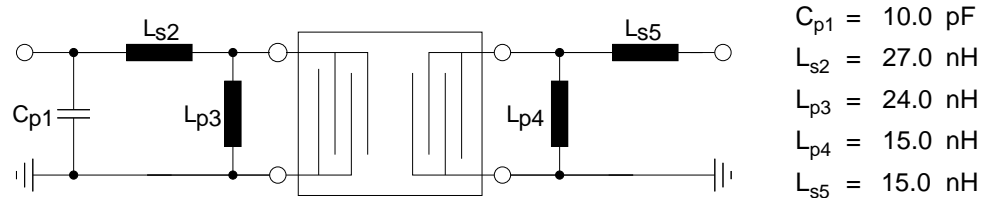
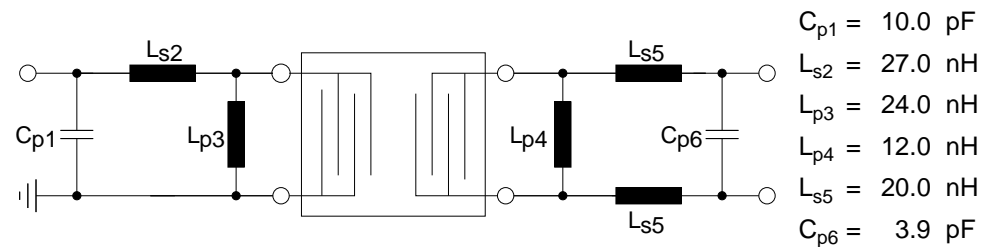
SAW Components
B5254
SAW IF filter
307.2 MHz
Data sheet

Characteristics

| | |
|--------------------------------------|---|
| Temperature range for specification: | T = -40 °C to +85 °C |
| Terminating source impedance: | Z _S = 50 Ω unbalanced and matching network |
| Terminating load impedance: | Z _L = 50 Ω unbalanced and matching network |

| | | min. | typ. @ 25 °C | max. | |
|--|---------------------------|--------------------|-----------------|------|--------|
| Nominal frequency | f _N | — | 307.2 | — | MHz |
| Minimum insertion attenuation (including matching network) | α _{min} | — | 10.4 | 12.5 | dB |
| Passband width | | | | | |
| | α _{rel} ≤ 1.0 dB | B _{1.0dB} | 61.0 | 67.1 | — MHz |
| | α _{rel} ≤ 3.0 dB | B _{3.0dB} | 64.0 | 69.4 | — MHz |
| Amplitude ripple (p-p) | | | | | |
| | f _N ± 30 MHz | Δα | — | 0.4 | 1.0 dB |
| Group delay ripple (p-p) | | | | | |
| | f _N ± 30 MHz | Δτ | — | 32 | 60 ns |
| Phase ripple (p-p) | | | | | |
| | f _N ± 30 MHz | Δφ | — | 6 | 12 ∞ |
| Error vector magnitude across any 5 MHz bw in passband | EVM | — | 1.6 | 2.5 | % |
| Absolute group delay (mean) | τ̄ | — | 0.55 | — | μs |
| | f _N ± 30 MHz | | | | |
| Relative attenuation (relative to α_{min}) | α _{rel} | | | | |
| | 100 MHz ... 214 MHz | | 45 | 58 | — dB |
| | 214 MHz ... 258 MHz | | 18 | 46 | — dB |
| | 357 MHz ... 400 MHz | | 18 | 46 | — dB |
| | 400 MHz ... 600 MHz | | 45 | 56 | — dB |
| | 600 MHz ... 1 GHz | | 50 | 65 | — dB |
| Terminating impedance at f_N (50 Ω + matching) | | | | | |
| | input | | 9.2+j20.3 | | Ω |
| | output | | 7.2+j20.7 | | Ω |

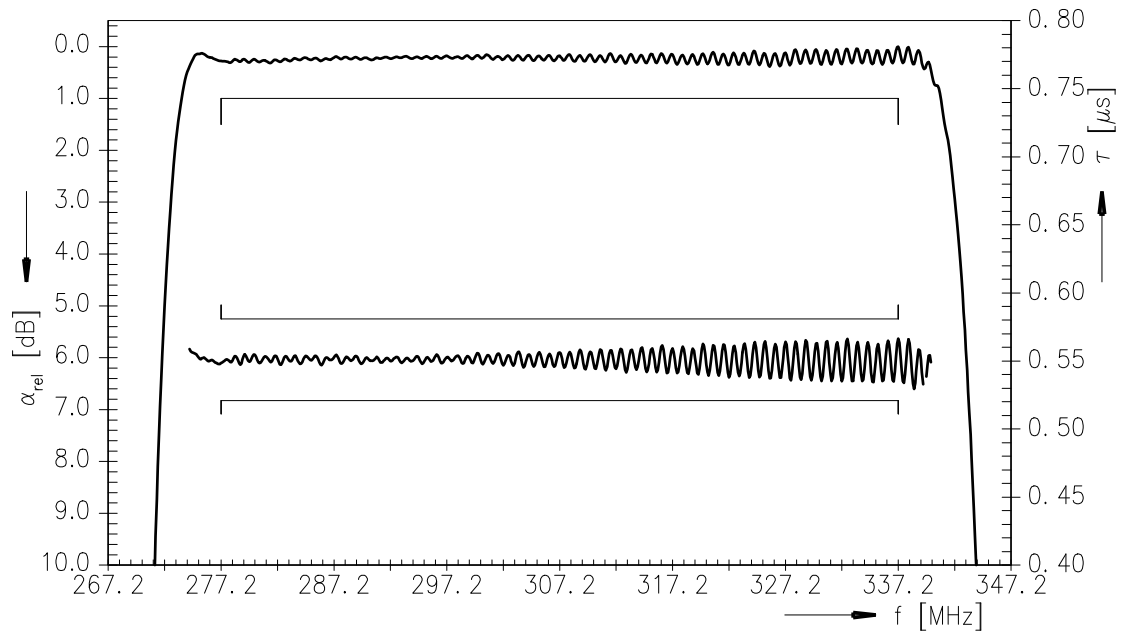
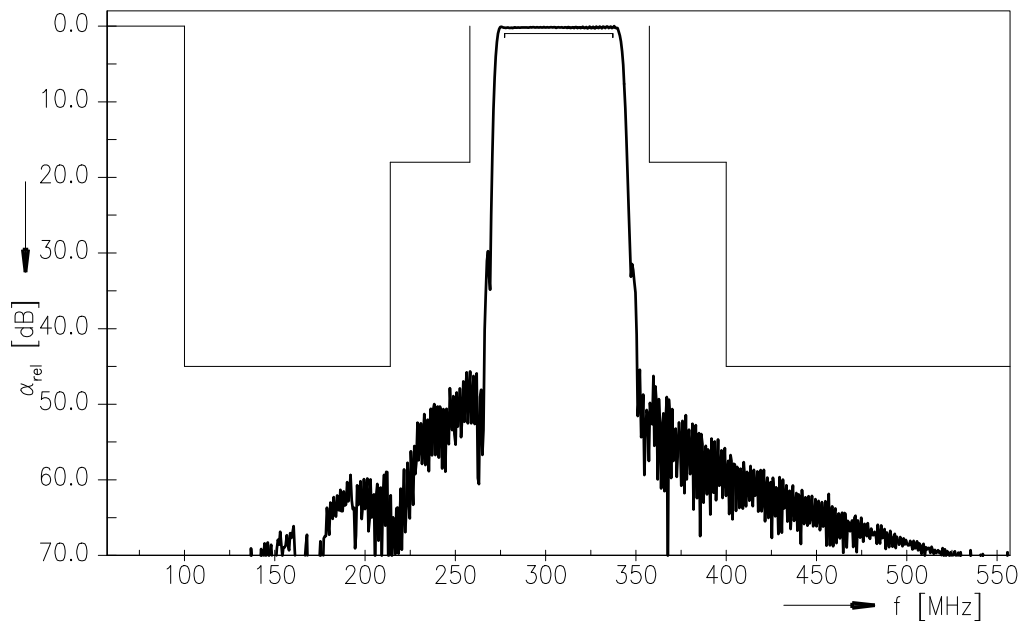
Data sheet

Matching network to 50 Ω unbalanced input and output

Matching network to 50 Ω unbalanced input and 200 Ω balanced output


Element values depend upon board layout and properties.

Maximum ratings

| | | | | |
|----------------------------|------------------|---------|-----|--|
| Operable temperature range | T | -40/+85 | °C | |
| Storage temperature range | T _{stg} | -40/+85 | °C | |
| DC voltage | V _{DC} | 0 | V | |
| Input power (passband) | P _{IN} | 15 | dBm | |

Transfer function (S21, narrowband, normalized)

Transfer function (S21, wideband, normalized)


| | |
|-----------------------|---|
| SAW Components | B5254 |
| SAW IF filter | 307.2 MHz |
| Data sheet |  |

References

| | |
|----------------------------|---|
| Type | B5254 |
| Ordering code | B39311B5254H810 |
| Marking and package | C61157-A7-A103 |
| Packaging | F61074-V8170-Z000 |
| Date codes | L_1126 |
| S-parameters | B5254_NB.s2p, B5254_WB.s2p, B5254_NB.s3p, B5254_WB.s3p, B5254_NB_UN.s4p, B5254_WB_UN.s4p 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 8 th , 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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