# SAW Filters for Infrastructure Systems

## Series/Type: B5207

The following products presented in this data sheet are being withdrawn.

| Ordering Code | Substitute Product | Date of Withdrawal | Deadline Last Orders | Last Shipments |
|---|---|---|---|---|
| B39141B5207H310 | | 2011-07-15 | 2011-12-31 | 2012-03-31 |

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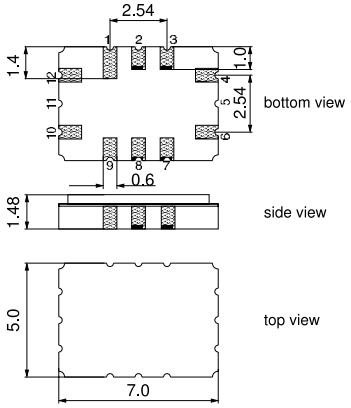
## Application

- Low-loss IF filter for TD-SCDMA base station
- Usable passband 20.0 MHz
- Balanced or unbalanced operation

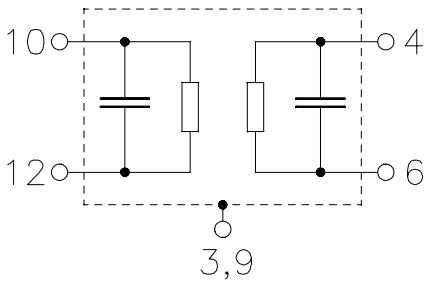

## Features

- Package size 7.0 x 5.0 x 1.48 mm$^3$
- Package code QCC12C
- RoHS compatible
- Approximate weight 0.25 g
- Ceramic Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- Filter surface passivated




## Pin configuration

| | | |
|---|---|---|
| ■ | 10 | Input |
| ■ | 12 | Input ground |
| ■ | 4 | Output |
| ■ | 6 | Output ground |
| ■ | 1, 2, 7, 8 | To be grounded |
| ■ | 3, 9 | Case ground |

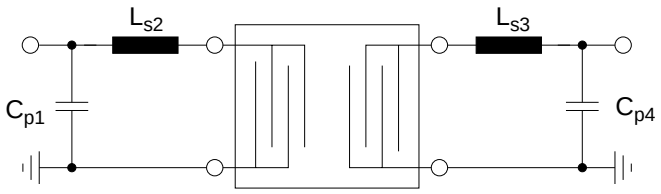


## Characteristics

Temperature range for specification: T = –40 ˚C to +85 ˚C
Terminating source impedance: $Z_S$ = 50 Ω and matching network
Terminating load impedance: $Z_L$ = 50 Ω and matching network

| | | min. | typ. @ 25 ˚C | max. | |
|---|---|---|---|---|---|
| **Nominal frequency** | $f_N$ | — | 138.24 | — | MHz |
| **Minimum insertion attenuation** (including matching network) | $\alpha_{min}$ | — | 8.5 | 10.0 | dB |
| **Passband width** $\alpha_{rel} \leq$ 1.0 dB | $B_{1.0dB}$ | 20 | 23.1 | — | MHz |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | |
| $f_N \pm$ 10.0 MHz | | — | 0.4 | 1.0 | dB |
| **Group delay ripple** (p-p) | $\Delta\tau$ | | | | |
| $f_N \pm$ 10.0 MHz | | — | 40 | 60 | ns |
| **Absolute group delay** (mean) | $\bar{\tau}$ | | | | |
| $f_N \pm$ 10.0 MHz | | — | 665 | — | ns |
| **Relative attenuation** (relative to $\alpha_{min}$) | $\alpha_{rel}$ | | | | |
| 10.00 MHz ... 90.00 MHz | | 55 | 62 | — | dB |
| 90.00 MHz ... 108.24 MHz | | 50 | 57 | — | dB |
| 108.24 MHz ... 117.52 MHz | | 50 | 57 | — | dB |
| 122.88 MHz | | 45 | 52 | — | dB |
| 220.40 MHz ... 271.12 MHz | | 58 | 75 | — | dB |
| 271.12 MHz ... 1000.00 MHz | | 40 | 75 | — | dB |
| **1dB compression point** | | 12 | — | — | dBm |
| **Input IP3** | | 35 | — | — | dBm |
| **Temperature coefficient of frequency** | $TC_f$ | — | –87 | — | ppm/K |

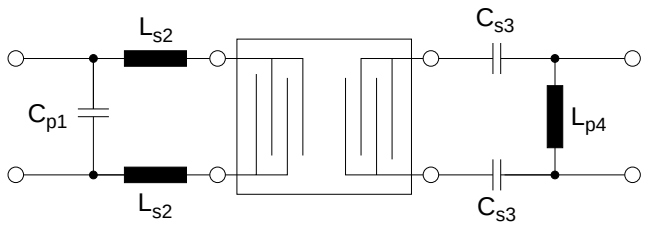
**Matching network to 50 Ω**




$C_{p1}$ = 27 || 2.2 pF
$L_{s2}$ = 82 nH
$L_{s3}$ = 33 nH
$C_{p4}$ = 47 || 2.2 pF

Element values depend upon board layout and properties.

**Matching network to 200 Ω balanced input and 200 Ω balanced output**



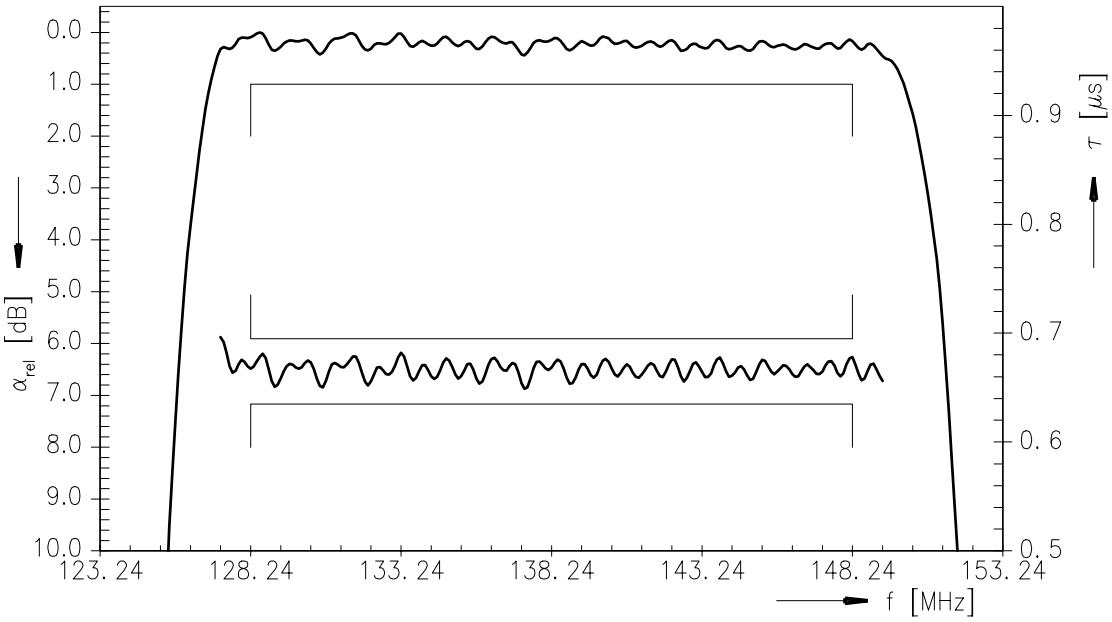

$C_{p1}$ = 18 pF
$L_{s2}$ = 62 nH
$C_{s3}$ = 100 pF
$L_{p4}$ = 47 nH

Element values depend upon board layout and properties.

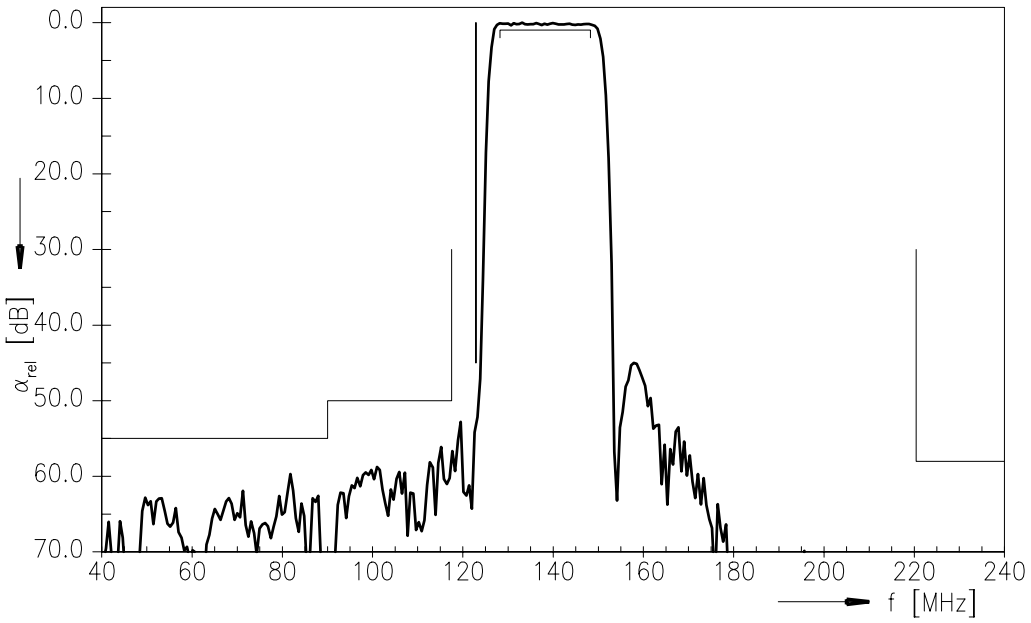
**Maximum ratings**

| | | | | |
|---|---|---|---|---|
| Operable temperature range | T | –40/+85 | ˚C | |
| Storage temperature range | $T_{stg}$ | –40/+85 | ˚C | |
| DC voltage | $V_{DC}$ | 0 | V | |
| Input Power | $P_{IN}$ | 10 | dBm | |

**Transfer function (S21, Narrowband)**




**Transfer function (S21, Wideband)**



**References**

| | |
|---|---|
| **Type** | B5207 |
| **Ordering code** | B39141B5207H310 |
| **Marking and package** | C61157-A7-A95 |
| **Packaging** | F61074-V8170-Z000 |
| **Date codes** | L_1126 |
| **S-parameters** | |
| **Soldering profile** | S_6001 |
| **RoHS compatible** | 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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