![EPCOS logo]

# EPCOS

# SAW Components

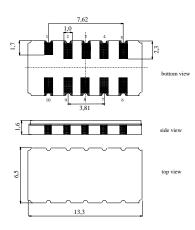Data Sheet B3864



Data Sheet

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| SAW Components | B3864 |
|---|---|
| **Low-Loss Filter** | **119,6 MHz** |

Data Sheet

Ceramic package **DCC12A**



## Features

- Low-loss IF filter for GSM base station
- Temperature stable
- Ceramic SMD package
- Unbalanced or balanced operation
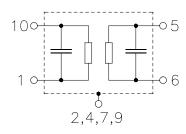
## Terminals

- Gold plated

Dimensions in mm, approx. weight 0,8 g

## Pin configuration

| | |
|---|---|
| 10 | Input or balanced input |
| 1 | Input ground or balanced input |
| 5 | Output or balanced output |
| 6 | Output ground or balanced output |
| 3, 8 | Ground |
| 2, 4, 7, 9 | Case ground |



| Type | Ordering code | Marking and Package according to | Packing according to |
|---|---|---|---|
| B3864 | B39121-B3864-H510 | C61157-A7-A94 | F61074-V8163-Z000 |

**E**lectrostatic **S**ensitive **D**evice (**ESD**)

## Maximum ratings

| | | | |
|---|---|---|---|
| Operable temperature range | $T$ | −40 / +85 | °C |
| Storage temperature range | $T_{stg}$ | −40 / +85 | °C |
| DC voltage | $V_{DC}$ | 0 | V |
| Source power | $P_s$ | 10 | dBm |

| SAW Components | B3864 |
|---|---|
| **Low-Loss Filter** | **119,6 MHz** |

## Characteristics

Operating temperature range:    $T$ = -10 to +85 °C
Terminating source impedance:    $Z_S$ = 350 Ω ∥ 100 nH
Terminating load impedance:    $Z_L$ = 200 Ω ∥ 65 nH

| | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Nominal frequency** | $f_N$ | — | 119,6 | — | MHz |
| **Minimum insertion attenuation** | $\alpha_{min}$ | — | 5,1 | 8,0 | dB |
| **1dB bandwidth** | | | | | |
|     $\alpha_{rel}$ ≤ 1,0 dB | $B_{1,0dB}$ | — | 350 | — | kHz |
| **Amplitude ripple** (p-p)    $f_N \pm 75$ kHz | $\Delta\alpha$ | — | 0,2 | 1,0 | dB |
| **Group delay ripple** (p-p)    $f_N \pm 75$ kHz | $\Delta\tau$ | — | 100 | 400 | ns |
| **Relative attenuation** (relative to $\alpha_{min}$) | $\alpha_{rel}$ | | | | |
|     $f_N \pm 400$ kHz  ...  $f_N \pm 600$ kHz | | 9 | 12 | — | dB |
|     $f_N \pm 600$ kHz  ...  $f_N \pm 800$ kHz | | 20 | 35 | — | dB |
|     $f_N \pm 800$ kHz  ...  $f_N \pm 3$ MHz | | 26 | 37 | — | dB |
|     $f_N \pm 3$ MHz  ...  $f_N \pm 20$ MHz | | 30 | 45 | — | dB |
|     1 MHz  ...  $f_N - 20$ MHz | | 55 | 65 | — | dB |
|     $f_N + 20$ MHz  ...  187 MHz | | 55 | 65 | — | dB |
|     187 MHz  ...  223 MHz | | 50 | 60 | — | dB |
|     223 MHz  ...  1000 MHz | | 55 | 75 | — | dB |
| **Return loss** (at $f_N$) | | 9 | 17 | — | dB |
| **Temperature coefficient of frequency** [1] | $TC_f$ | — | –0,036 | — | ppm/K$^2$ |
| **Turnover temperature** | $T_0$ | — | 45 | — | °C |

[1] Temperature dependance of $f_c$:    $f_c(T_A) = f_c(T_0)(1 + TC_f(T_A - T_0)^2)$

**Matching network to 50 $\Omega$**

(Element values depend on PCB layout)



Cp1 = 56 pF                    Ls3 = 82 nH
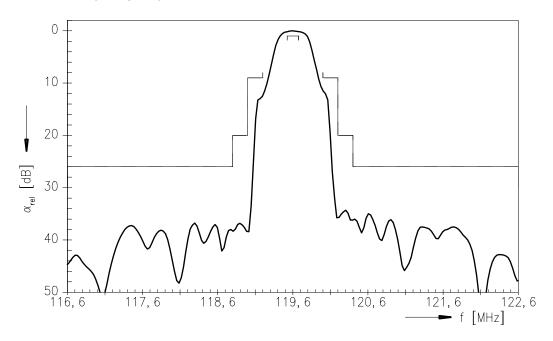
Ls2 = 100 nH || 1.2 pF         Cp4 = 56 pF
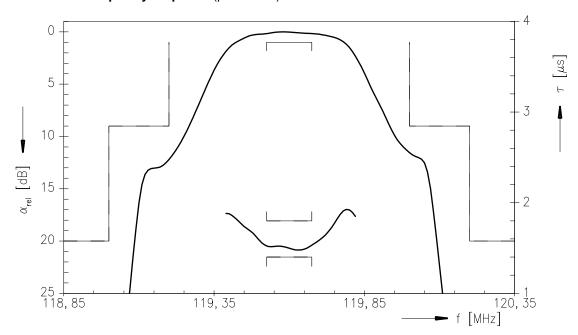
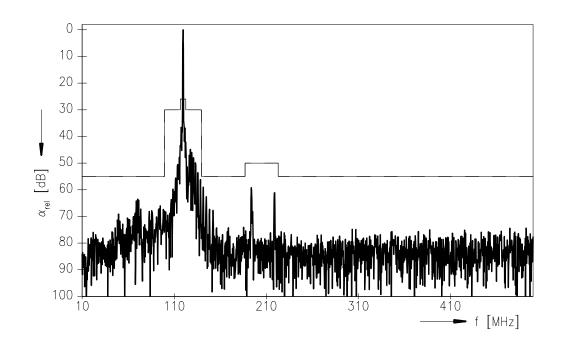## Normalized frequency response



## Normalized frequency response (pass band)

Data Sheet

**Normalized frequency response** (wideband)

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