



SAW Components

Data Sheet B3848





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B3848

Low-Loss Filter

208,0 MHz

Data Sheet

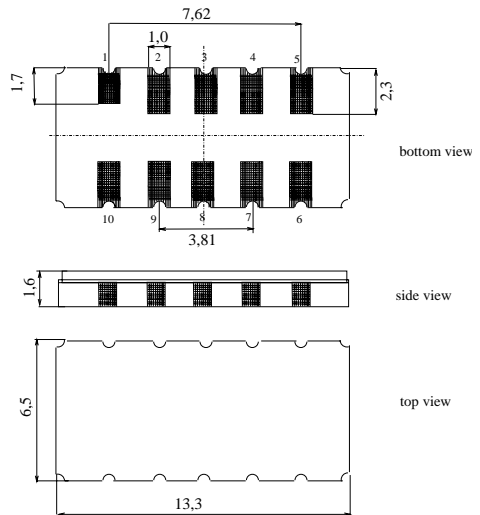
Ceramic package DCC12A

Features

- Low-loss IF filter for GSM EDGE base station
- Usable bandwidth 400 kHz
- Very low group delay ripple
- Temperature stable
- Ceramic SMD package

Terminals

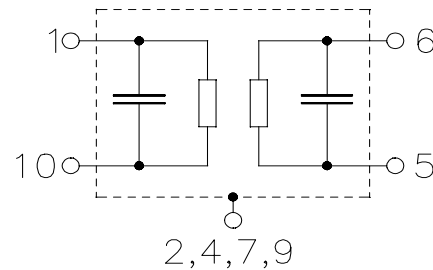
- Gold plated



Dimensions in mm, approx. weight 0,4 g

Pin configuration

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



| Type | Ordering code | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| B3848 | B39211-B3848-H510 | C61157-A7-A94 | F61074-V8163-Z000 |

Electrostatic Sensitive Device (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 |


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Characteristics

Operating temperature range:

 $T = -10 \dots 85 \text{ } ^\circ\text{C}$

Terminating source impedance:

 $Z_S = 50 \text{ } \Omega$ and matching network

Terminating load impedance:

 $Z_L = 50 \text{ } \Omega$ and matching network

| | | min. | typ. | max. | |
|--|--|-----------------------|-------|------|-------------------|
| Nominal frequency | f_N | — | 208,0 | — | MHz |
| Minimum insertion attenuation | α_{\min} | — | 6,5 | 7,5 | dB |
| Pass bandwidth | | | | | |
| | $\alpha_{\text{rel}} \leq 1,0 \text{ dB}$ | $B_{1\text{dB}}$ | 400 | 590 | — kHz |
| | $\alpha_{\text{rel}} \leq 3,0 \text{ dB}$ | $B_{3\text{dB}}$ | — | 850 | — kHz |
| Amplitude ripple (peak to adjacent valley) | | | | | |
| | $f_N \pm 200 \text{ kHz}$ | — | 0,1 | — | dB |
| Amplitude variation (p-p) | | | | | |
| | $f_N \pm 200 \text{ kHz}$ | $\Delta\alpha$ | — | 0,5 | 1,0 dB |
| Absolute group delay | | | | | |
| | @ f_N | τ | 0,7 | 1,3 | 1,7 μs |
| Group delay ripple (p-p) | | | | | |
| | $f_N \pm 200 \text{ kHz}$ | $\Delta\tau$ | — | 50 | 120 ns |
| Relative attenuation (relative to α_{\min}) | | | | | |
| | $f_N \pm 0,4 \text{ MHz} \dots f_N \pm 0,6 \text{ MHz}$ | α_{rel} | 0 | 2 | — dB |
| | $f_N \pm 0,6 \text{ MHz} \dots f_N \pm 1,2 \text{ MHz}$ | | 8 | 10 | — dB |
| | $f_N \pm 1,2 \text{ MHz} \dots f_N \pm 1,8 \text{ MHz}$ | | 20 | 30 | — dB |
| | $f_N \pm 1,8 \text{ MHz} \dots f_N \pm 3,4 \text{ MHz}$ | | 25 | 40 | — dB |
| | $f_N \pm 3,4 \text{ MHz} \dots f_N \pm 6,0 \text{ MHz}$ | | 34 | 50 | — dB |
| | $f_N \pm 6,0 \text{ MHz} \dots f_N \pm 9,5 \text{ MHz}$ | | 40 | 50 | — dB |
| | $f_N \pm 9,5 \text{ MHz} \dots f_N \pm 13,0 \text{ MHz}$ | | 43 | 60 | — dB |
| | 10,0 MHz $\dots f_N - 30,0 \text{ MHz}$ | | 55 | 60 | — dB |
| | $f_N - 30,0 \text{ MHz} \dots f_N - 13,0 \text{ MHz}$ | | 50 | 55 | — dB |
| | $f_N + 13,0 \text{ MHz} \dots f_N + 30,0 \text{ MHz}$ | | 45 | 50 | — dB |
| | $f_N + 30,0 \text{ MHz} \dots 450,0 \text{ MHz}^1)$ | | 50 | 55 | — dB |
| VSWR (Input and output in pass band) | | — | 1,3 | 2,3 | |



| | |
|------------------------|------------------|
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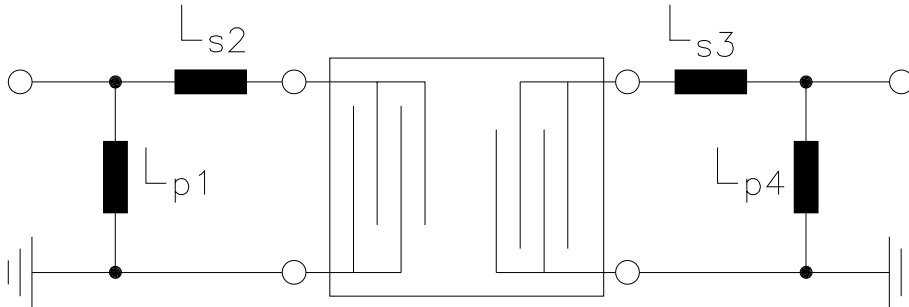
| | | min. | typ. | max. | |
|---|--------|-------------|-------------|-------------|--------------------|
| Temperature coefficient of frequency ²⁾ | TC_f | — | - 0,036 | — | ppm/K ² |
| Turnover temperature | T_0 | — | 40 | — | °C |

1) Narrowband responses (typ. 40 dB) at 338 and 380 MHz

2) 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 Ω

(Element values depend upon PCB layout)



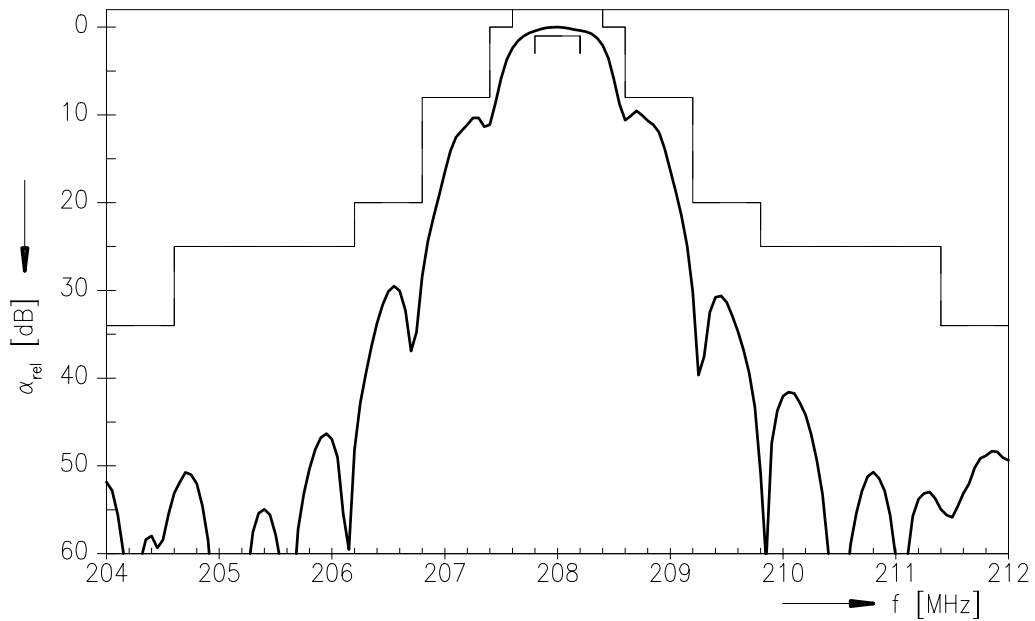
$L_{p1} = 15 \text{ nH}$
 $L_{s2} = 27 \text{ nH}$

$L_{s3} = 8,2 \text{ nH}$
 $L_{p4} = 15 \text{ nH}$

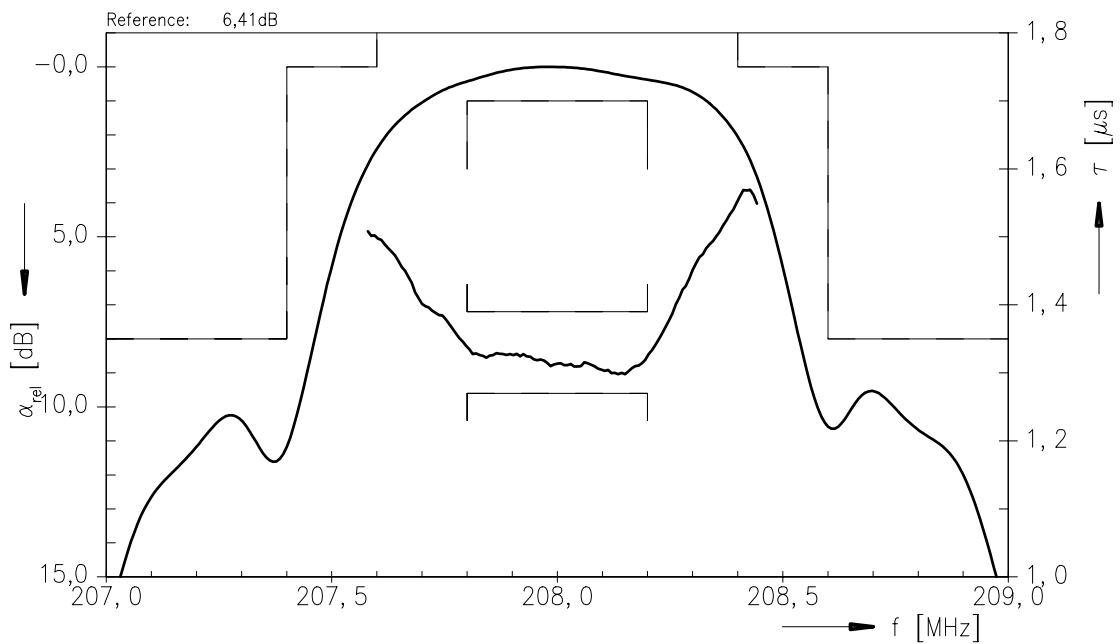


Data Sheet

Normalized frequency response



Normalized frequency response (pass band)





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