



# SAW Components

Data Sheet B3804





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B3804

Low-Loss Filter

170,2 MHz

Data Sheet

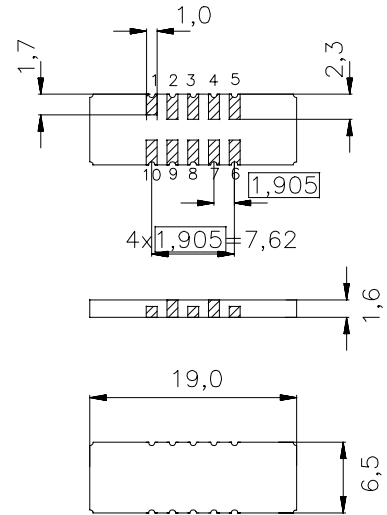
Features

- Low-loss IF filter for GSM base station
- Temperature stable
- Ceramic SMD package

Terminals

- Gold plated

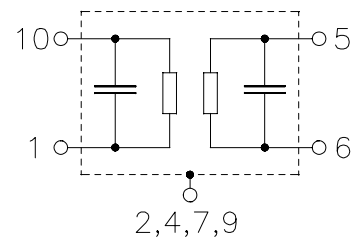
Ceramic package DCC18



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
B3804	B39171-B3804-U210	C61157-A7-A54	F61074-V8081-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:	$Z_S = 50 \text{ } \Omega$ unbalanced or $200 \text{ } \Omega$ balanced and matching network
Terminating load impedance:	$Z_L = 50 \text{ } \Omega$ unbalanced or $200 \text{ } \Omega$ balanced and matching network

		<b>min.</b>	<b>typ.</b>	<b>max.</b>	
<b>Nominal frequency</b>	$f_N$	—	170,2	—	MHz
<b>Minimum insertion attenuation</b>	$\alpha_{\min}$	—	6,5	7,5	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$ $f_N \pm 135 \text{ kHz}$	—	0,35	0,7	dB
<b>Group delay ripple (p-p)</b>	$\Delta\tau$ $f_N \pm 135 \text{ kHz}$	—	0,35	0,7	$\mu\text{s}$
<b>Relative attenuation (relative to <math>\alpha_{\min}</math>)</b>	$\alpha_{\text{rel}}$				
$f_N \pm 0,35 \text{ MHz} \dots f_N \pm 0,6 \text{ MHz}$		7	11	—	dB
$f_N \pm 0,6 \text{ MHz} \dots f_N \pm 0,8 \text{ MHz}$		24	30	—	dB
$f_N \pm 0,8 \text{ MHz} \dots f_N \pm 1,6 \text{ MHz}$		40	45	—	dB
$f_N \pm 1,6 \text{ MHz} \dots f_N \pm 20,0 \text{ MHz}$		43	50	—	dB
$f_N \pm 20,0 \text{ MHz} \dots f_N \pm 35,0 \text{ MHz}$		50	55	—	dB
$f_N \pm 35,0 \text{ MHz} \dots f_N \pm 75,0 \text{ MHz}$		45	60	—	dB
$f_N + 23,5 \text{ MHz} \dots f_N + 23,7 \text{ MHz}$		55	60	—	dB
$f_N + 75,0 \text{ MHz} \dots f_N + 2,0 \text{ GHz}$		40	60	—	dB
<b>VSWR (Input and output)</b>	$f_N \pm 135 \text{ kHz}$	—	1,5	2,0	
<b>Temperature coefficient of frequency <sup>1)</sup></b>	$TC_f$	—	-0,036	—	ppm/K <sup>2</sup>
<b>Turnover temperature</b>	$T_0$	—	45	—	$^\circ\text{C}$

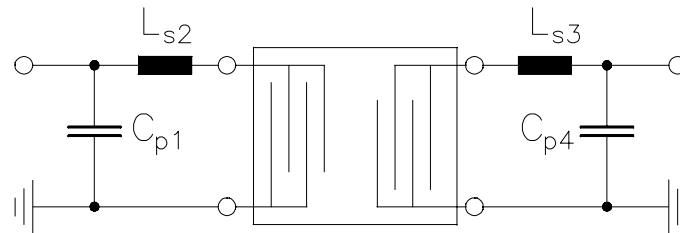
<sup>1)</sup> Temperature dependance of  $f_c$ :  $f_c(T_A) = f_c(T_0)(1 + TC_f(T_A - T_0)^2)$



Data Sheet

Matching network to 50 Ω unbalanced

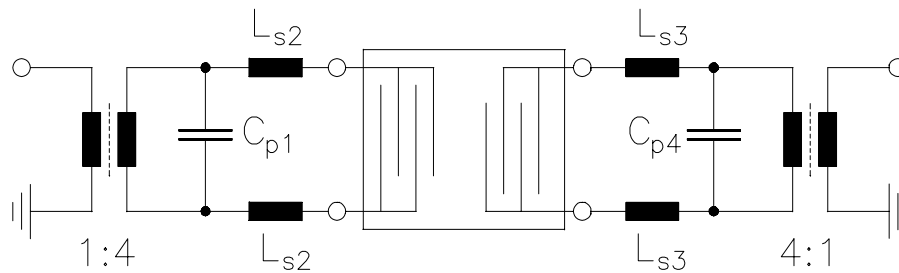
(Element values depend upon PCB layout)



- $C_{p1} = 36,3 \text{ pF}$
- $L_{s2} = 39,0 \text{ nH}$
- $L_{s3} = 39,0 \text{ nH}$
- $C_{p4} = 36,3 \text{ pF}$

Matching network to 200 Ω balanced

(Element values depend upon PCB layout)

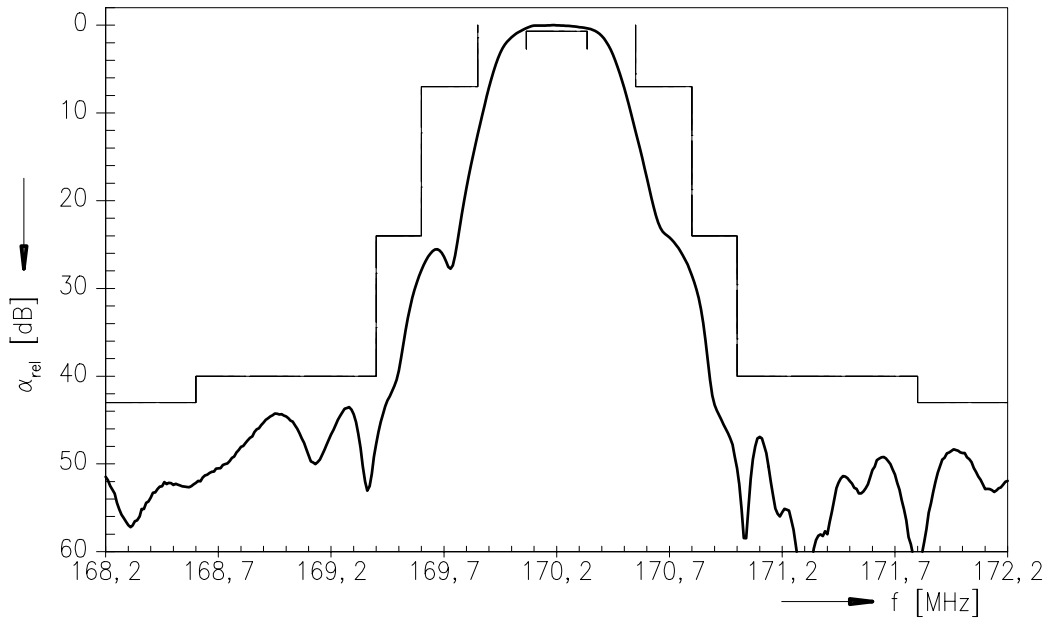


- $C_{p1} = 17,7 \text{ pF}$
- $L_{s2} = 27,0 \text{ nH}$
- $L_{s3} = 27,0 \text{ nH}$
- $C_{p4} = 17,7 \text{ pF}$

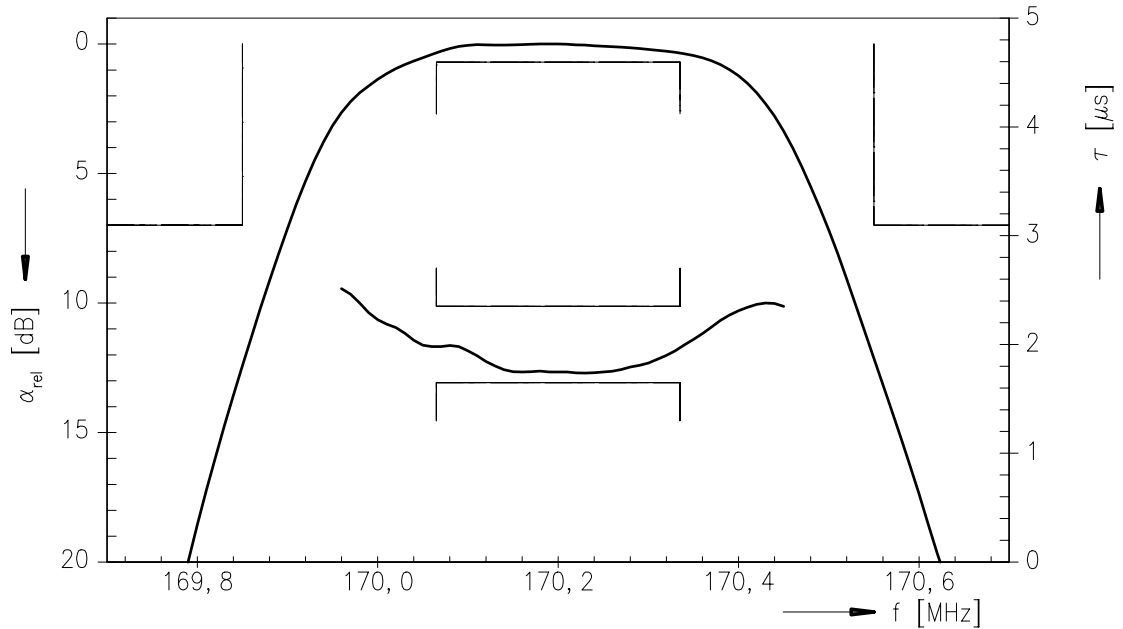


Data Sheet

Normalized frequency response



Normalized frequency response (passband)





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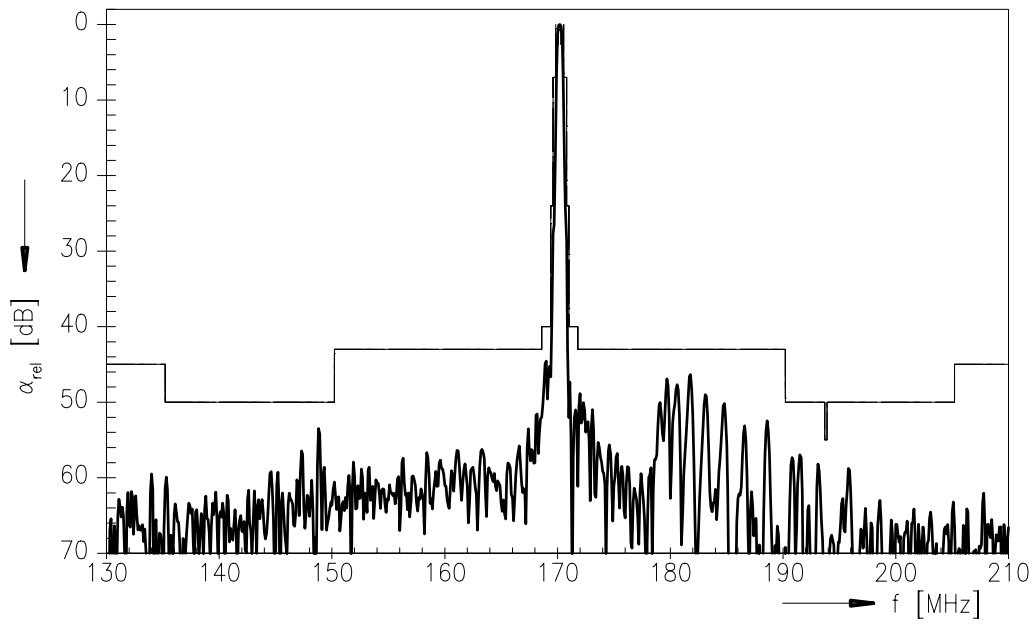
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Transfer function





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