EPCOS

SAW Components

Data Sheet B3804

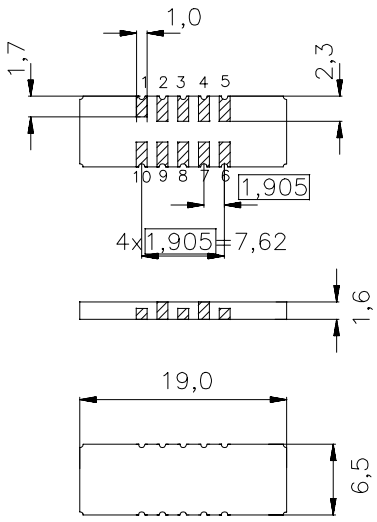
Ceramic package **DCC18**

Features

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

Terminals

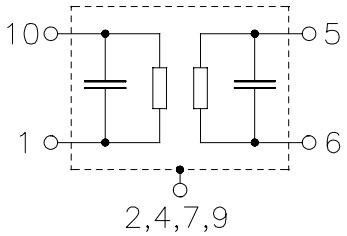
- Gold plated



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
B3804	B39171-B3804-U210	C61157-A7-A54	F61074-V8081-Z000

Electrostatic **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	

Characteristics

Operating temperature range: T = -10 .. 85 °C

Terminating source impedance: Z_S = 50 Ω unbalanced or 200 Ω balanced and matching network

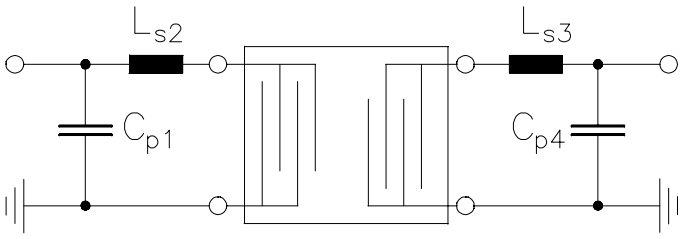
Terminating load impedance: Z_L = 50 Ω unbalanced or 200 Ω balanced and matching network

		min.	typ.	max.	
Nominal frequency	f_N	—	170,2	—	MHz
Minimum insertion attenuation	α_{min}	—	6,5	7,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm 135$ kHz		—	0,35	0,7	dB
Group delay ripple (p-p)	$\Delta\tau$				
$f_N \pm 135$ kHz		—	0,35	0,7	µs
Relative attenuation (relative to α_{min})	α_{rel}				
$f_N \pm$ 0,35 MHz ... $f_N \pm$ 0,6 MHz		7	11	—	dB
$f_N \pm$ 0,6 MHz ... $f_N \pm$ 0,8 MHz		24	30	—	dB
$f_N \pm$ 0,8 MHz ... $f_N \pm$ 1,6 MHz		40	45	—	dB
$f_N \pm$ 1,6 MHz ... $f_N \pm$ 20,0 MHz		43	50	—	dB
$f_N \pm$ 20,0 MHz ... $f_N \pm$ 35,0 MHz		50	55	—	dB
$f_N \pm$ 35,0 MHz ... $f_N \pm$ 75,0 MHz		45	60	—	dB
$f_N +$ 23,5 MHz ... $f_N +$ 23,7 MHz		55	60	—	dB
$f_N +$ 75,0 MHz ... $f_N +$ 2,0 GHz		40	60	—	dB
VSWR (Input and output) $f_N \pm 135$ kHz		—	1,5	2,0	
Temperature coefficient of frequency [1]	TC_f	—	–0,036	—	ppm/K²
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 Ω unbalanced

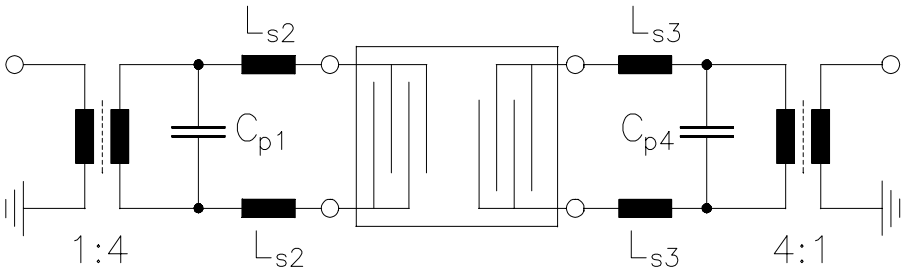
(Element values depend upon PCB layout)



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

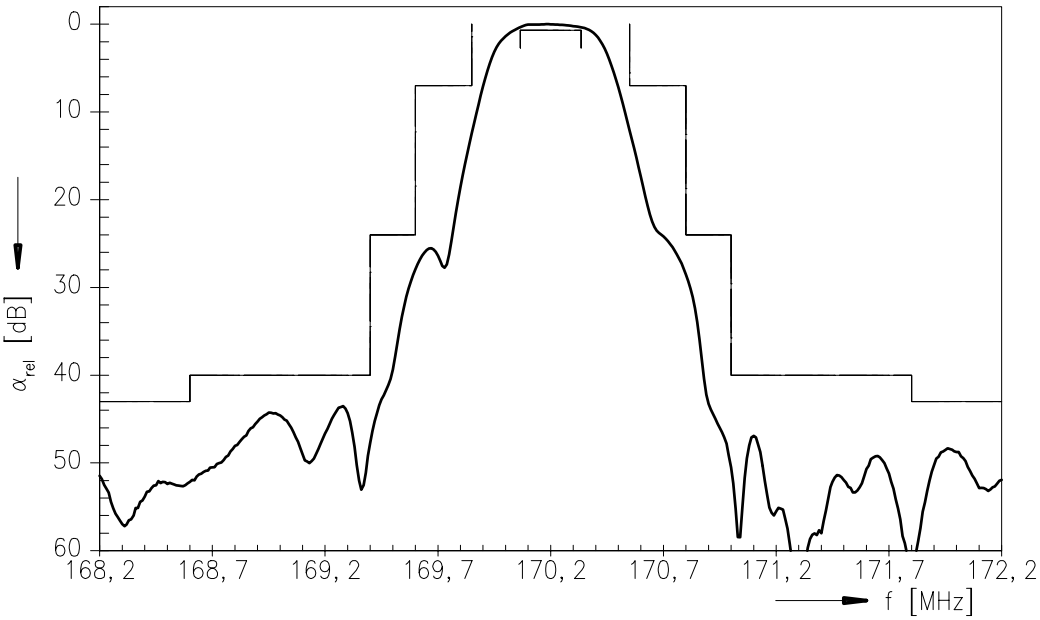
Matching network to 200 Ω balanced

(Element values depend upon PCB layout)

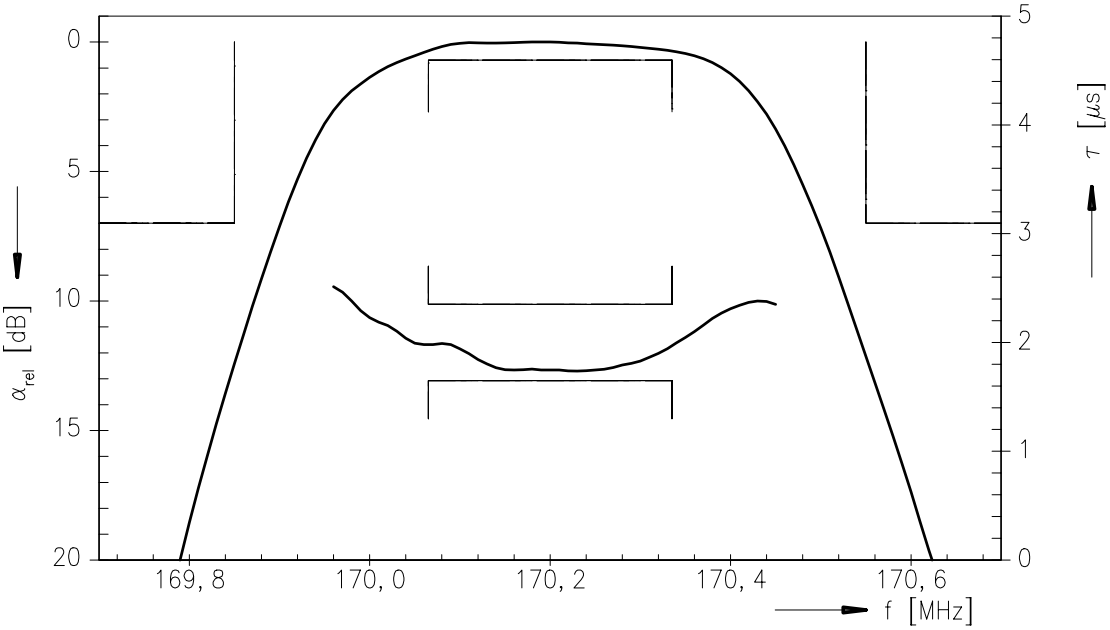


C_{p1} = 17,7 pF
L_{s2} = 27,0 nH
L_{s3} = 27,0 nH
C_{p4} = 17,7 pF

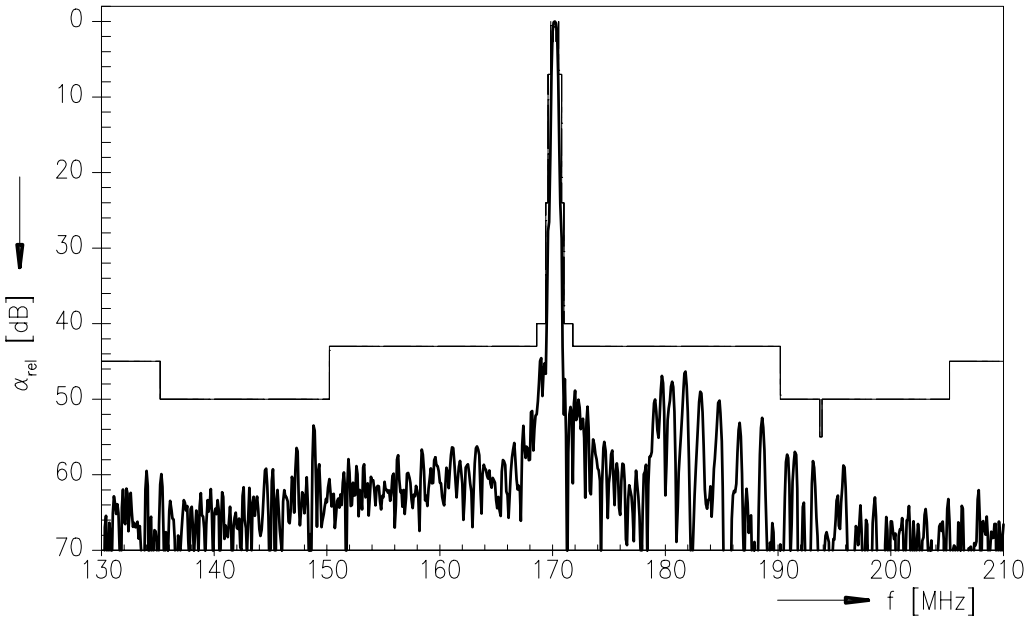
Normalized frequency response



Normalized frequency response (passband)



Transfer function



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