EPCOS

SAW Components

Data Sheet B3842

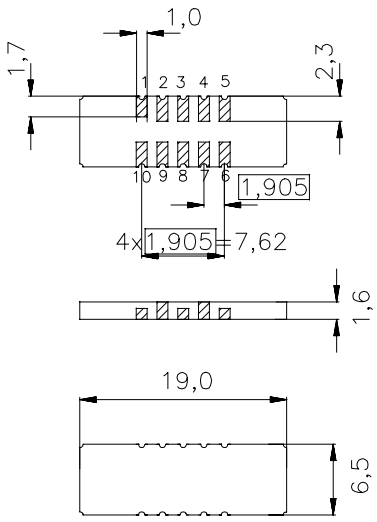
Ceramic package **DCC18**

Features

- Low-loss IF filter for GSM-EDGE base station
- Temperature stable
- Balanced or unbalanced operation possible
- Ceramic SMD package

Terminals

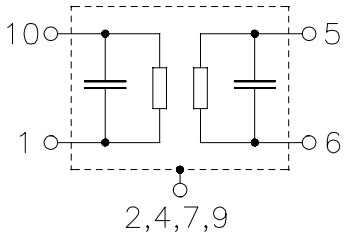
- Gold plated



Dimensions in mm, approx. weight 0,8 g

Pin configuration

10	Input
1	Input ground
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
B3842	B39171-B3842-U210	C61157-A7-A54	F61074-V8069-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 and matching network
Terminating load impedance: Z_L = 50 Ω or 150 Ω and matching network

			min.	typ.	max.	
Nominal frequency		f_N	—	170,6	—	MHz
Minimum insertion attenuation		α_{min}	—	6,4	8,0	dB
Pass bandwidth						
	$\alpha_{rel} \le 1{,}0$ dB	B_{1dB}	—	390	—	kHz
	$\alpha_{rel} \le 3{,}0$ dB	B_{3dB}	—	500	—	kHz
Amplitude ripple (p-p)		$\Delta\alpha$				
	$f_N \pm$ 90 kHz		—	0,2	0,5	dB
	$f_N \pm$ 150 kHz		—	0,5	1,0	dB
Group delay ripple (p-p)		$\Delta\tau$				
	$f_N \pm$ 90 kHz		—	0,2	0,4	µs
	$f_N \pm$ 150 kHz		—	0,4	1,0	µs
Relative attenuation (relative to α_{min})		α_{rel}				
$f_N \pm$ 0,4 MHz ...	$f_N \pm$ 0,6 MHz		13	20	—	dB
$f_N \pm$ 0,6 MHz ...	$f_N \pm$ 0,8 MHz		27	30	—	dB
$f_N \pm$ 0,8 MHz ...	$f_N \pm$ 1,6 MHz		40	43	—	dB
$f_N \pm$ 1,6 MHz ...	$f_N \pm$ 3,0 MHz		43	50	—	dB
$f_N \pm$ 3,0 MHz ...	$f_N \pm$ 5,8 MHz		47	55	—	dB
10,0 MHz ...	f_N – 75,0 MHz		40	70	—	dB
f_N – 75,0 MHz ...	f_N – 35,0 MHz		45	60	—	dB
f_N – 35,0 MHz ...	f_N – 5,8 MHz		50	55	—	dB
f_N + 5,8 MHz ...	f_N + 35,0 MHz [1)]		50	55	—	dB
f_N + 35,0 MHz ...	f_N + 75,0 MHz		45	60	—	dB
f_N + 75,0 MHz ...	f_N + 2,0 GHz		40	60	—	dB
VSWR (Input and output)						
	$f_N \pm$ 150 kHz		—	1,7	2,0	

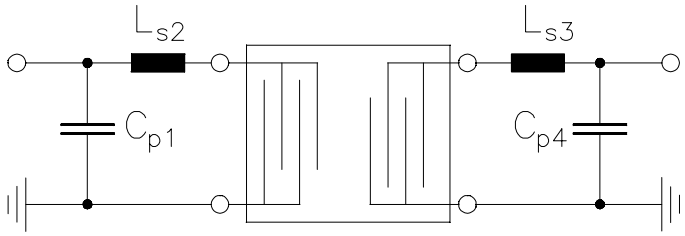
		min.	typ.	max.	
Impulse response attenuation (relative to max.)					
5 µs		10	20	—	dB
10 µs		20	45	—	dB
30 µs		76	90	—	dB
35 µs		79	90	—	dB
40 µs ... 50 µs		80	90	—	dB
Impedance (of unmatched filter) at f_N					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	82 || 30	—	Ω || pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	93 || 29	—	Ω || pF
Temperature coefficient of frequency [2]	TC_f	—	–0,036	—	ppm/K²
Turnover temperature	T_0	—	40	—	°C

[1] Except for a few narrowband responses between 179 and 185 MHz (typ. 47 .. 50 dB)

[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

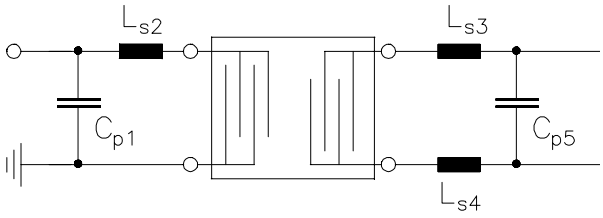
(Element values depend upon PCB layout)



C_{p1} = 33 pF
L_{s2} = 39 nH
L_{s3} = 39 nH
C_{p4} = 33 pF

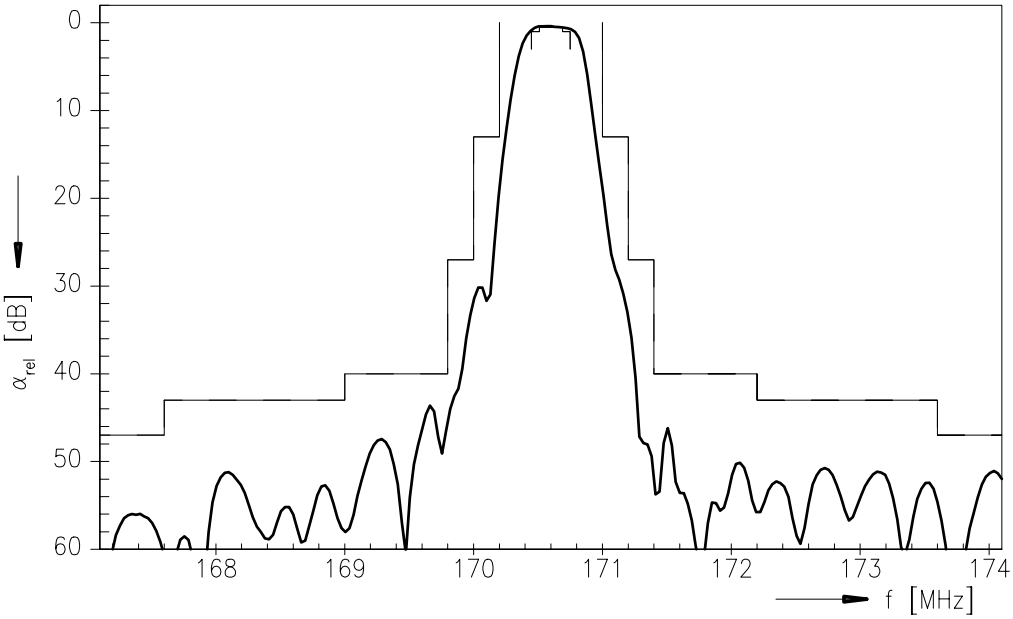
Matching network to 50 Ω single ended (source) and 150 Ω balanced (load)

(Element values depend upon PCB layout)

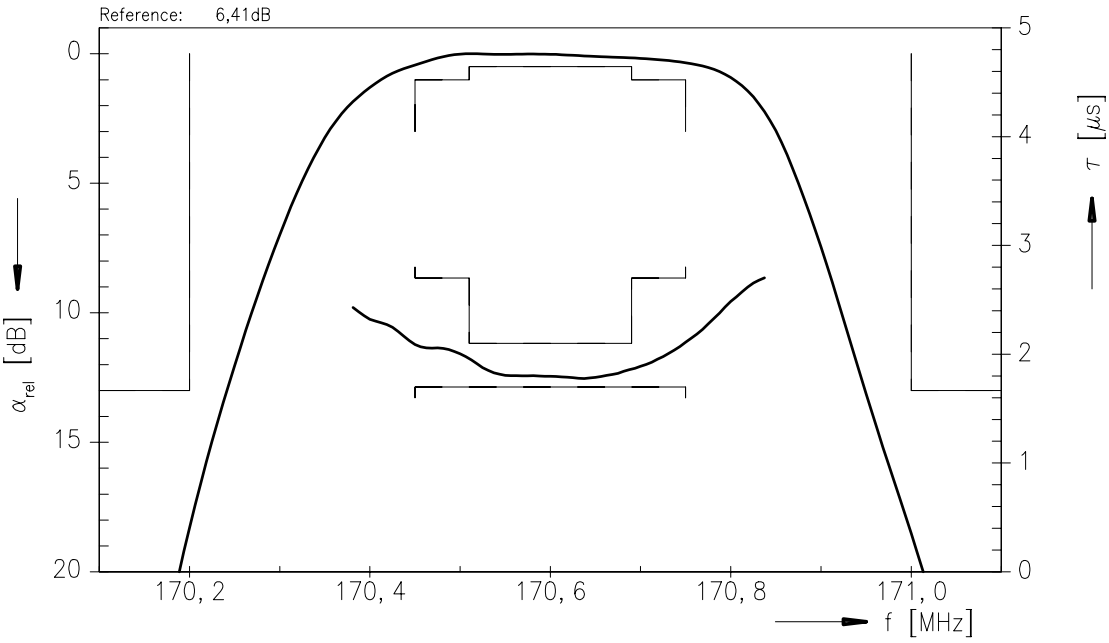


C_{p1} = 33 pF
L_{s2} = 39 nH
L_{s3} = 27 nH
L_{s4} = 27 nH
C_{p5} = 22 pF

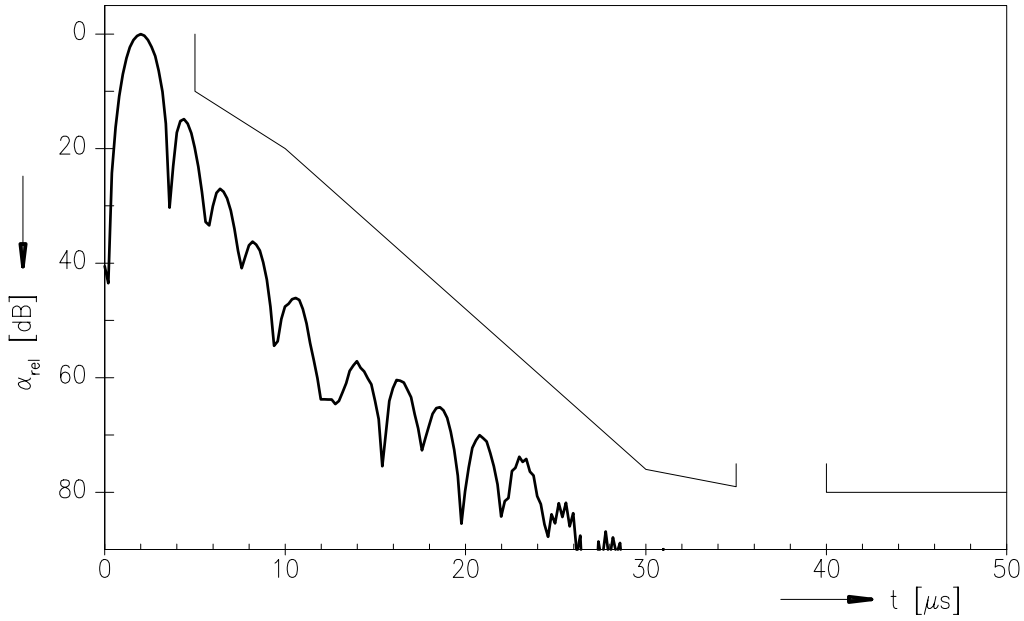
Normalized frequency response



Normalized frequency response (pass band)



Normalized impuls response



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