EPCOS

SAW Components

Data Sheet B3896

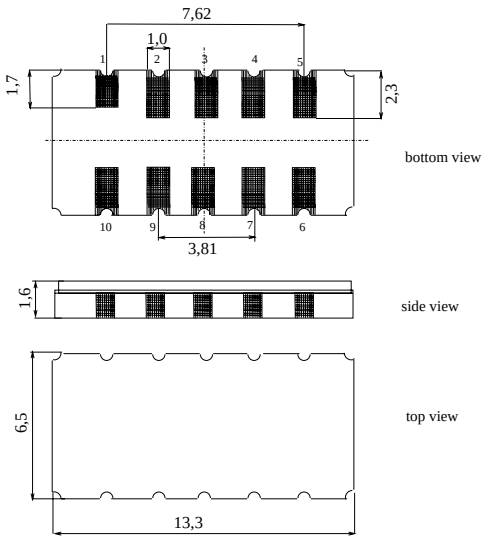
Ceramic package **DCC12A**

Features

- Low-loss IF-filter for WCDMA base stations
- Usable bandwidth 4,0 MHz
- Ceramic SMD package

Terminals

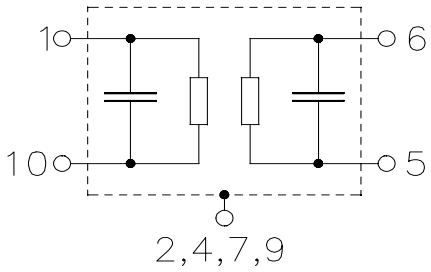
- Gold plated



Dimensions in mm, approx. weight 0,4

Pin configuration

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



Type	Ordering code	Marking and Package according to	Packing according to
B3896	B39171-B3896-H510	C61157-A7-A94	F61074-V8163-Z000

Electrostatic **S**ensitive **D**evice (**ESD**)

Maximum ratings

Operable temperature range	T_A	–40 / +85	°C	
Storage temperature range	T_{stg}	–40 / +85	°C	
DC voltage	V_{DC}	0	V	
Source power	P_s	10	dBm	average over 1 ms
Source power	P_s	20	dBm	peak < 1 µs in passband

Data Sheet

Characteristics

Operating temperature range: T_A = - 40 .. 85 °C
Terminating source impedance: Z_S = 200 Ω balanced and matching network
Terminating load impedance: Z_L = 200 Ω balanced and matching network
Group delay aperture: 150 kHz

		min.	typ.	max.	
Nominal frequency	f_N	—	169,0	—	MHz
Minimum insertion attenuation	α_{min}	—	8,5	10,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm 2{,}0$ MHz		—	0,5	0,9	dB
Group delay ripple (p-p)	$\Delta\tau$				
$f_N \pm 2{,}0$ MHz		—	100	150	ns
Absolute group delay	τ				
mean value within $f_N \pm 2{,}0$ MHz		1150	1175	1200	ns
VSWR[1]					
$f_N \pm 2{,}0$ MHz		—	1,6:1	2,2:1	
Relative attenuation (relative to α_{min})	α_{rel}				
$f_N \pm$ 3,0 MHz ... $f_N \pm$ 3,5 MHz		9	14	—	dB
$f_N \pm$ 3,5 MHz ... $f_N \pm$ 5,0 MHz		23	30	—	dB
f_N –11,0 MHz ... f_N – 5,0 MHz		44	48	—	dB
22 MHz ... 158,0 MHz		50	55	—	dB
f_N + 5,0 MHz ... f_N + 13,0 MHz		40	44	—	dB
f_N +13,0 MHz ... f_N + 23,0 MHz		47	50	—	dB
192,0 MHz ... 500 MHz		50	60	—	dB
500,0 MHz ... 2,5 GHz		40	50	—	dB
Adjacent channel selectivity[2]	*ACS*				
first adjacent channel		23	30	—	dB
second adjacent channel		49	51	—	dB

1) VSWR only guaranteed for the temperature range -25 .. 85 °C
2) Adjacent channels centered at 169 MHz+ k*5 MHz (k=-2,-1,1,2), Supression of HPSK signal with 3,84 MHz bandwidth

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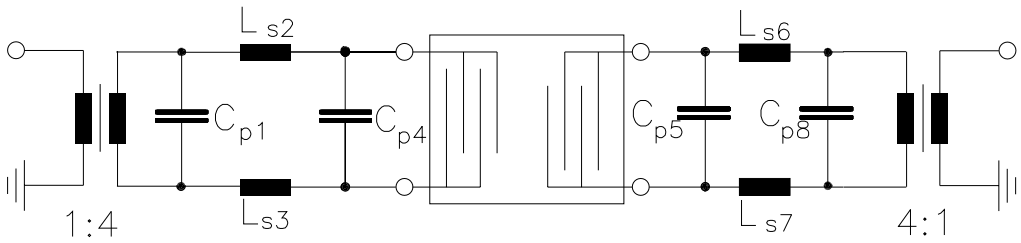
Impedance at f_N (without matching)					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	0,23 || 19	—	kΩ || pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	1,14 || 5,6	—	kΩ || pF
Temperature coefficient of frequency	TC_f	—	–18	—	ppm/K

Matching network to 200 Ω input balanced and 200 Ω output balanced:

4:1 transformer is only required for measurement in a 50 Ω environment

(Element values depend upon PCB layout)



C_{p1} = 22 pF

L_{s2} = 27 nH

L_{s3} = 27 nH

C_{p4} = 5,6 pF

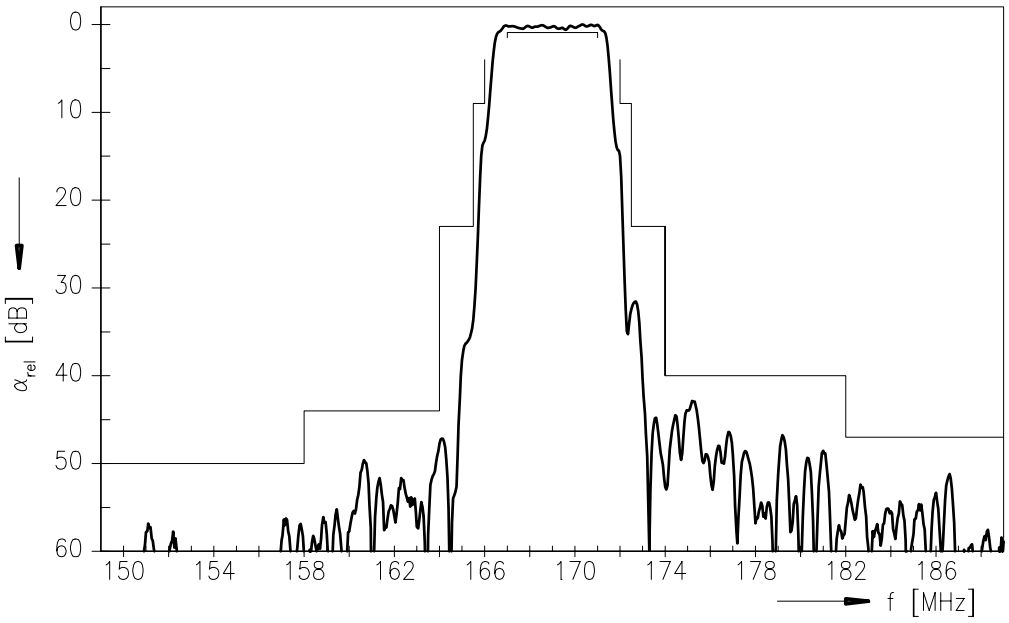
C_{p5} = 1,2 pF

L_{s6} = 82 nH

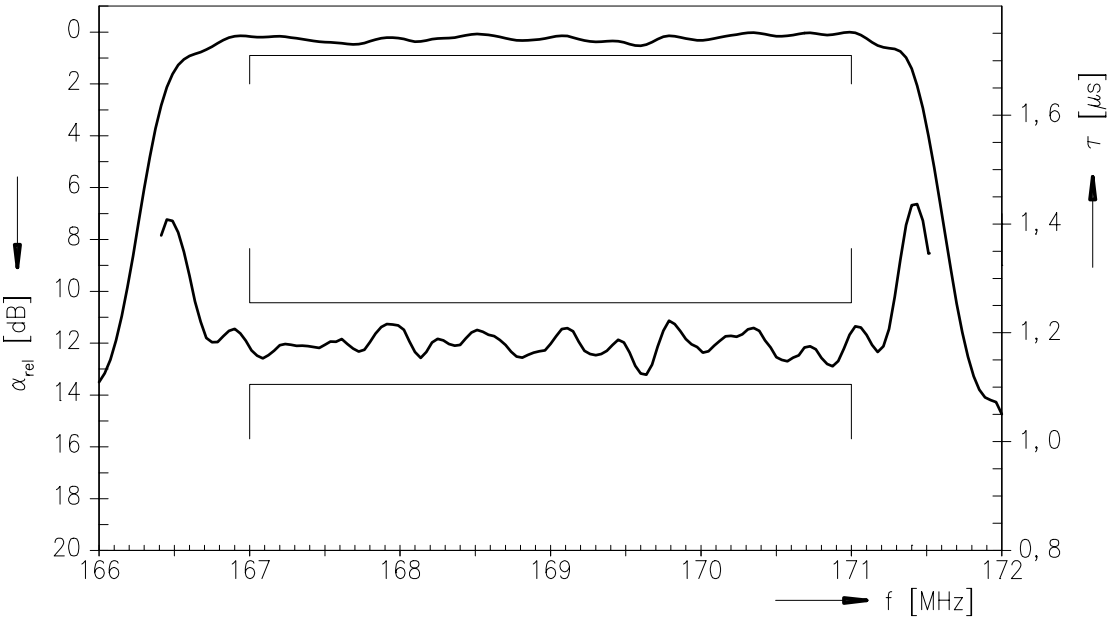
L_{s7} = 82 nH

C_{p8} = 15 pF

Normalized transfer function



Normalized transfer function (pass band)



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