EPCOS

SAW Components

Data Sheet B3891

Data Sheet

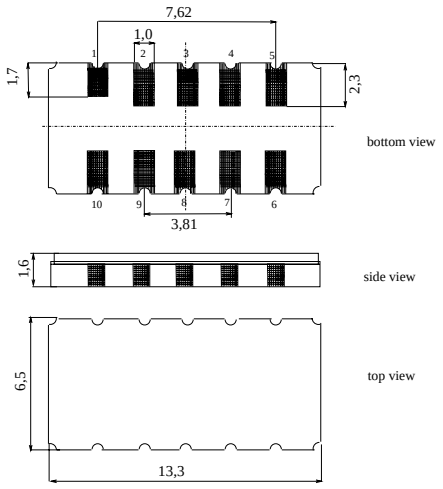
Ceramic package **DCC12A**

Features

- Low-loss IF filter for GSM/EDGE base station, receive path
- Usable passband 250 kHz
- Balanced or unbalanced operation possible
- Temperature stable
- Ceramic SMD package

Terminals

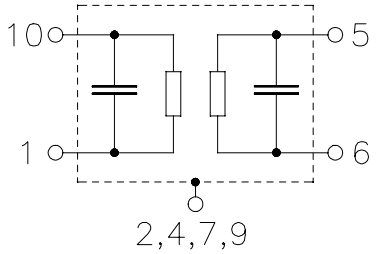
- Gold plated



Dim. in mm, aprox. weight 0,4 g

Pin configuration

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



Type	Ordering code	Marking and Package according to	Packing according to
B3891	B39710-B3891-H510	C61157-A7-A94	F61074-V8163-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	

Data Sheet

Characteristics

Operating temperature range: T = 0 .. 70 °C
Terminating source impedance: Z_S = 200 Ω balanced and matching network
Terminating load impedance: Z_L = 200 Ω balanced and matching network

		min.	typ.	max.	
Nominal frequency	f_N	—	71,0	—	MHz
Minimum insertion attenuation (including matching network)	α_{min}	—	6,5	8,0	dB
Passband width $\alpha_{rel} \leq 1$ dB	$B_{1,0dB}$	250	290	—	kHz
Amplitude ripple	$\Delta\alpha$				
$f_N \pm 125$ kHz		—	0,6	± 1,0	dB
Absolute group delay (at f_N)	τ_N	1,9	2,1	2,3	µs
Group delay ripple (p-p)	$\Delta\tau$				
$f_N \pm 125$ kHz		—	0,5	1,5	µs
Relative attenuation (relative to α_{min})	α_{rel}				
$f_N \pm 300$ kHz ... $f_N \pm 500$ kHz		14	18	—	dB
$f_N \pm 500$ kHz ... $f_N \pm 700$ kHz		30	35	—	dB
$f_N \pm 700$ kHz ... $f_N \pm 3$ MHz		39	45	—	dB
@ $f_N \pm 800$ kHz		41	45	—	dB
$f_N \pm 3$ MHz ... $f_N \pm 35$ MHz		43	60	—	dB
IM3 level	*IM3*				
f1 = f_N- 0,8 MHz, input power -14 dBm f2 = f_N- 1,6 MHz, input power -14 dBm @ f_N		—	—	-95	dBm
f1 = f_N+ 0,8 MHz, input power -14 dBm f2 = f_N+1,6 MHz, input power -14 dBm @ f_N		—	—	-95	dBm
Temperature coefficient of frequency [1]	TC_f	—	– 0,036	—	ppm/K²
Turnover temperature	T_0	—	25	—	°C

[1] Temperature dependance of f_c: $f_c(T_A) = f_c(T_0)(1 + TC_f(T_A - T_0)^2)$

Characteristics (extended temperature range)

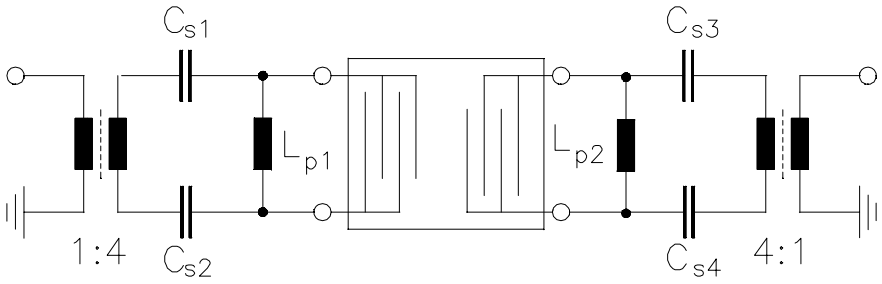
Operating temperature range: T = -40 .. +85 °C
Terminating source impedance: Z_S = 200 Ω balanced and matching network
Terminating load impedance: Z_L = 200 Ω balanced and matching network

		min.	typ.	max.	
Nominal frequency	f_N	—	71,0	—	MHz
Minimum insertion attenuation (including matching network)	α_{min}	—	6,5	8,5	dB
Passband width $\alpha_{rel} \leq 1$ dB	$B_{1,0dB}$	250	290	—	kHz
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm 125$ kHz		—	0,6	± 1,5	dB
Absolute group delay (at f_N)	τ_N	1,9	2,1	2,3	µs
Group delay ripple (p-p)	$\Delta\tau$				
$f_N \pm 125$ kHz		—	0,5	1,5	µs
Relative attenuation (relative to α_{min})	α_{rel}				
$f_N \pm 300$ kHz ... $f_N \pm 500$ kHz		12	18	—	dB
$f_N \pm 500$ kHz ... $f_N \pm 700$ kHz		30	35	—	dB
$f_N \pm 700$ kHz ... $f_N \pm 3$ MHz		39	45	—	dB
@ $f_N \pm 800$ kHz		41	45	—	dB
$f_N \pm 3$ MHz ... $f_N \pm 35$ MHz		43	60	—	dB
IM3 level	*IM3*				
f1 = f_N- 0,8 MHz, input power -14 dBm f2 = f_N- 1,6 MHz, input power -14 dBm @ f_N		—	—	-95	dBm
f1 = f_N+ 0,8 MHz, input power -14 dBm f2 = f_N+1,6 MHz, input power -14 dBm @ f_N		—	—	-95	dBm
Temperature coefficient of frequency [1]	TC_f	—	– 0,036	—	ppm/K²
Turnover temperature	T_0	—	25	—	°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 200 Ω

Transformers are only required for measurement in a 50 Ω environment



C_{s1} = C_{s2} = 12 pF

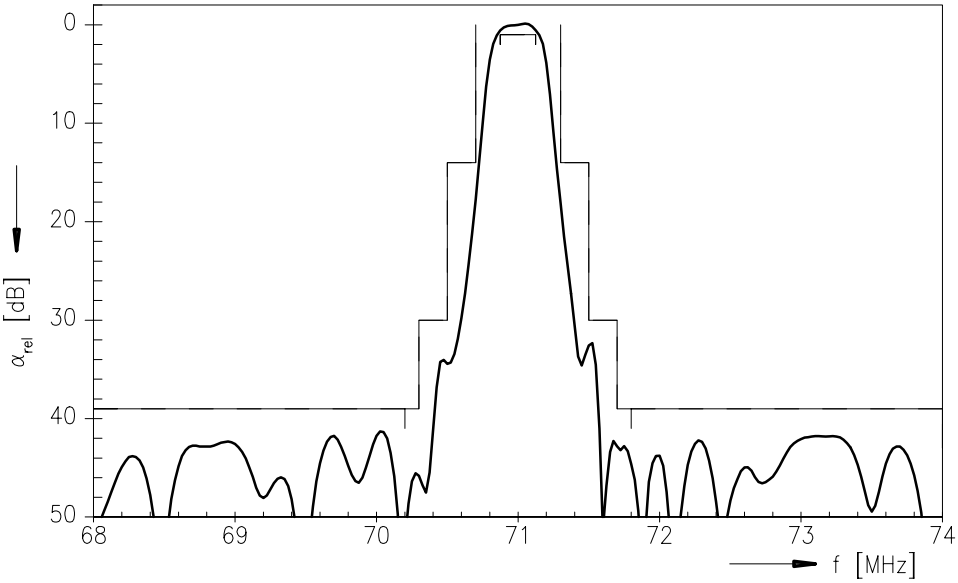
L_{p1} = 220 nH

C_{s3} = C_{s4} = 18 pF

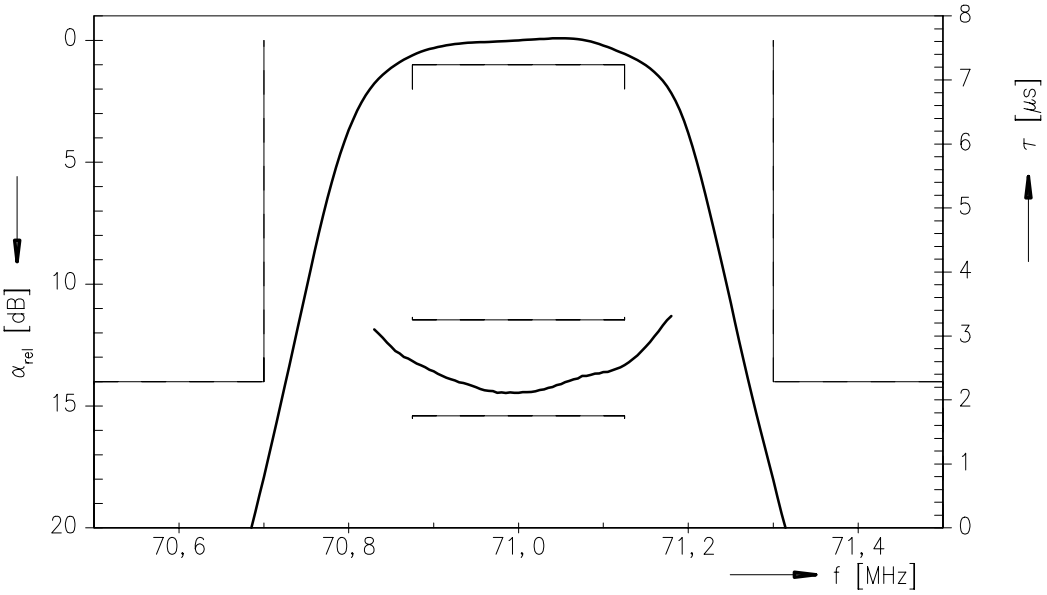
L_{p2} = 180 nH

Element values depend upon board layout

Normalized frequency response



Normalized frequency response (pass band)



Published by EPCOS AG
Surface Acoustic Wave Components Division, SAW MC IS
P.O. Box 80 17 09, 81617 Munich, GERMANY

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