EPCOS

SAW Components

Data Sheet B3891

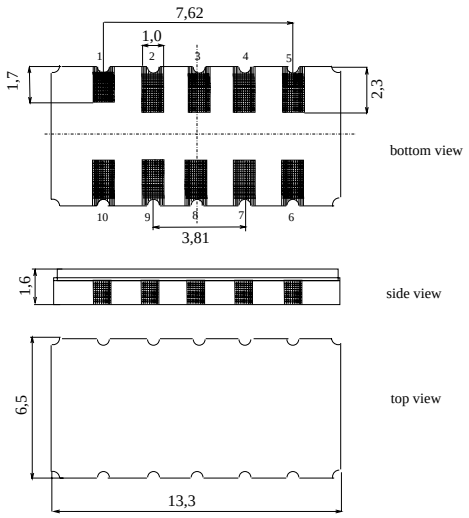
Ceramic package **DCC12A**

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

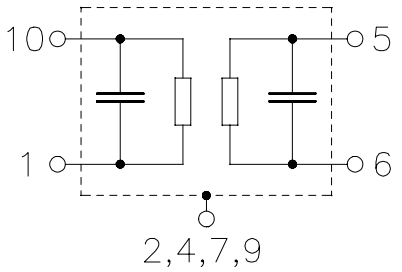
- Gold plated



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	

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 $\alpha_{rel} \le 1$ 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)

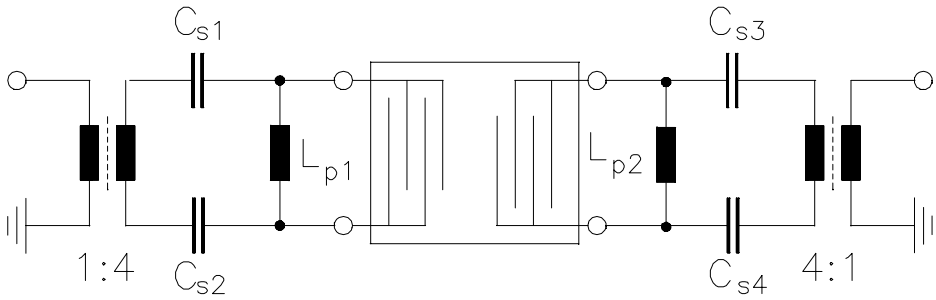
Operating temperature range: T = -40 .. +85 ˚C
Terminating source impedance: Z_S = 200 Ω balanced and matching network
Terminating load impedance: Z_L = 200 Ω balanced and matching network

		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 $\alpha_{rel} \le 1$ 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

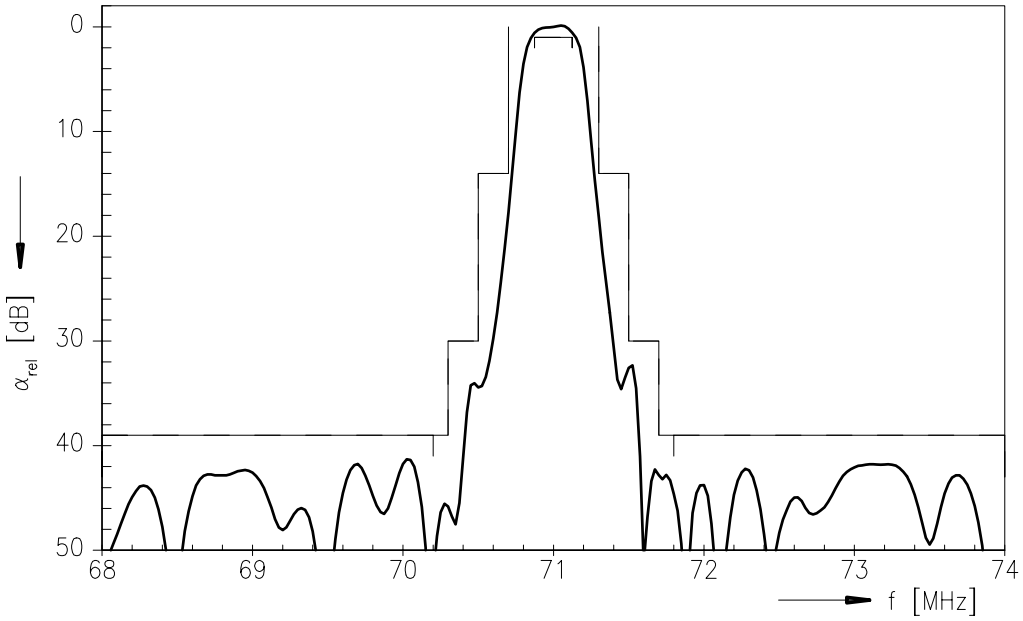
C_{s3} = C_{s4} = 18 pF

L_{p1} = 220 nH

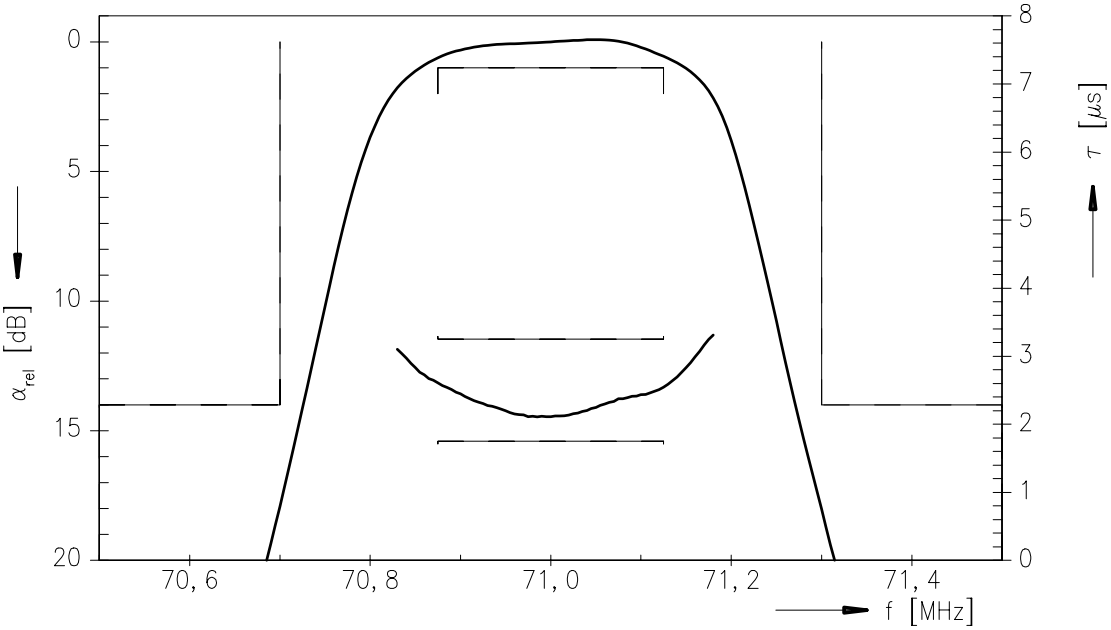
L_{p2} = 180 nH

Element values depend upon board layout

Normalized frequency response



Normalized frequency response (pass band)



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