EPCOS

IF Filters for CDMA Cellular Phones

Series/Type: **B7305**

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B39191B7305A810	B39191B5006H310	2005-05-13	2005-06-30	2005-09-30

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EPCOS

SAW Components

Data Sheet B7305

Data Sheet

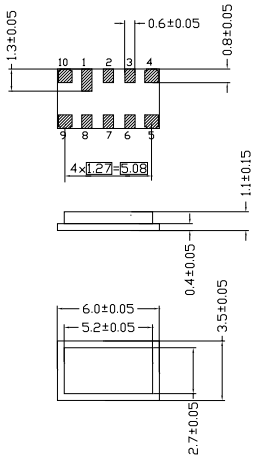
DCS10A **C**hip-**S**ize **S**AW Filter **P**ackage

Features

- IF filter for mobile telephone
- Channel selection in W-CDMA systems
- **C**hip-**S**ize **S**AW Filter **P**ackage
- Balanced and unbalanced operation possible
- Package for **S**urface **M**ounted **T**echnology (SMT)

Terminals

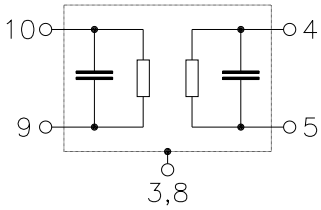
- Gold-plated Ni



Dimensions in mm, approx. weight 0,1 g

Pin configuration

9	Input
10	Balanced input or input ground
4	Output
5	Balanced output or output ground
1, 2, 6, 7	To be grounded
3, 8	Case – ground



Type	Ordering code	Marking and Package according to	Packing according to
B7305	B39191-B7305-A810	C61157-A7-A66	F61074-V8103-Z000

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

Maximum ratings

Operating temperature range	T	–20 / +85	°C	
Storage temperature range	T_{stg}	–40 / +85	°C	
DC voltage	V_{DC}	0	V	
Source power	P_s	10	dBm	

Characteristics[1)]

Operating temperature range: T = 25 °C
Terminating source impedance: Z_S = 0,9 kΩ || 60 nH
Terminating load impedance: Z_L = 1,1 kΩ || 90 nH

		min.	typ.	max.	
Nominal frequency	f_N	—	190,0	—	MHz
Minimum insertion attenuation (including losses in matching circuit)	α_{min}		8,8	9,2	dB
Passband width $\alpha_{rel} \leq$ 2,0 dB	$B_{2,0dB}$	3,84	4,2	—	MHz
Amplitude ripple (p-p)	$\Delta\alpha$				
f_N – 2,00 MHz ... f_N + 2,00 MHz		—	1,5	1,8	dB
f_N – 1,92 MHz ... f_N + 1,92 MHz		—	0,9	1,5	dB
f_N – 1,5 MHz ... f_N + 1,5 MHz		—	0,7	1,1	dB
Deviation of phase from linearity (rms)	$\Delta\varphi$				
f_N – 1,92 MHz ... f_N + 1,92 MHz		—	1,5	2,0	°
Group delay deviation	ns				
f_N – 1,92 MHz ... f_N + 1,92 MHz		—	110	150	
Relative attenuation (relative to α_{min})	α_{rel}				
DC ... f_N – 20,0 MHz		45,0	50,0	—	dB
f_N – 20,0 MHz ... f_N – 10,0 MHz		35,0	41,0	—	dB
f_N – 10,0 MHz ... f_N – 5,0 MHz		30,0	34,0	—	dB
f_N + 5,0 MHz ... f_N + 10,0 MHz		27,0	31,0	—	dB
f_N + 10,0 MHz ... f_N + 20,0 MHz		32,0	36,0	—	dB
f_N + 20,0 MHz ... 350,0 MHz		37,0	42,0	—	dB
Temperature coefficient of frequency[2)]	TC_f	—	–20	—	ppm/K

[1)] The specifications on this page hold for balanced / balanced operation (cf. test matching network 2 on p. 5). The specified minimum insertion attenuation does not include the losses in the transformers of the test circuit.

[2)] Temperature dependence of f_c: $f_c(T) = f_c(T_0)(1 + TC_f(T - T_0))$

Characteristics [1)]

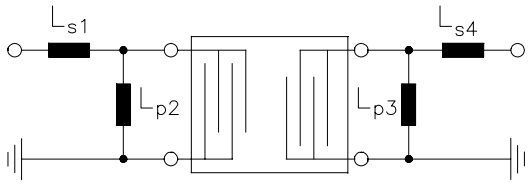
Operating temperature range: T = -20 .. +85 °C
Terminating source impedance: Z_S = 0,9 kΩ || 60 nH
Terminating load impedance: Z_L = 1,1 kΩ || 90 nH

		min.	typ.	max.	
Nominal frequency	f_N	—	190,0	—	MHz
Minimum insertion attenuation					
(including losses in matching circuit)	α_{min}		8,8	9,8	dB
Passband width					
$\alpha_{rel} \leq$ 2.0 dB	$B_{2,2dB}$	3,84	4,2	—	MHz
Amplitude ripple (p-p)	$\Delta\alpha$				
f_N – 2,00 MHz ... f_N + 2,00 MHz			1,5	2,4	
f_N – 1,92 MHz ... f_N + 1,92 MHz		—	0,9	2,1	dB
f_N – 1,5 MHz ... f_N + 1,5 MHz		—	0,7	1,1	dB
Deviation of phase from linearity (rms)	$\Delta\varphi$				
f_N – 1,92 MHz ... f_N + 1,92 MHz		—	1,5	2,5	°
Group delay deviation	ns				
f_N – 1,92 MHz ... f_N + 1,92 MHz		—	110	180	
Relative attenuation (relative to α_{min})	α_{rel}				
DC ... f_N – 20,0 MHz		45,0	50,0	—	dB
f_N – 20,0 MHz ... f_N – 10,0 MHz		32,0	41,0	—	dB
f_N – 10,0 MHz ... f_N – 5,0 MHz		28,0	34,0	—	dB
f_N + 5,0 MHz ... f_N + 10,0 MHz		27,0	31,0	—	dB
f_N + 10,0 MHz ... f_N + 20,0 MHz		30,5	36,0	—	dB
f_N + 20,0 MHz ... 350 MHz		37,0	42,0	—	dB
Temperature coefficient of frequency [2)]	TC_f	—	–20	—	ppm/K

[1)] The specifications on this page hold for balanced / balanced operation (cf. test matching network 2 on p. 5). The specified minimum insertion attenuation does not include the losses in the transformers of the test circuit.

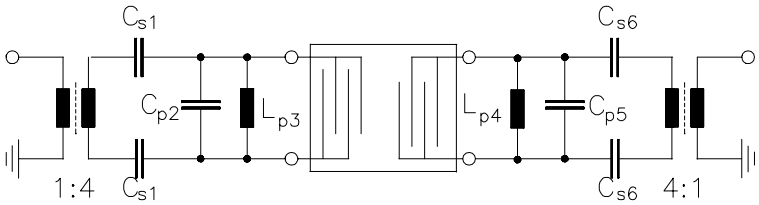
[2)] Temperature dependence of f_c: $f_c(T) = f_c(T_0)(1 + TC_f(T - T_0))$

Test matching network 1 for unbalanced operation in 50-Ω environment (element values depend on PCB layout)**:**



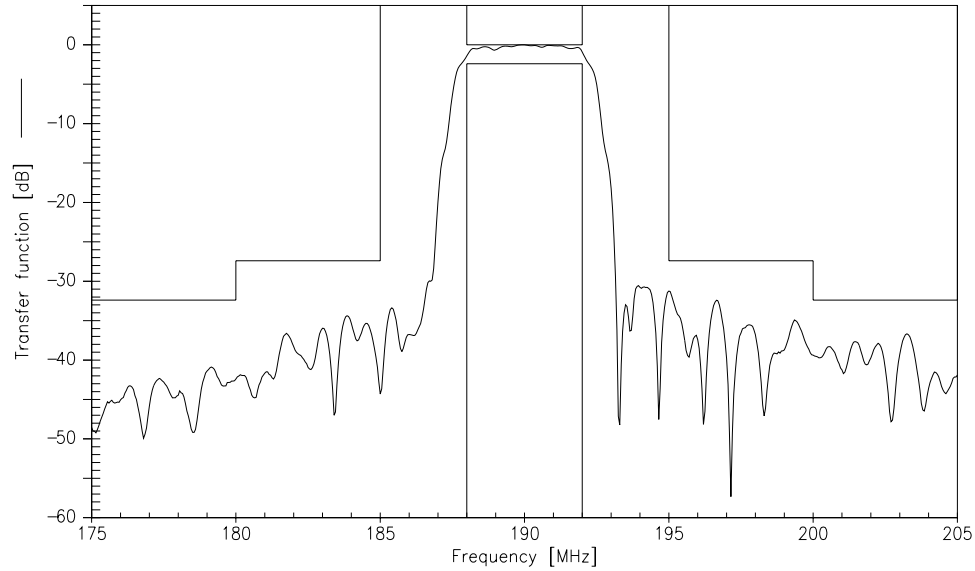
Ls1 = 180 nH
Lp2 = 100 nH
Lp3 = 150 nH
Ls4 = 200 nH
Coils: Coilcraft 1008HQ

Test matching network 2 for balanced operation in 50-Ω environment (element values depend on PCB layout):)

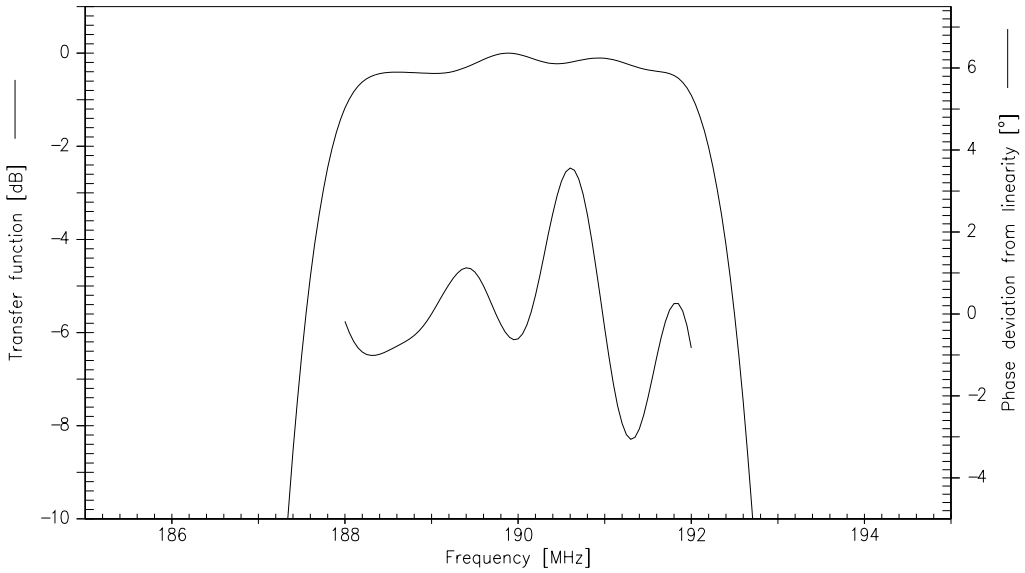


Cs1 = Cs6 = 4.7 pF
Cp2 = Cp5 = tbd
Lp3 = 47 nH
Lp4 = 68 nH
Coils: Coilcraft 1008HQ
Transformers: 1:4 Toko 616DB1004

Transfer function:



Transfer function and phase characteristics (pass band):



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