



SAW Components

Data Sheet B7304





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Low-Loss Filter for Mobile Communication

225,0 MHz

Data Sheet



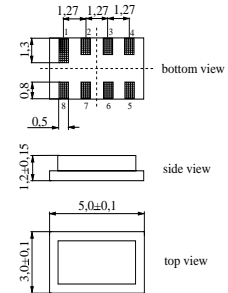
Chip Sized SAW Package DCS8A

Features

- Low-loss IF filter for mobile telephone
- Channel selection in GSM, PCN, PCS systems
- Chip Sized SAW Package
- expansion coil for minimum insertion attenuation and optimum bandwidth adjustment

Terminals

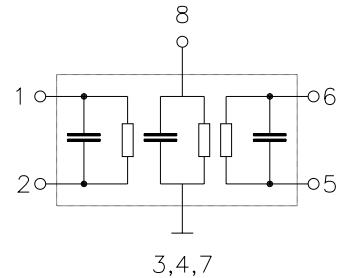
- Gold-plated Ni



Dimensions in mm, approx. weight 0,05 g

Pin configuration

- | | |
|---------|-----------------|
| 1, 2 | Input balanced |
| 5, 6 | Output balanced |
| 3, 4, 7 | Ground |
| 8 | Expansion coil |



Type	Ordering code	Marking and Package according to	Packing according to
B7304	B39231-B7304-A910	C61157-A7-A65	F61074-V8102-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T_A	- 25/+ 80	°C
Storage temperature range	T_{stg}	- 40/+ 85	°C
DC voltage	V_{DC}	3	V
Source power	P_s	10	dBm



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Characteristics

Operating temperature range: $T = -25\text{ °C} \dots +80\text{ °C}$
 Terminating source impedance: $Z_S = 1000\ \Omega \parallel -1,2\text{ pF}$
 Terminating load impedance: $Z_L = 1000\ \Omega \parallel -1,2\text{ pF}$

		min.	typ.	max.	
Nominal frequency	f_N	—	225,00	—	MHz
Maximum insertion attenuation (Including losses in matching circuit)	α_{\max}	—	5,5	6,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N - 65.0\text{ kHz} \dots f_N + 65.0\text{ kHz}$		—	0,3	2,0	dB
$f_N - 70.0\text{ kHz} \dots f_N + 70.0\text{ kHz}$		—	0,4	3,0	dB
Group delay ripple (p-p)	$\Delta\tau$				
$f_N - 70.0\text{ kHz} \dots f_N + 70.0\text{ kHz}$		—	0,8	2,5	μs
Relative attenuation (relative to α_{\max})	α_{rel}				
$f_N - 25,00\text{ MHz} \dots f_N - 3,00\text{ MHz}$		45	66	—	dB
$f_N - 3,00\text{ MHz} \dots f_N - 1,60\text{ MHz}$		43	64	—	dB
$f_N - 1,60\text{ MHz} \dots f_N - 0,60\text{ MHz}$		38	49	—	dB
$f_N - 0,60\text{ MHz} \dots f_N - 0,40\text{ MHz}$		27	33	—	dB
$f_N - 0,40\text{ MHz} \dots f_N - 0,23\text{ MHz}$		8	16	—	dB
$f_N + 0,23\text{ MHz} \dots f_N + 0,40\text{ MHz}$		8	14	—	dB
$f_N + 0,40\text{ MHz} \dots f_N + 0,60\text{ MHz}$		27	30	—	dB
$f_N + 0,60\text{ MHz} \dots f_N + 1,60\text{ MHz}$		38	43	—	dB
$f_N + 1,60\text{ MHz} \dots f_N + 3,00\text{ MHz}$		43	60	—	dB
$f_N + 3,00\text{ MHz} \dots f_N + 25,00\text{ MHz}$		45	53	—	dB
Impedance within pass band					
Input: $Z_{\text{IN}} = R_{\text{IN}} \parallel C_{\text{IN}}$		—	1000 \parallel 1,2	—	$\Omega \parallel \text{pF}$
Output: $Z_{\text{OUT}} = R_{\text{OUT}} \parallel C_{\text{OUT}}$		—	1000 \parallel 1,2	—	$\Omega \parallel \text{pF}$
Temperature coefficient of frequency ¹⁾	TC_f	—	-0,039	—	ppm/K ²
Frequency inversion point	T_0	—	25	—	°C

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



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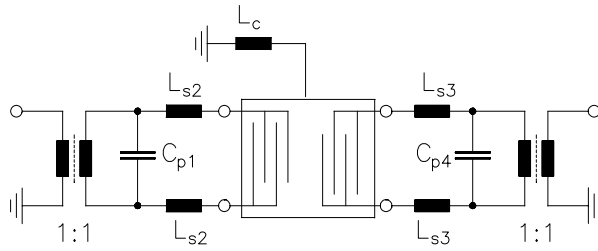
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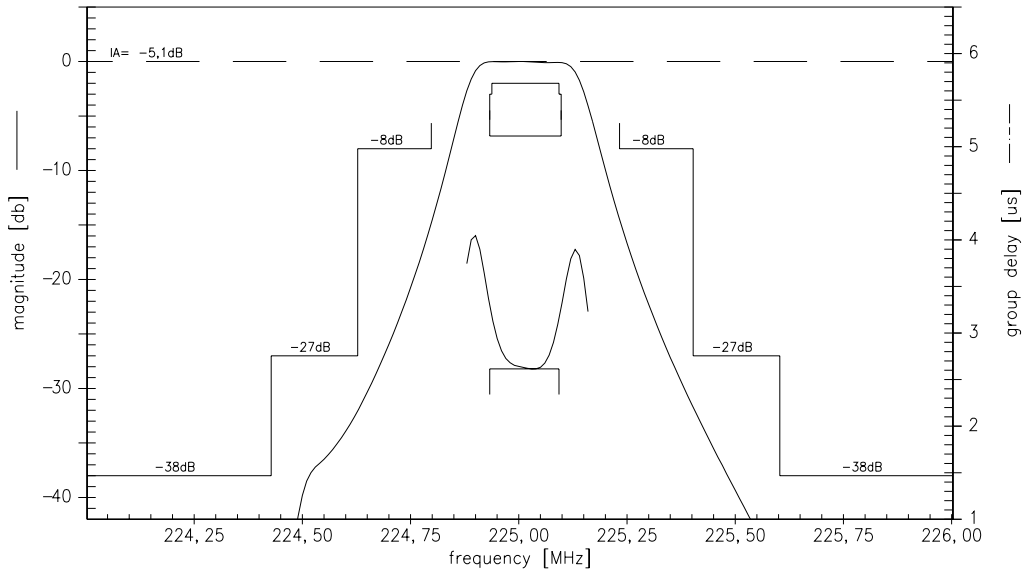
Test matching network to 50Ω, low pass example (actual element values depend on PCB layout. S-parameters of transformers TOKO B5FL available on request):



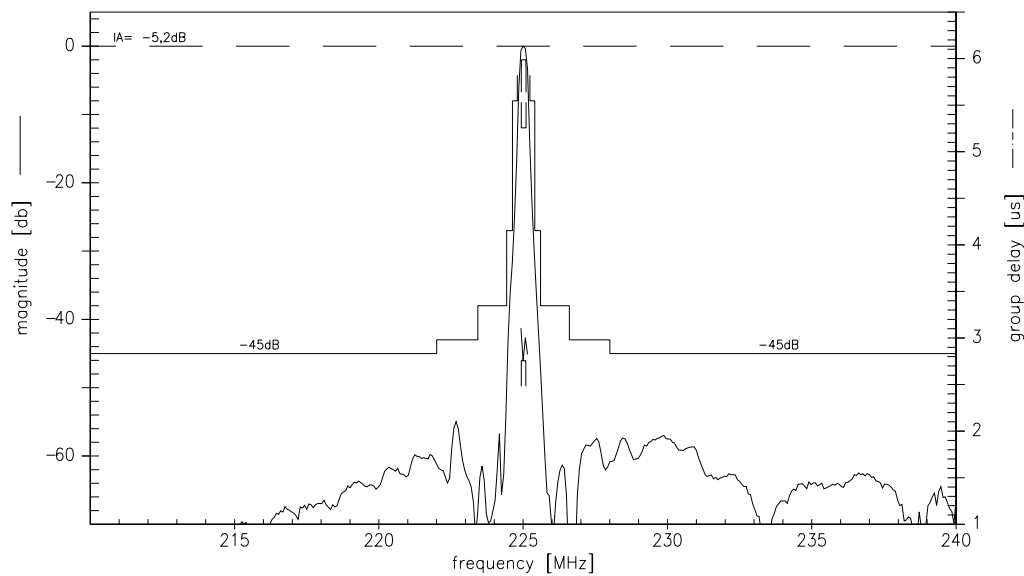
$$\begin{aligned} L_c &= 82 \text{ nH} \parallel 1,8 \text{ pF} \\ C_{p1} &= C_{p4} = 2,2 \text{ pF} \\ L_{s2} &= L_{s3} = 39 \text{ nH} \end{aligned}$$



Transfer function (pass band):



Transfer function (wide band):





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