EPCOS

# *SAW Components*

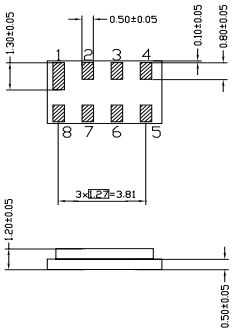
*Data Sheet B7302*

**Data Sheet**

**C**hip **S**ized **S**AW **P**ackage **DCS8A**

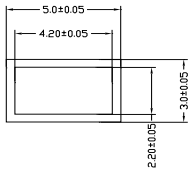
## Features

- Low-loss IF filter for mobile telephone
- Channel selection in GSM, PCN systems
- **C**hip **S**ized **S**AW **P**ackage
- No expansion coil




## Terminals

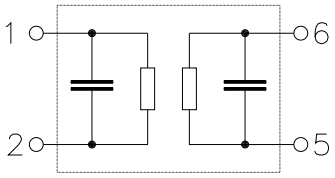
- Gold-plated Ni




Dimensions in mm, approx. weight 0,05 g

## Pin configuration

| | |
|---|---|
| 1 | Input or input ground |
| 2 | Input or balanced input |
| 5 | Output or output ground |
| 6 | Output or balanced output |
| 3, 4, 7, 8 | Ground |




| Type | Ordering code | Marking and Package according to | Packing according to |
|---|---|---|---|
| B7302 | B39361-B7302-A910 | C61157-A7-A65 | F61074-V8102-Z000 |

**E**lectrostatic **S**ensitive **D**evice (**ESD**)

## Maximum ratings

| | | | | |
|---|---|---|---|---|
| Operating temperature range | $T$ | – 20/+ 80 | °C | |
| Storage temperature range | $T_{stg}$ | – 35/+ 85 | °C | |
| DC voltage | $V_{DC}$ | 3 | V | |
| Source power | $P_s$ | 10 | dBm | |

## Characteristics

Operating temperature range: $T$ = -20 to +80 °C
Terminating source impedance: $Z_S$ = 800 Ω || 160 nH
Terminating load impedance: $Z_S$ = 800 Ω || 160 nH

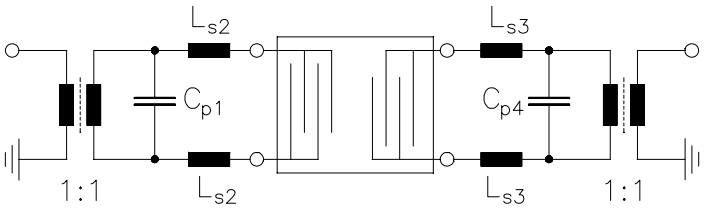
| | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Nominal frequency** | $f_N$ | — | 360,0 | — | MHz |
| **Minimum insertion attenuation** | | | | | |
| (including losses in matching circuit) | $\alpha_{min}$ | — | 5,4 | 6,1 | dB |
| (excluding losses in matching circuit) | | — | 5,1 | 5,5 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | |
| $f_N$ - 67,5 kHz ... $f_N$ + 67,5 kHz | | — | 0,3 | 2,0 | dB |
| $f_N$ - 80,0 kHz ... $f_N$ + 80,0 kHz | | — | 0,4 | 3,0 | dB |
| **Group delay ripple** (p-p) | $\Delta\tau$ | | | | |
| $f_N$ - 67,5 kHz ... $f_N$ + 67,5 kHz | | — | 0,4 | 1,5 | µs |
| $f_N$ - 80,0 kHz ... $f_N$ + 80,0 kHz | | — | 0,5 | 2,0 | µs |
| **Relative attenuation** (relative to $\alpha_{min}$) | $\alpha_{rel}$ | | | | |
| $f_N$ – 15 MHz ... $f_N$ + 3,0 MHz | | 50 | 60 | — | dB |
| $f_N$ – 3,0 MHz ... $f_N$ – 1,6 MHz | | 48 *) | 50 | — | dB |
| $f_N$ – 1,6 MHz ... $f_N$ – 800 kHz | | 40 +) | 56 | — | dB |
| $f_N$ – 800 kHz ... $f_N$ – 600 kHz | | 35 | 46 | — | dB |
| $f_N$ – 600 kHz ... $f_N$ – 400 kHz | | 21 | 41 | — | dB |
| $f_N$ – 400 kHz ... $f_N$ – 300 kHz | | 8 | 24 | — | dB |
| $f_N$ + 300 kHz ... $f_N$ + 400 kHz | | 8 | 17 | — | dB |
| $f_N$ + 400 kHz ... $f_N$ + 600 kHz | | 21 | 26 | — | dB |
| $f_N$ + 600 kHz ... $f_N$ + 800 kHz | | 35 | 38 | — | dB |
| $f_N$ + 800 kHz ... $f_N$ + 1,6 MHz | | 40 | 47 | — | dB |
| $f_N$ + 1,6 MHz ... $f_N$ + 3,0 MHz | | 48 | 59 | — | dB |
| $f_N$ + 3,0 MHz ... $f_N$ + 15 MHz | | 50 | 57 | — | dB |
| **Impedance** within the pass band | | | | | |
| Input: $Z_{IN} = R_{IN} \parallel C_{IN}$ | | — | 800 \|\| 1,25 | — | Ω \|\| pF |
| Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$ | | — | 800 \|\| 1,25 | — | Ω \|\| pF |
| **Temperature coefficient of frequency** 1) | $TC_f$ | — | -0,036 | — | ppm/K² |
| **Turnover temperature** | $T_0$ | — | 40 | — | °C |

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

*) 358,0 MHz < f < 358,3 MHz: spurious response, $B_{3dB}$ < 150kHz, $\alpha_{rel}$ > 45dB

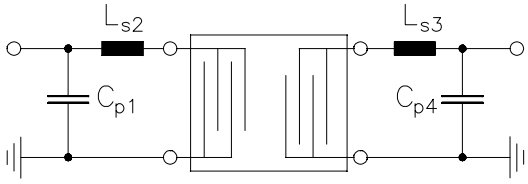
+) 358,9 MHz < f < 359,2 MHz: spurious response, $B_{3dB}$ < 100kHz, $\alpha_{rel}$ > 37dB

**Test matching network to 50Ω,** balanced low pass matching circuit (actual element values depend on PCB layout. Serial inductance values by combination of 39nH / 47nH. S-parameters of transformers TOKO B5FL available on request):



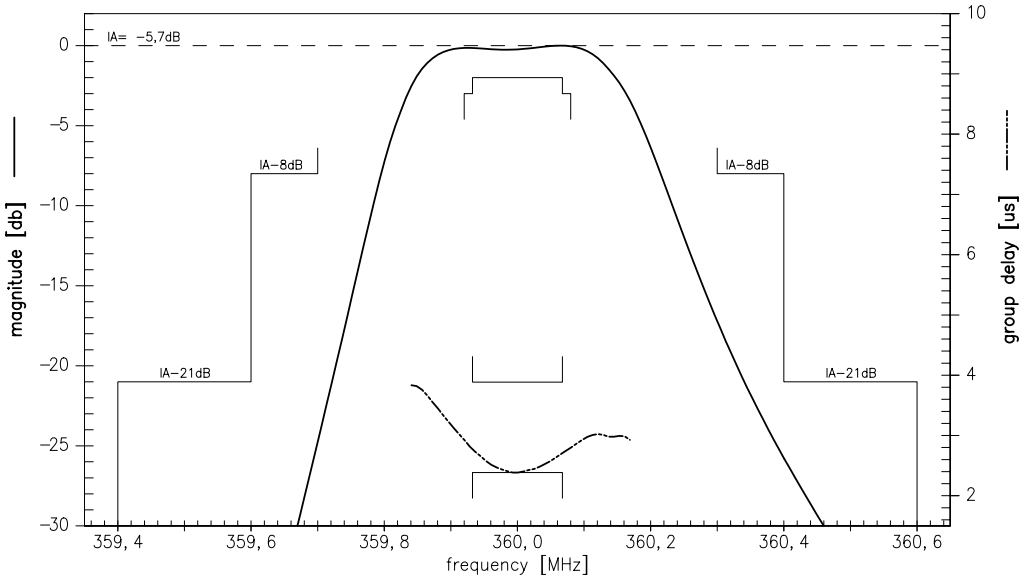

$C_{p1} = C_{p4} =$ 6,8 pF
$L_{s2} = L_{s3} =$ 43 nH

**Test matching network to 50Ω,** single-ended or pseudo-balanced (serial inductances splitted up into both signal paths, improved ultimate rejection) low pass matching circuit (actual element values depend on PCB layout):

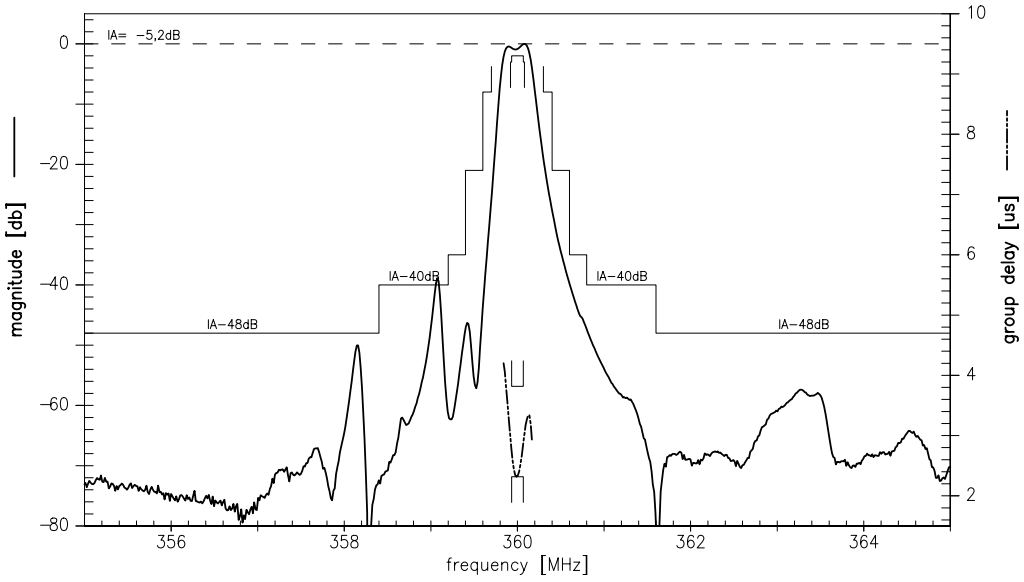



$C_{p1} = C_{p4} =$ 5,6 pF
$L_{s2} = L_{s3} =$ 2 x 39 nH

**Transfer function (**pass band**):**




**Transfer function (**wide band**):**



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