



# SAW Components

Data Sheet B9013





**SAW Components**

**B9013**

**Low-Loss Filter for Mobile Communication**

**1842,5 MHz**

**Data Sheet**



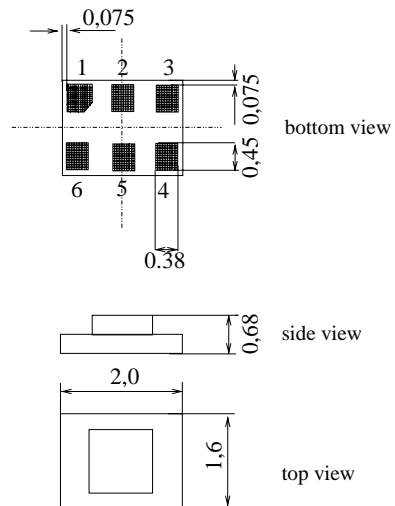
Chip sized SAW package DCS6T

**Features**

- Low-loss RF filter for mobile telephone PCN systems, receive path
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 75 MHz
- Unbalanced to balanced operation
- Impedance transform from 50 Ω to 150 Ω
- Suitable for GPRS class 1 to 12
- Package for **Surface Mount Technology (SMT)**
- Pb-free

**Terminals**

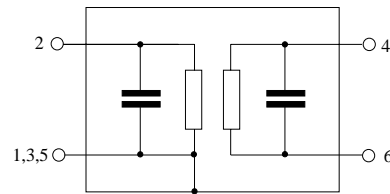
- Ni, gold-plated



Dimensions in mm, approx. weight 0,007 g

**Pin configuration**

- 2 Input, unbalanced
- 4,6 Output, balanced
- 1,3,5 To be grounded



Type	Ordering code	Marking and Package according to	Packing according to
B9013	B39182-B9013-K310	C61157-A7-A128	F61074-V8152-Z000

Electrostatic Sensitive Device (ESD)

**Maximum ratings**

Operable temperature range	$T$	- 20 / + 75	°C	Machine Model, 10 pulses peak power of GSM signal, duty cycle 4:8
Storage temperature range	$T_{stg}$	- 40 / + 85	°C	
DC voltage	$V_{DC}$	5	V	
ESD voltage	$V_{ESD}$	50*	V	
Input Power at				
GSM850, GSM900	$P_{IN}$	15	dBm	
GSM1800, GSM1900	$P_{IN}$	12	dBm	
Tx bands				

\* - acc. to JESD22-A115A (Machine Model), 10 negative & 10 positive pulses



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**Characteristics**

Operating temperature range:  $T = 25^{\circ}\text{C} \pm 2^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 150\ \Omega \parallel 15\ \text{nH}$  (balanced)

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	1842,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\text{max}}$	—	1,8	2,1	dB
1805,0 ... 1880,0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0,5	1,0	dB
1805,0 ... 1880,0 MHz					
<b>Input VSWR</b>		—	2,0	2,4	
1805,0 ... 1880,0 MHz					
<b>Output VSWR</b>		—	2,1	2,4	
1805,0 ... 1880,0 MHz					
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>		-1,0	-0,5 / +0,4	1,0	dB
1805,0 ... 1880,0 MHz					
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}</math>)</b>		-10	-1 / +3	10	°
1805,0 ... 1880,0 MHz					
<b>Attenuation</b>	$\alpha$				
0,0 ... 902,0 MHz		30	52	—	dB
902,0 ... 940,0 MHz		45	52	—	dB
940,0 ... 1705,0 MHz		28	33	—	dB
1705,0 ... 1785,0 MHz		13	16	—	dB
1920,0 ... 1980,0 MHz		15	18	—	dB
1980,0 ... 2030,0 MHz		24	27	—	dB
2030,0 ... 2400,0 MHz		28	33	—	dB
2400,0 ... 2500,0 MHz		32	40	—	dB
2500,0 ... 2775,0 MHz		27	30	—	dB
2775,0 ... 2880,0 MHz		40	48	—	dB
2880,0 ... 3610,0 MHz		28	46	—	dB
3610,0 ... 3760,0 MHz		40	46	—	dB
3760,0 ... 5415,0 MHz		28	45	—	dB
5415,0 ... 5640,0 MHz		35	43	—	dB
5640,0 ... 6000,0 MHz		28	40	—	dB



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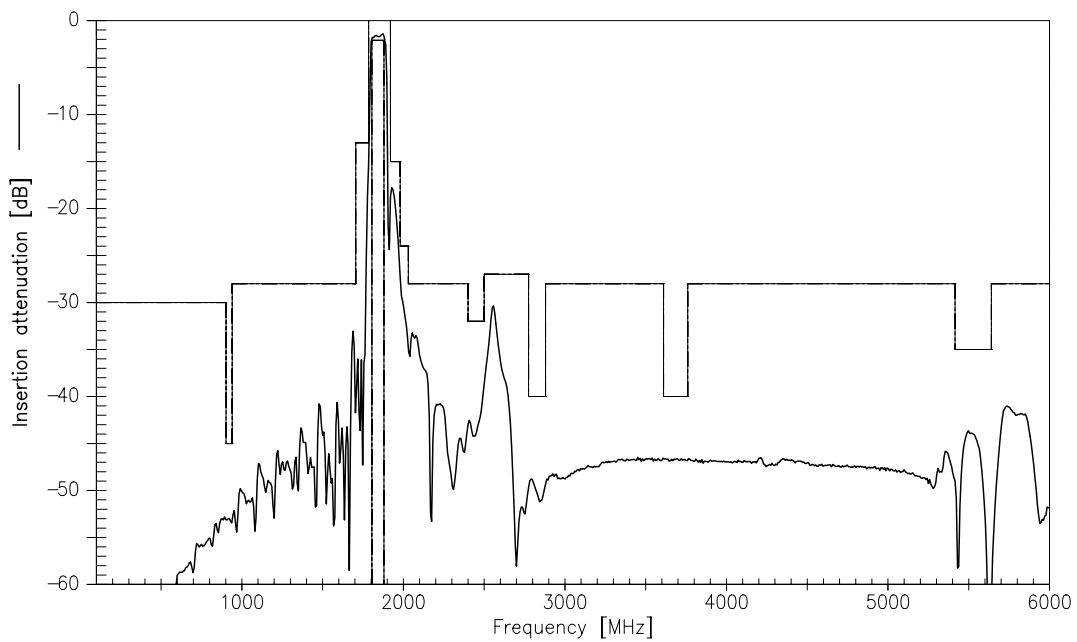
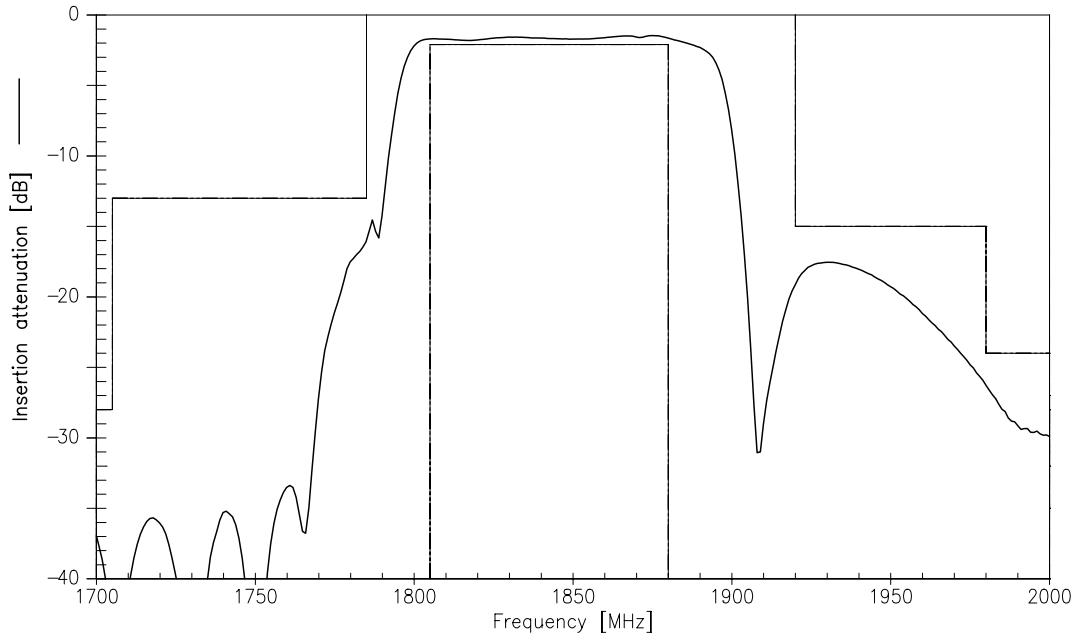
Characteristics

Operating temperature range:  $T = -20$  to  $+75$  °C  
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 150 \Omega \parallel 15$  nH (balanced)

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	1842,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$	—	1,9	2,3	dB
1805,0 ... 1880,0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0,6	1,3	dB
1805,0 ... 1880,0 MHz					
<b>Input VSWR</b>		—	2,0	2,4	
1805,0 ... 1880,0 MHz					
<b>Output VSWR</b>		—	2,1	2,4	
1805,0 ... 1880,0 MHz					
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>		-1,0	-0,5 / +0,7	1,0	dB
1805,0 ... 1880,0 MHz					
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b>		-10	-1 / +3	10	°
1805,0 ... 1880,0 MHz					
<b>Attenuation</b>	$\alpha$				
0,0 ... 902,0 MHz		30	52	—	dB
902,0 ... 940,0 MHz		45	52	—	dB
940,0 ... 1705,0 MHz		28	33	—	dB
1705,0 ... 1785,0 MHz		12	14,5	—	dB
1920,0 ... 1980,0 MHz		15	18	—	dB
1980,0 ... 2030,0 MHz		23	26	—	dB
2030,0 ... 2400,0 MHz		28	33	—	dB
2400,0 ... 2500,0 MHz		32	40	—	dB
2500,0 ... 2775,0 MHz		27	30	—	dB
2775,0 ... 2880,0 MHz		40	48	—	dB
2880,0 ... 3610,0 MHz		28	46	—	dB
3610,0 ... 3760,0 MHz		40	46	—	dB
3760,0 ... 5415,0 MHz		28	45	—	dB
5415,0 ... 5640,0 MHz		35	43	—	dB
5640,0 ... 6000,0 MHz		28	40	—	dB



Transfer function





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