



# SAW Components

Data Sheet B9307





**SAW Components**

**B9307**

**Low-Loss Dual Band Filter for Mobile Communication**

**942,5 / 1842,5 MHz**

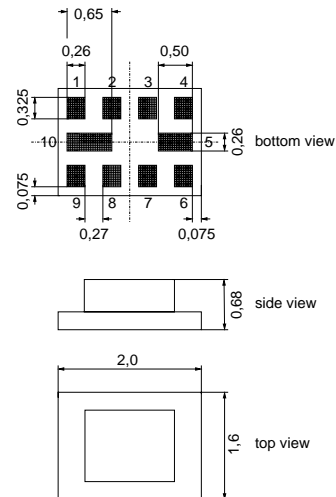
**Data Sheet**



**Chip Sized Saw Package QCS10H**

**Features**

- Low-loss 2in1 RF filter for mobile telephone GSM900/1800 systems, receive path
- Usable passband:  
Filter 1 (GSM900): 35 MHz  
Filter 2 (GSM1800): 75 MHz
- Unbalanced to balanced operation of both filters
- Impedance transformation from 50 Ω to 150 Ω for both filters
- Suitable for GPRS Class 1 to 12
- Ceramic package for **Surface Mounted Technology (SMT)**



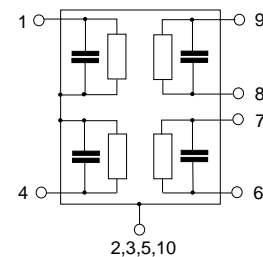
Dimensions in mm, approx. weight 0,008g.

**Terminals**

- Ni, gold-plated

**Pin configuration**

- 1 Input [ Filter 1 ]
- 4 Input [ Filter 2 ]
- 6, 7 Output, balanced [ Filter 2 ]
- 8, 9 Output, balanced [ Filter 1 ]
- 2, 3, 5, 10 Case ground



Type	Ordering code	Marking and Package according to	Packing according to
B9307	B39182-B9307-G110	C61157-A7-A141	F61074-V8152-Z000

**Electrostatic Sensitive Device (ESD)**

**Maximum ratings**

Operable temperature range	$T$	- 40 / + 85	°C	Machine Model, 10 pulses
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, GSM1800, GSM1900 Tx bands:				effective power in the on-state, duty cycle 4:8
Filter 1 (GSM900)	$P_{IN}$	15	dBm	
Filter 2 (GSM1800)	$P_{IN}$	15	dBm	

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



**Characteristics Filter 1 ( GSM900 )**

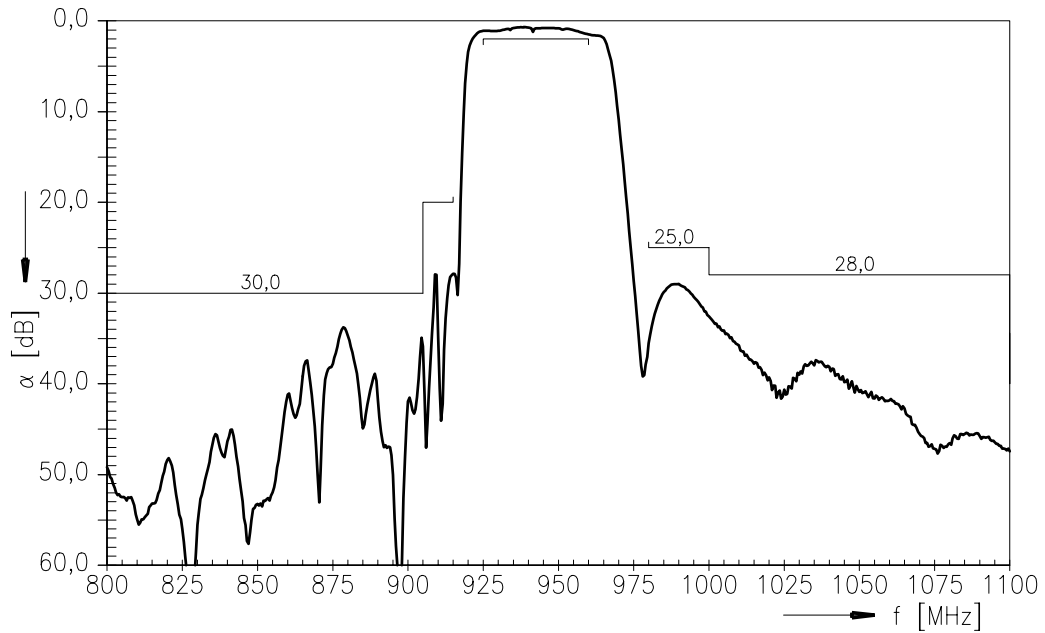
Operating temperature range:  $T = -20$  to  $+75^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 150\ \Omega \parallel 82\text{nH}$  (balanced)

			min.	typ.	max.	
<b>Center frequency</b>	$f_c$		—	942,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\text{max}}$	925,0 ... 960,0 MHz	—	1,5	2,0	dB
		925,0 ... 960,0 MHz 1)	—	1,4	1,7	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	925,0 ... 960,0 MHz	—	0,8	1,2	dB
<b>Input VSWR</b>		925,0 ... 960,0 MHz	—	1,9	2,1	
<b>Output VSWR</b>		925,0 ... 960,0 MHz	—	1,9	2,1	
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>		925,0 ... 960,0 MHz	-1,0	-0,6/+0,7	1,0	dB
<b>Output phase balance (<math>\phi(S_{31})-\phi(S_{21})+180^{\circ}</math>)</b>		925,0 ... 960,0 MHz	-10	-2/+2	10	degree
<b>Attenuation</b>	$\alpha_{\text{min}}$	10,0 ... 480,0 MHz	45	53	—	dB
		480,0 ... 905,0 MHz	30	34	—	dB
		905,0 ... 915,0 MHz	20	25	—	dB
		980,0 ... 1000,0 MHz	25	28	—	dB
		1000,0 ... 1850,0 MHz	28	38	—	dB
		1850,0 ... 1920,0 MHz	40	59	—	dB
		1920,0 ... 6000,0 MHz	35	48	—	dB

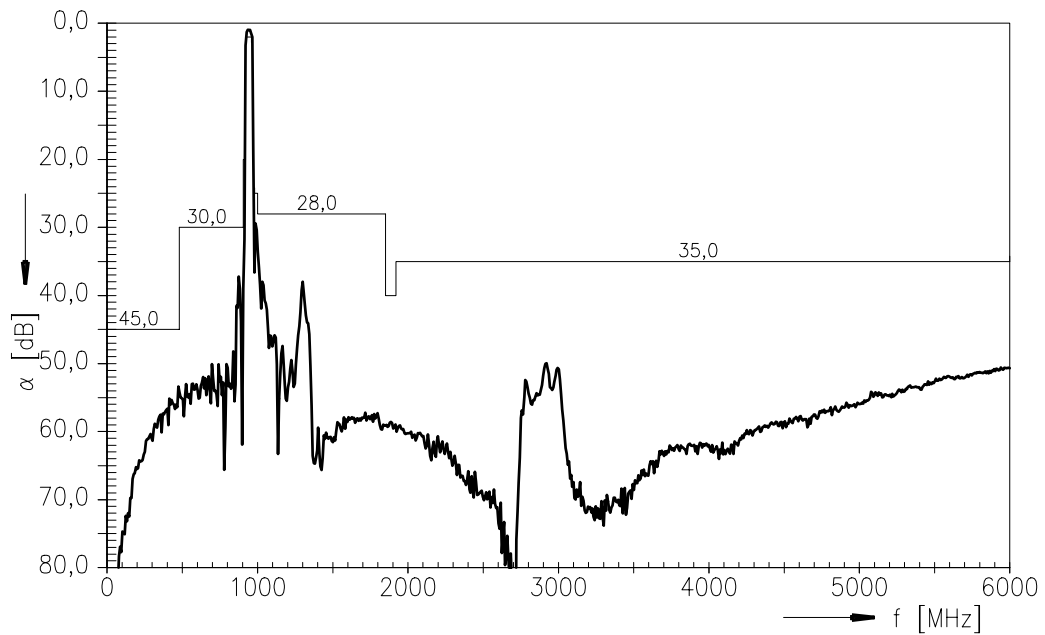
1)  $T = +25 \pm 2^{\circ}\text{C}$



Transfer Function Filter 1 ( GSM900 )



Transfer Function Filter 1 ( GSM900 ) - wideband





**Characteristics Filter 2 ( GSM1800 )**

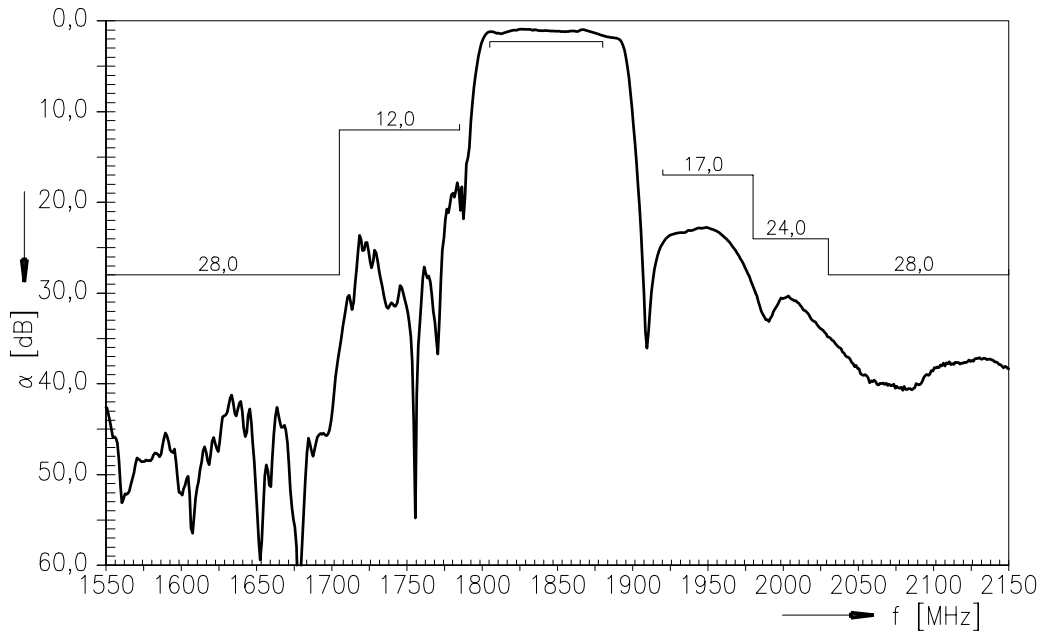
Operating temperature range:  $T = -20$  to  $+75^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 150\ \Omega \parallel 15\text{nH}$  (balanced)

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	1842,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\text{max}}$				
	1805,0 ... 1880,0 MHz	—	1,8	2,3	dB
	1805,0 ... 1880,0 MHz 1)	—	1,6	2,1	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
	1805,0 ... 1880,0 MHz	—	0,7	1,3	dB
<b>Input VSWR</b>					
	1805,0 ... 1880,0 MHz	—	1,8	2,2	
<b>Output VSWR</b>					
	1805,0 ... 1880,0 MHz	—	1,7	2,2	
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>					
	1805,0 ... 1880,0 MHz	-1,0	-0,7/+0,5	+1,0	dB
<b>Output phase balance (<math>\phi(S_{31})-\phi(S_{21})+180^{\circ}</math>)</b>					
	1805,0 ... 1880,0 MHz	-10	-3/+3	+10	°
<b>Attenuation</b>	$\alpha$				
	10,0 ... 940,0 MHz	40	52	—	dB
	940,0 ... 1705,0 MHz	28	42	—	dB
	1705,0 ... 1785,0 MHz	12	15	—	dB
	1920,0 ... 1980,0 MHz	17	23	—	dB
	1980,0 ... 2030,0 MHz	24	28	—	dB
	2030,0 ... 2775,0 MHz	28	34	—	dB
	2775,0 ... 5640,0 MHz	38	43	—	dB
5640,0 ... 6000,0 MHz	28	43	—	dB	

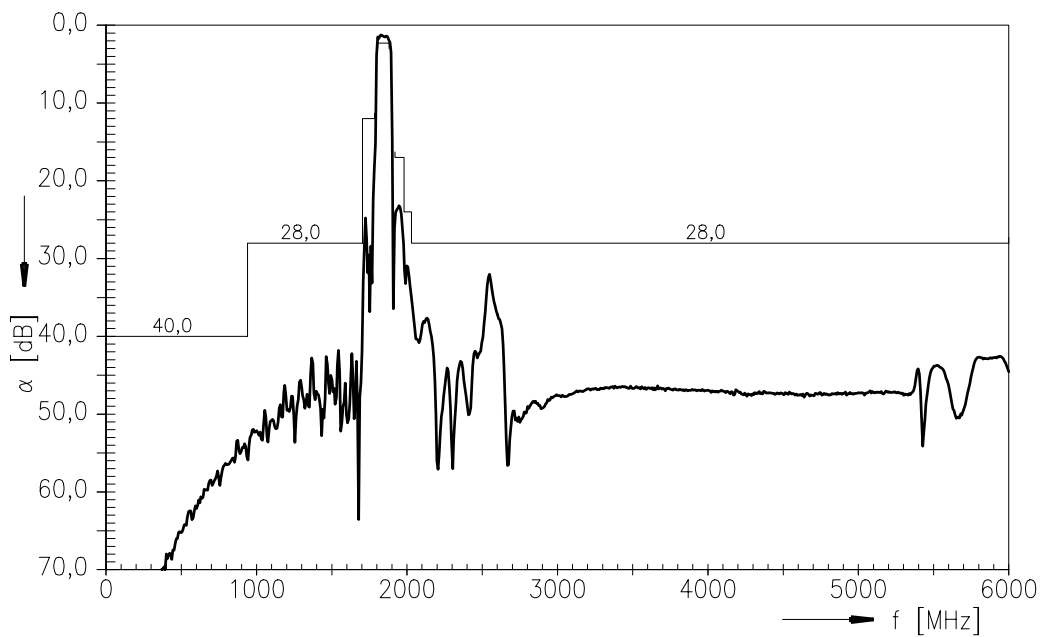
1)  $T = +25 \pm 2^{\circ}\text{C}$



Transfer Function Filter 2 ( GSM1800 )



Transfer Function Filter 2 ( GSM1800 ) - wideband





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**942,5 / 1842,5 MHz**

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