



# SAW Components

Data Sheet B9307





**SAW Components**

**B9307**

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

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

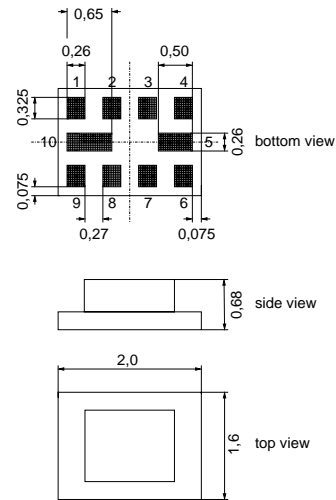
**Data Sheet**



**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)**



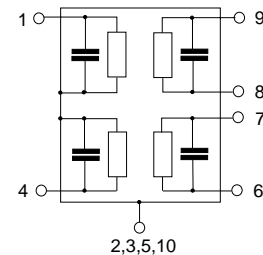
Dimensions in mm, approx. weight 0,008g.

**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 )**

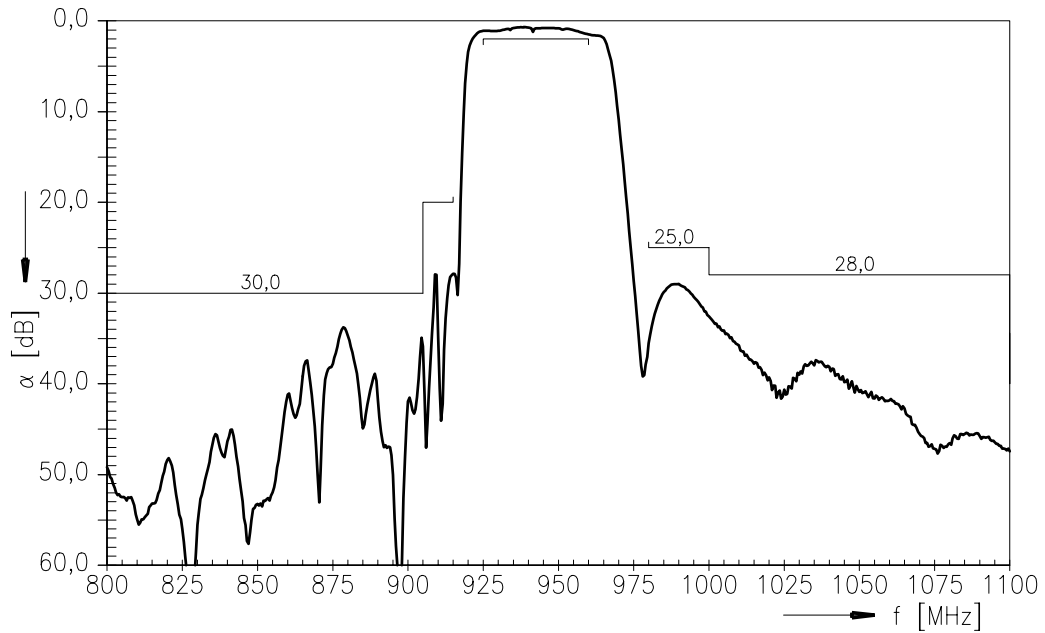
Operating temperature range:  $T = -20$  to  $+75^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 150\ \Omega \parallel 82\text{nH}$  (balanced)

			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

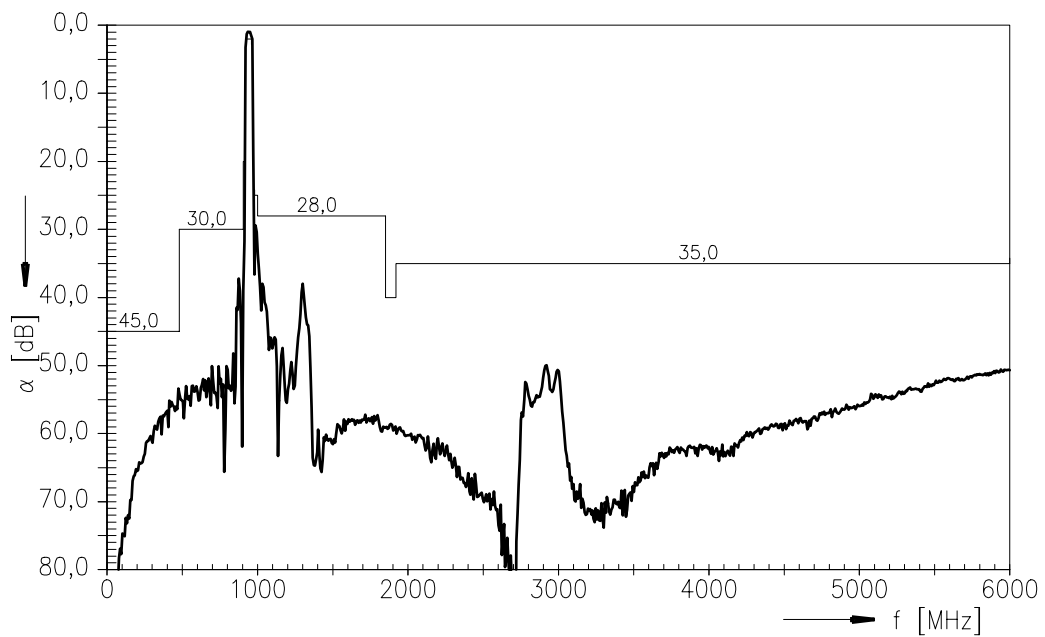
1)  $T = +25 \pm 2^{\circ}\text{C}$



Transfer Function Filter 1 ( GSM900 )



Transfer Function Filter 1 ( GSM900 ) - wideband





**Characteristics Filter 2 ( GSM1800 )**

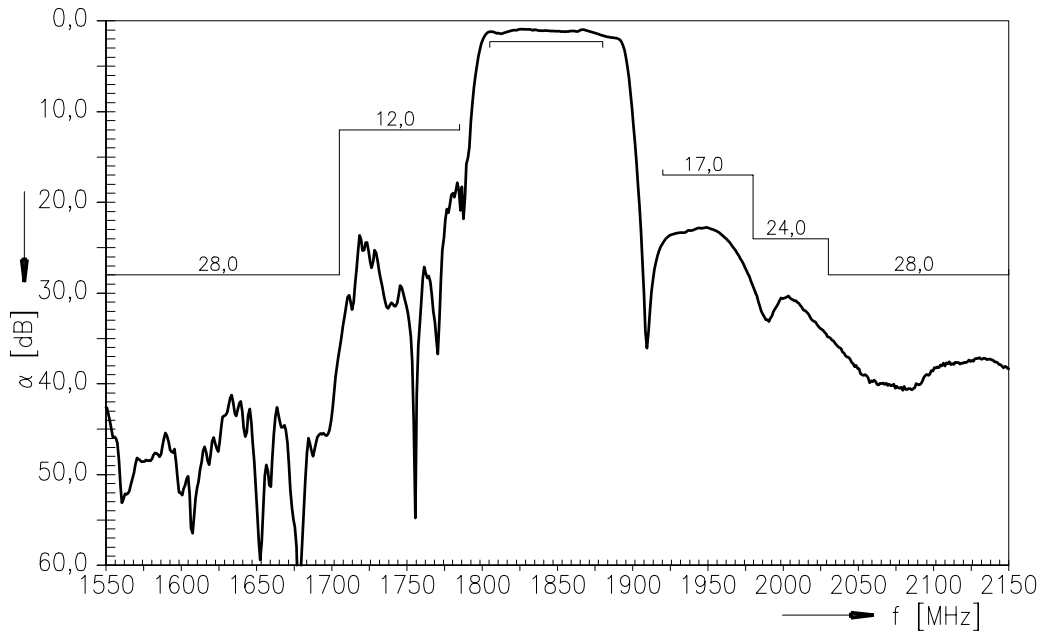
Operating temperature range:  $T = -20$  to  $+75^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 150 \Omega \parallel 15\text{nH}$  (balanced)

		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	

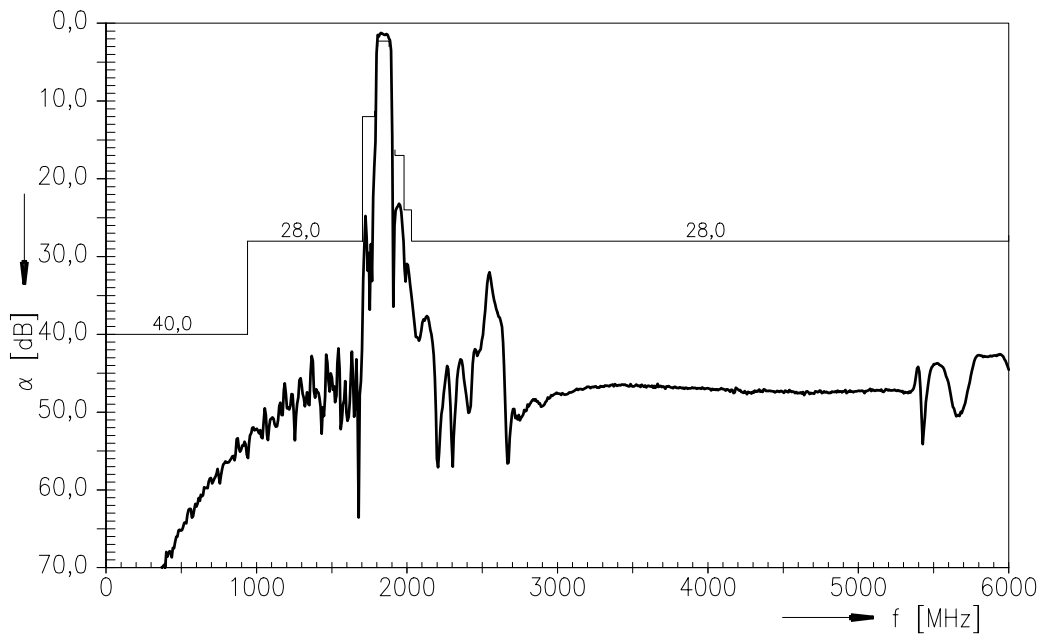
1)  $T = +25 \pm 2^{\circ}\text{C}$



Transfer Function Filter 2 ( GSM1800 )



Transfer Function Filter 2 ( GSM1800 ) - wideband





**SAW Components**

**B9307**

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

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

Data Sheet



**Published by EPCOS AG**

**Surface Acoustic Wave Components Division, SAW MC**

**P.O. Box 80 17 09, 81617 Munich, GERMANY**

© EPCOS AG 2005. Reproduction, publication and dissemination of this brochure and the information contained therein without EPCOS' prior express consent is prohibited.

Purchase orders are subject to the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry recommended by the ZVEI (German Electrical and Electronic Manufacturers' Association), unless otherwise agreed.

This brochure replaces the previous edition.

For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.