



# SAW filters for mobile communications

## Series/Type: B9201

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B39182B9201G810	B39182B9500L310	2008-08-01	2009-01-31	2009-03-15

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**SAW Components**

**B9201**

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

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

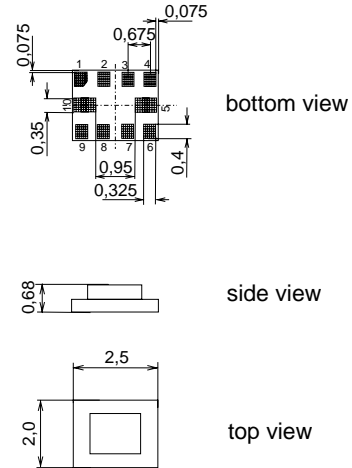
**Data Sheet**



Chip sized SAW package **QCS10F**

**Features**

- Low-loss 2in1 RF filter for mobile telephone GSM900/1800 systems, receive path
- Usable passband:  
Filter 1 (GSM1800): 75 MHz  
Filter 2 (GSM900): 35 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)**



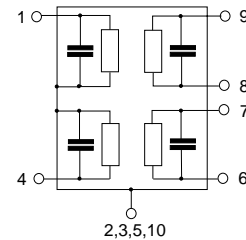
Dimensions in mm, approx. weight 12mg

**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
B9201	B39182-B9201-G810	C61157-A7-A133	F61074-V8153-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	$V_{DC}$	3	V	
ESD voltage	$V_{ESD}^*$	50*	V	
Input power at GSM850, GSM900, GSM1800, GSM1900 Tx bands:				
Filter 1 (GSM1800-Rx)	$P_{IN}$	12	dBm	peak power of GSM signal, duty cycle 4:8
Filter 2 (GSM900-Rx)	$P_{IN}$	15	dBm	

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



**Characteristics Filter 1 ( GSM1800 )**

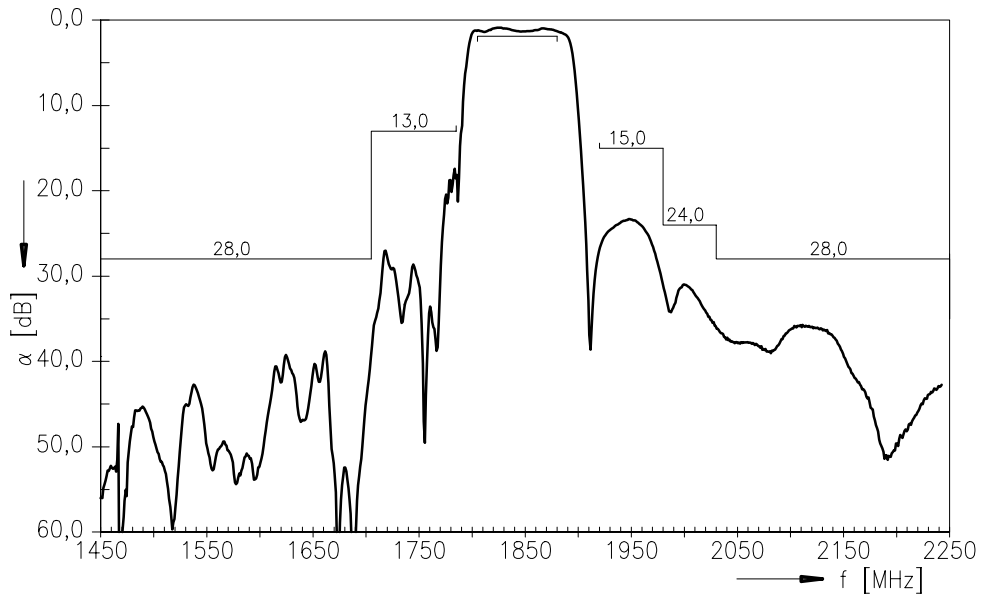
Operating temperature range:  $T = -20$  to  $+75^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$  (unbalanced)  
 Terminating load impedance:  $Z_L = 150\ \Omega$  (balanced) || 12nH

			min.	typ.	max.	
<b>Center frequency</b>	$f_c$		—	1842,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$					
	1805,0 ... 1880,0	MHz	—	1,5	2,2	dB
	1805,0 ... 1880,0	MHz 1)	—	1,4	1,9	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$					
	1805,0 ... 1880,0	MHz	—	0,7	1,4	dB
	1805,0 ... 1880,0	MHz 1)	—	0,6	1,1	dB
<b>Input VSWR</b>						
	1805,0 ... 1880,0	MHz	—	2,0	2,3	
<b>Output VSWR</b>						
	1805,0 ... 1880,0	MHz	—	1,9	2,2	
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>						
	1805,0 ... 1880,0	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>						
	1805,0 ... 1880,0	MHz	-10	-4/+4	10	degree
<b>Attenuation</b>	$\alpha_{\min}$					
	10,0 ... 1000,0	MHz	40	54	—	dB
	1000,0 ... 1705,0	MHz	28	38	—	dB
	1705,0 ... 1785,0	MHz	13	18	—	dB
	1920,0 ... 1980,0	MHz	15	23	—	dB
	1980,0 ... 2030,0	MHz	24	30	—	dB
	2030,0 ... 2775,0	MHz	28	36	—	dB
	2775,0 ... 5640,0	MHz	35	49	—	dB
	5640,0 ... 6000,0	MHz	28	49	—	dB

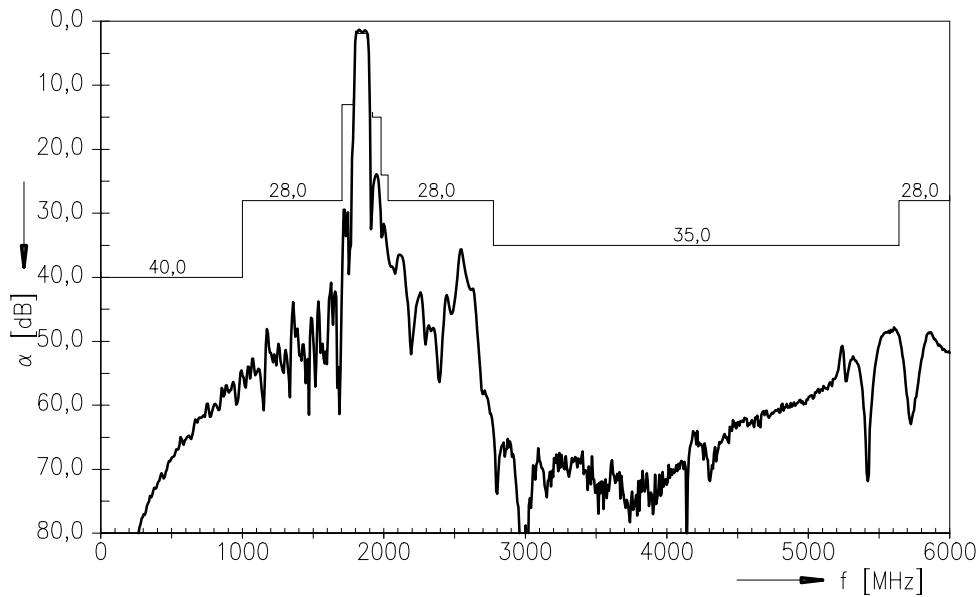
1)  $T = +25 \pm 2^{\circ}\text{C}$



Transfer function Filter 1 ( GSM1800 )



Transfer function Filter 1 ( GSM1800 ) - wideband





**Characteristics Filter 2 ( GSM900 )**

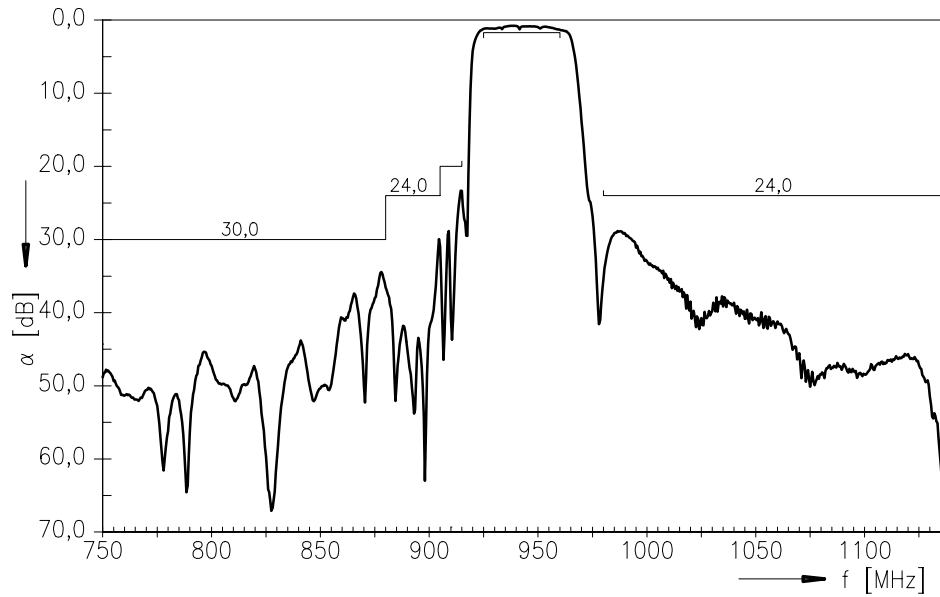
Operating temperature range:  $T = -20$  to  $+75^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$  (unbalanced)  
 Terminating load impedance:  $Z_L = 150\ \Omega$  (balanced) || 56nH

		min.	typ.	max.	
<b>Center frequency</b>	$f_c$	—	942,50	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$				
	925,0 ... 960,0 MHz	—	1,5	2,1	dB
	925,0 ... 960,0 MHz <sup>1)</sup>	—	1,4	1,7	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
	925,0 ... 960,0 MHz	—	0,7	1,4	dB
	925,0 ... 960,0 MHz <sup>1)</sup>	—	0,6	1,0	dB
<b>Input VSWR</b>					
	925,0 ... 960,0 MHz	—	1,8	2,0	
<b>Output VSWR</b>					
	925,0 ... 960,0 MHz	—	1,7	2,0	
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>					
	925,0 ... 960,0 MHz	-1,0	-0,5/+0,6	1,0	dB
<b>Output phase balance (<math>\phi(S_{31})-\phi(S_{21})+180^{\circ}</math>)</b>					
	925,0 ... 960,0 MHz	-10	-3/+2	10	degree
<b>Attenuation</b>	$\alpha_{\min}$				
	10,0 ... 480,0 MHz	45	54	—	dB
	480,0 ... 880,0 MHz	30	34	—	dB
	880,0 ... 905,0 MHz	24	30	—	dB
	905,0 ... 915,0 MHz	20	23	—	dB
	980,0 ... 1500,0 MHz	24	29	—	dB
	1500,0 ... 6000,0 MHz	30	44	—	dB

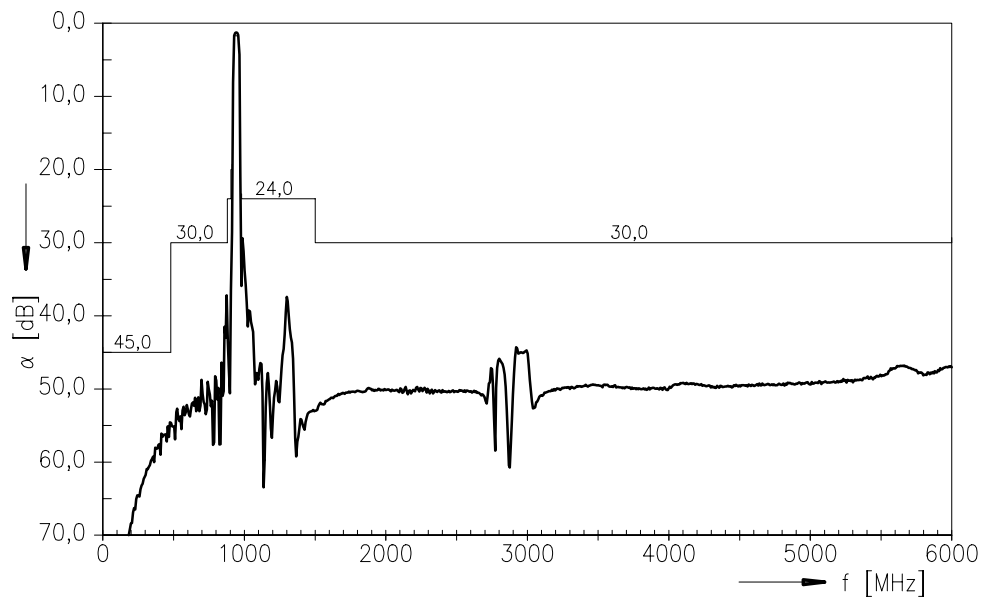
1)  $T = +25 \pm 2^{\circ}\text{C}$



Transfer function Filter 2 ( GSM900 )



Transfer function Filter 2 ( GSM900 ) - wideband





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**B9201**

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

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

Data Sheet



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