

Data Sheet B9201





B9201

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

942,5 / 1842,5 MHz

**Data Sheet** 



#### **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

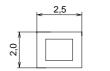
- Unbalanced to balanced operation of both filters
- Impedance transformation from 50 Ω to 150 Ω for both filters
- Suitable for GPRS Class 1 to 12
- Ceramic package for Surface Mounted Technology (SMT)

# 0,075 0,675 0,675 bottom view

Chip sized SAW package QCS10F



side view



top view

#### **Terminals**

■ Ni, gold-plated

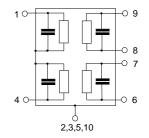
#### Pin configuration

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

## Dimensions in mm, approx. weight 12mg



Туре	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**

O		40 / . 05	• • •	
Operable temperature range	1	- 40 / <b>+</b> 85	°C	
Storage temperature range	$T_{stg}$	<b>- 40 / + 85</b>	°С	
DC voltage	$V_{\rm DC}$	3	V	
ESD voltage	$V_{ESD}{}^*$	50*	V	Machine Model, 10 pulses
Input power at				
GSM850, GSM900,				
GSM1800, GSM1900				
Tx bands:				
Filter 1 (GSM1800-Rx)	$P_{IN}$	12	dBm	peak power of GSM signal,
Filter 2 (GSM900-Rx)	$P_{IN}$	15	dBm	duty cycle 4:8

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



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#### Characteristics Filter 1 ( GSM1800 )

Operating temperature range:  $T = -20 \text{ to } +75^{\circ}\text{C}$ 

Terminating source impedance:  $Z_{\rm S}=50~\Omega$  (unbalanced) Terminating load impedance:  $Z_{\rm L}=150~\Omega$  (balanced) || 12nH

			min.	typ.	max.	
Center frequency		f <sub>C</sub>	_	1842,5	_	MHz
Maximum insertion attenuation		~				
1805,018	80,0 MHz	$\alpha_{max}$		1,5	2,2	dB
1805,018	•	1)		1,5	1,9	dB
1605,016	0U,U IVINZ	.,	_	1,4	1,9	иь
Amplitude ripple (p-p)		$\Delta \alpha$				
1805,018	80,0 MHz		_	0,7	1,4	dB
1805,018	80,0 MHz	1)	_	0,6	1,1	dB
Input VSWR						
1805,018	80,0 MHz		_	2,0	2,3	
Output VSWR				_,,	_,	
1805,018	80,0 MHz		_	1,9	2,2	
Output amplitude balance ( $ S_{31}/S_{21} $ )						
1805,018			-1,0	-0,6/+0,7	1,0	dB
Output phase balance $(\phi(S_{31})-\phi(S_{21})+180^{\circ})$						
1805,018	•		-10	-4/+4	10	degree
1000,010	00,02			,,		aogioo
Attenuation		$\alpha_{min}$				
10,010	00,0 MHz		40	54	_	dB
1000,017	05,0 MHz		28	38	_	dB
1705,017	85,0 MHz		13	18	_	dB
1920,019	80,0 MHz		15	23	_	dB
1980,020	30,0 MHz		24	30	_	dB
2030,027	75,0 MHz		28	36	_	dB
2775,056	40,0 MHz		35	49	_	dB
5640,060	00,0 MHz		28	49	_	dB

<sup>1)</sup>  $T = +25 \pm 2^{\circ}C$ 



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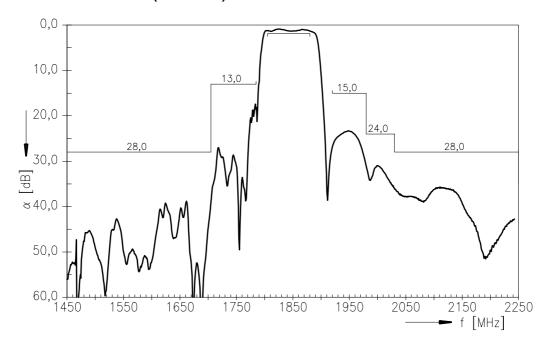
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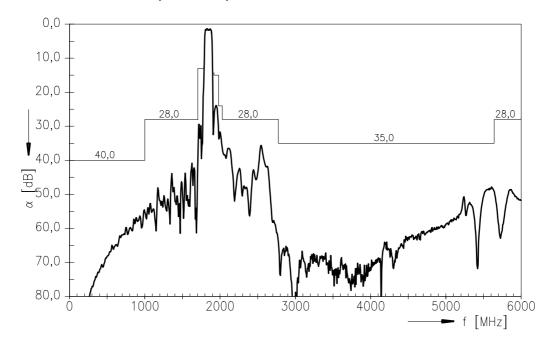
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# Transfer function Filter 1 ( GSM1800 )



## Transfer function Filter 1 ( GSM1800 ) - wideband





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## Characteristics Filter 2 ( GSM900 )

 $T = -20 \text{ to } +75^{\circ} \text{ C}$ Operating temperature range:

 $Z_{\rm S} = 50~\Omega$  (unbalanced)  $Z_{\rm L} = 150~\Omega$  (balanced) || 56nH Terminating source impedance: Terminating load impedance:

		min.	typ.	max.	
Center frequency	$f_{\rm C}$	_	942,50	_	MHz
Maximum insertion attenuation					
925,0 960,0 MHz			1,5	2,1	dB
925,0 960,0 MHz	1)	_	1,4	1,7	dB
Amplitude ripple (p-p)	Δα				
925,0 960,0 MHz		_	0,7	1,4	dB
925,0 960,0 MHz	1)	_	0,6	1,0	dB
Input VSWR					
925,0 960,0 MHz		_	1,8	2,0	
Output VSWR					
925,0 960,0 MHz		_	1,7	2,0	
Output amplitude balance ( $ S_{31}/S_{21} $ )					
925,0 960,0 MHz		-1,0	-0,5/+0,6	1,0	dB
Output phase balance $(\phi(S_{31})-\phi(S_{21})+180^{\circ})$					
925,0 960,0 MHz		-10	-3/+2	10	degree
Attenuation	$\alpha_{\text{min}}$				
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
980,01500,0 MHz		24	29	_	dB
1500,06000,0 MHz		30	44	_	dB

<sup>1)</sup>  $T = +25 \pm 2^{\circ} C$ 



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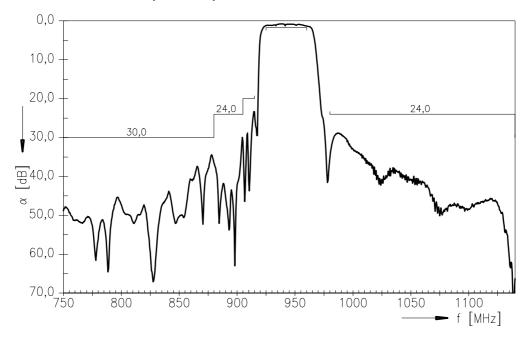
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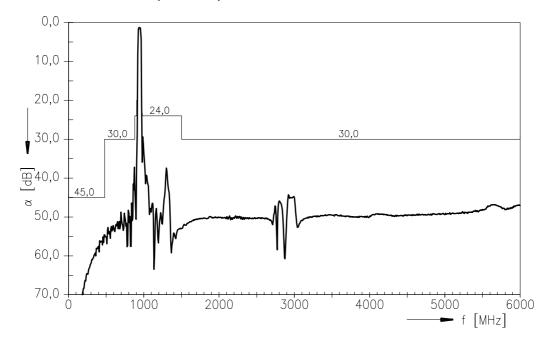
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## Transfer function Filter 2 ( GSM900 )



## Transfer function Filter 2 ( GSM900 ) - wideband





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