



SAW Components

Data Sheet B9201





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Low-Loss Dual Band Filter for Mobile Communication

942,5 / 1842,5 MHz

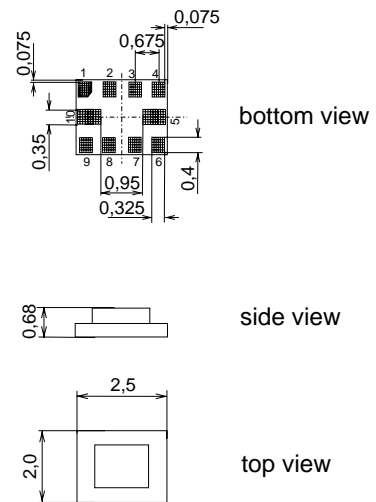
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Chip sized SAW package **QCS10F**

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)**



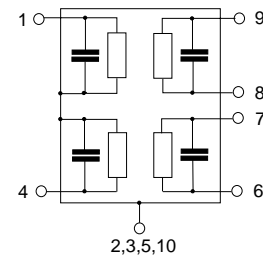
Terminals

- 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



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:				peak power of GSM signal, duty cycle 4:8
Filter 1 (GSM1800-Rx)	P_{IN}	12	dBm	
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.	
Center frequency	f_c		—	1842,5	—	MHz
Maximum insertion attenuation	α_{\max}	1805,0 ...1880,0 MHz	—	1,5	2,2	dB
		1805,0 ...1880,0 MHz 1)	—	1,4	1,9	dB
Amplitude ripple (p-p)	$\Delta\alpha$	1805,0 ...1880,0 MHz	—	0,7	1,4	dB
		1805,0 ...1880,0 MHz 1)	—	0,6	1,1	dB
Input VSWR		1805,0 ...1880,0 MHz	—	2,0	2,3	
Output VSWR		1805,0 ...1880,0 MHz	—	1,9	2,2	
Output amplitude balance (S_{31}/S_{21})		1805,0 ...1880,0 MHz	-1,0	-0,6/+0,7	1,0	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^{\circ}$)		1805,0 ...1880,0 MHz	-10	-4/+4	10	degree
Attenuation	α_{\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) $T = +25 \pm 2^{\circ}\text{C}$



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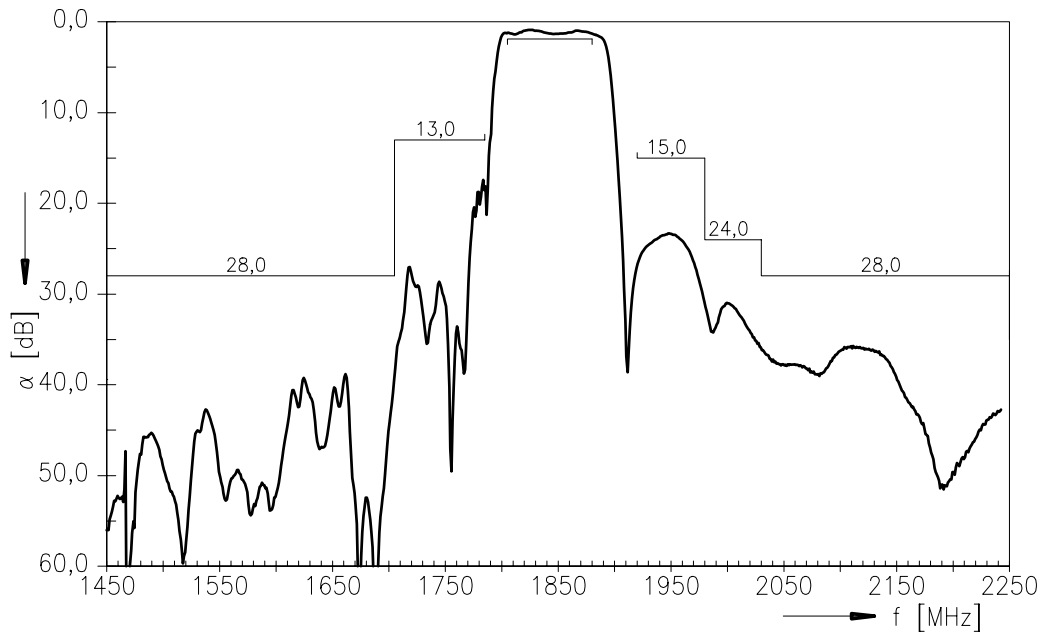
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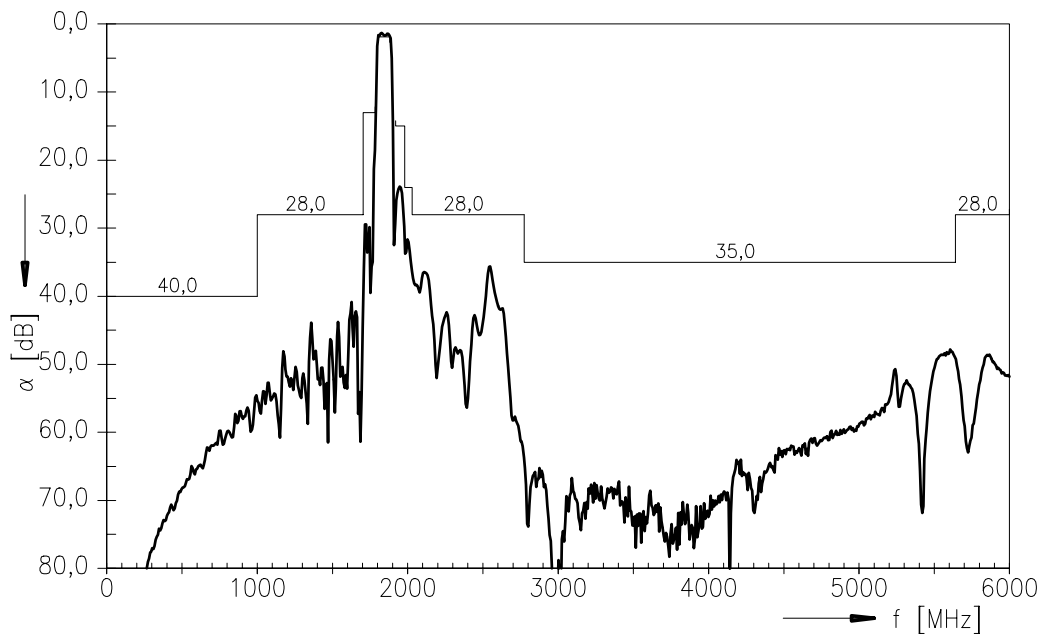
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Transfer function Filter 1 (GSM1800)



Transfer function Filter 1 (GSM1800) - wideband





Characteristics Filter 2 (GSM900)

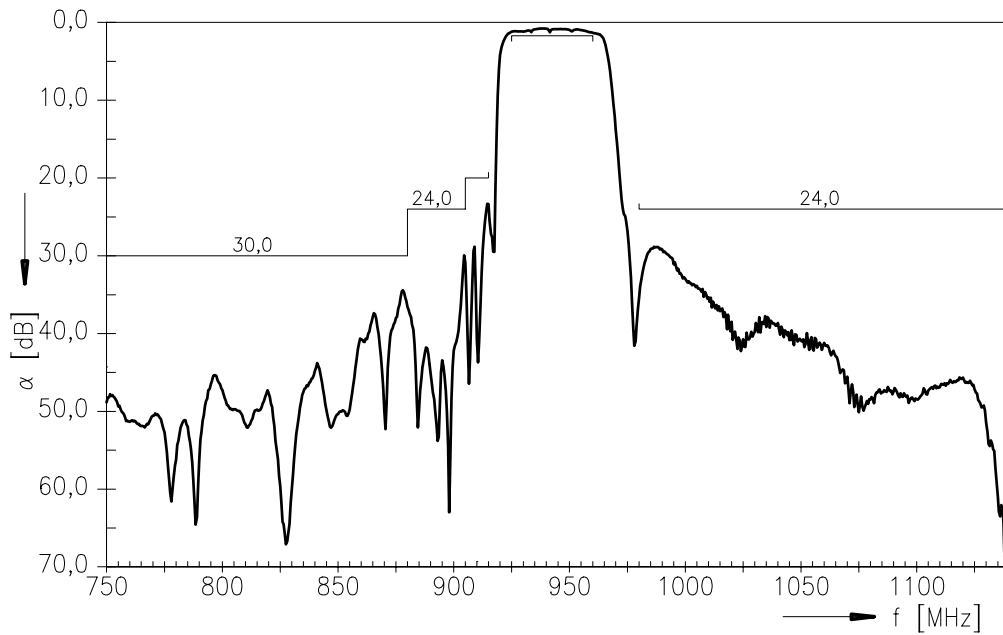
Operating temperature range: $T = -20$ to $+75^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\ \Omega$ (unbalanced)
 Terminating load impedance: $Z_L = 150\ \Omega$ (balanced) || 56nH

				min.	typ.	max.	
Center frequency		f_c		—	942,50	—	MHz
Maximum insertion attenuation		α_{\max}					
	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)		$\Delta\alpha$					
	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		α_{\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

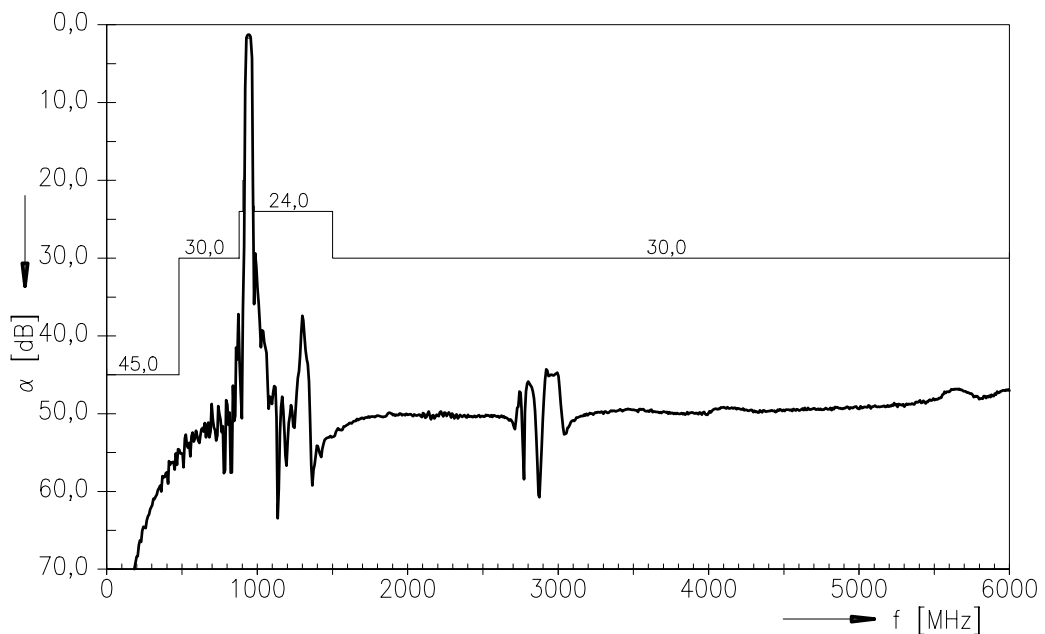
1) $T = +25 \pm 2^{\circ}\text{C}$



Transfer function Filter 2 (GSM900)



Transfer function Filter 2 (GSM900) - wideband





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