



SAW Components

Data Sheet B9301





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B9301

Low-Loss Dual Band Filter for Mobile Communication

881,5 / 942,5 MHz

Data Sheet



Chip Sized Saw Package QCS10H

Features

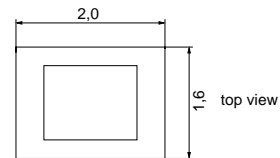
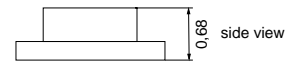
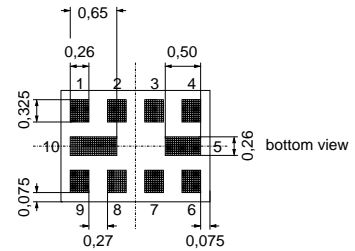
- Low-loss 2in1 RF filter for mobile telephone GSM850/900 systems, receive path
- Usable passband:
Filter 1 (GSM900): 35 MHz
Filter 2 (GSM850): 25 MHz
- Unbalanced to balanced operation of both filters
- Impedance transformation from 50 Ω to 150 Ω for both filters
- Suitable for GPRS Class 1 to 12
- Ceramic package for **Surface Mounted Technology (SMT)**

Terminals

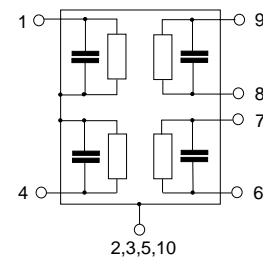
- Ni, gold-plated

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 8mg



Type	Ordering code	Marking and Package according to	Packing according to
B9301	B39941-B9301-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}^*	100	V	
Input power at GSM850, GSM900, GSM1800, GSM1900 Tx bands:				
Filter 1 (GSM900-Rx)	P_{IN}	15	dBm	effective power in the on-state, duty cycle 4:8
Filter 2 (GSM850-Rx)	P_{IN}	15	dBm	

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



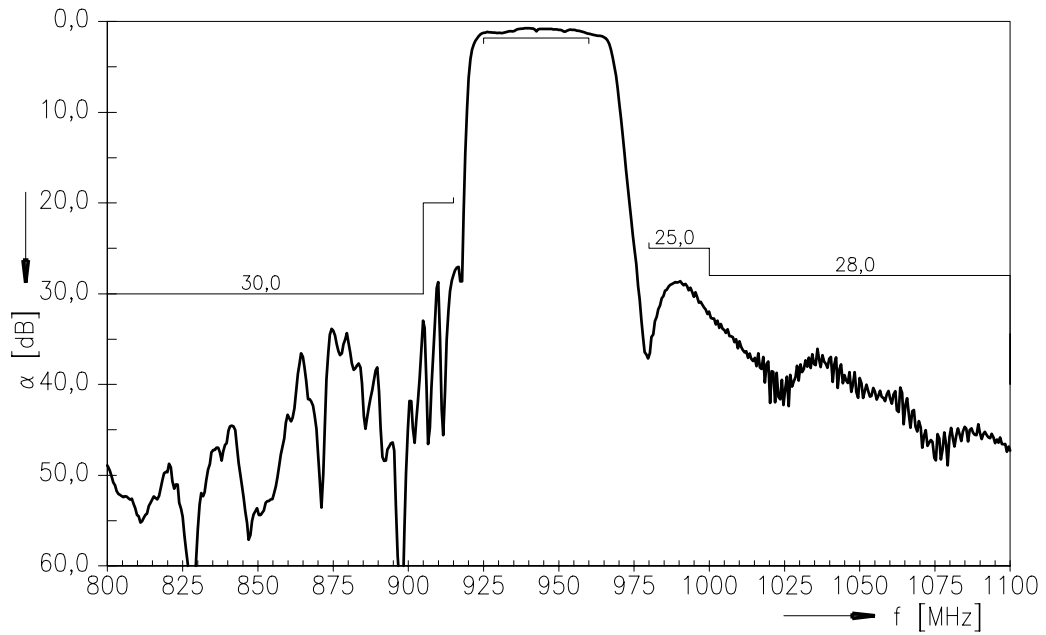
Characteristics Filter 1 (GSM900)

Operating temperature range: $T = -20$ to $+85^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50 \Omega$ (unbalanced)
 Terminating load impedance: $Z_L = 150 \Omega$ (balanced) \parallel 82nH

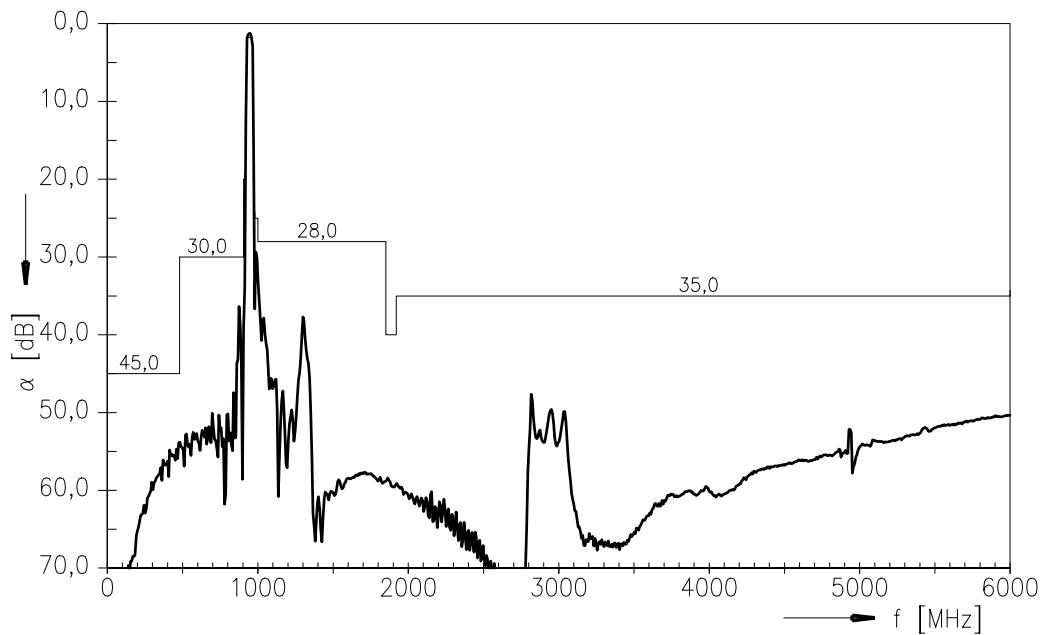
			min.	typ.	max.	
Center frequency	f_c		—	942,5	—	MHz
Maximum insertion attenuation	α_{\max}	925,0 ... 960,0 MHz	—	1,6	2,1	dB
Amplitude ripple (p-p)	$\Delta\alpha$	925,0 ... 960,0 MHz	—	0,9	1,4	dB
Input VSWR		925,0 ... 960,0 MHz	—	1,8	2,1	
Output VSWR		925,0 ... 960,0 MHz	—	1,9	2,2	
Output amplitude balance (S_{31}/S_{21})		925,0 ... 960,0 MHz	-1,1	-0,6/+0,6	1,1	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^{\circ}$)		925,0 ... 960,0 MHz	-10	-2/+1	10	degree
Attenuation	α_{\min}	10,0 ... 480,0 MHz	45	54	—	dB
		480,0 ... 905,0 MHz	30	33	—	dB
		905,0 ... 915,0 MHz	20	27	—	dB
		980,0 ... 1000,0 MHz	25	28	—	dB
		1000,0 ... 1850,0 MHz	28	32	—	dB
		1850,0 ... 1920,0 MHz	40	58	—	dB
		1920,0 ... 6000,0 MHz	35	47	—	dB



Transfer function Filter 1 (GSM900)



Transfer function Filter 1 (GSM900) - wideband





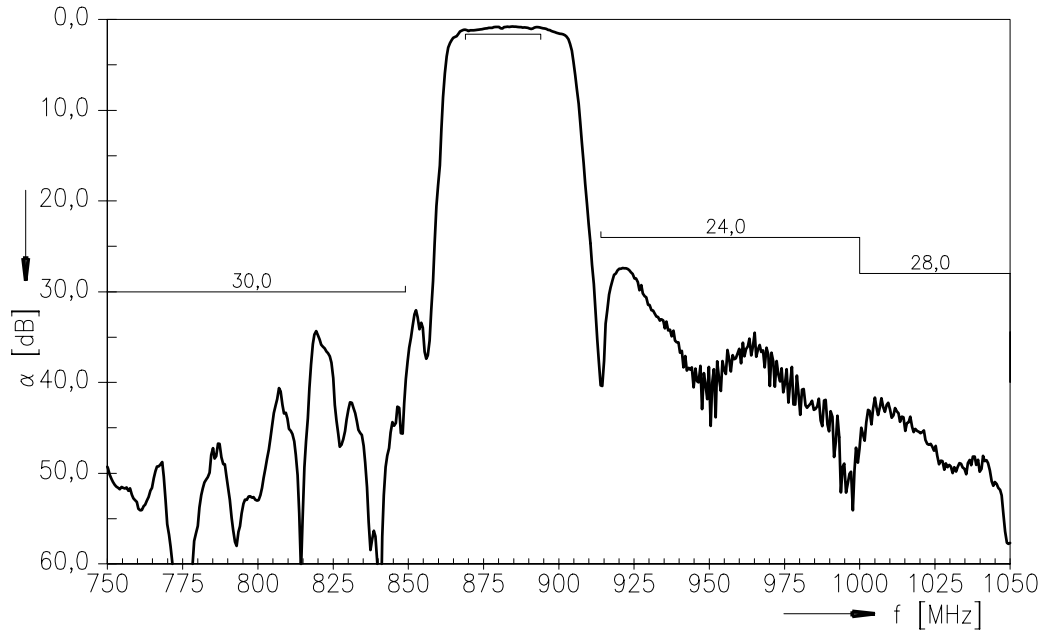
Characteristics Filter 2 (GSM850)

Operating temperature range: $T = -20$ to $+85^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\ \Omega$ (unbalanced)
 Terminating load impedance: $Z_L = 150\ \Omega$ (balanced) || 82nH

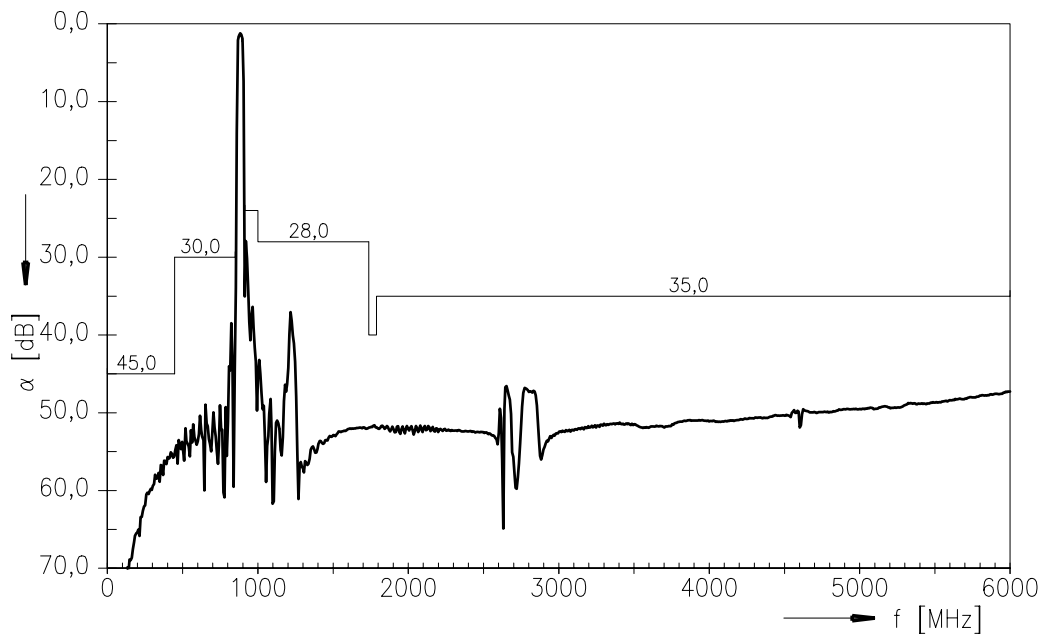
			min.	typ.	max.	
Center frequency	f_c		—	881,5	—	MHz
Maximum insertion attenuation	α_{\max}	869,0 ... 894,0 MHz	—	1,2	1,8	dB
Amplitude ripple (p-p)	$\Delta\alpha$	869,0 ... 894,0 MHz	—	0,5	1,0	dB
Input VSWR		869,0 ... 894,0 MHz	—	1,8	2,1	
Output VSWR		869,0 ... 894,0 MHz	—	1,7	2,0	
Output amplitude balance (S_{31}/S_{21})		869,0 ... 894,0 MHz	-1,0	-0,5/+0,2	1,0	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^{\circ}$)		869,0 ... 894,0 MHz	-10	-3/+4	10	degree
Attenuation	α_{\min}	10,0 ... 447,0 MHz	45	55	—	dB
		447,0 ... 849,0 MHz	30	34	—	dB
		914,0 ... 1000,0 MHz	24	27	—	dB
		1000,0 ... 1738,0 MHz	28	37	—	dB
		1738,0 ... 1788,0 MHz	40	52	—	dB
		1788,0 ... 6000,0 MHz	35	46	—	dB



Transfer function Filter 2 (GSM850)



Transfer function Filter 2 (GSM850) - wideband





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881,5 / 942,5 MHz

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