



SAW Components

Data Sheet B9301

Data Sheet

An abstract, grayscale background graphic featuring a globe with a grid of latitude and longitude lines. Overlaid on the globe is a large, stylized, 3D-effect word "EPCOS" in a light gray color. The word is tilted and appears to be floating or emerging from the globe. The overall image has a soft, ethereal quality with some light flares and a dark, textured background.

EPCOS



SAW Components

B9301

Low-Loss Dual Band Filter for Mobile Communication

881,5 / 942,5 MHz

Data Sheet



Chip Sized Saw Package QCS10H

Features

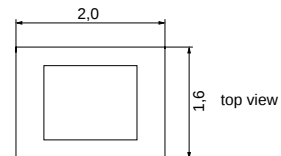
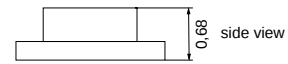
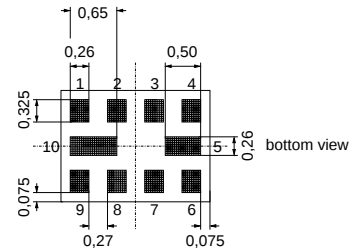
- Low-loss 2in1 RF filter for mobile telephone GSM850/900 systems, receive path
- Usable passband:
Filter 1 (GSM900): 35 MHz
Filter 2 (GSM850): 25 MHz
- Unbalanced to balanced operation of both filters
- Impedance transformation from 50 Ω to 150 Ω for both filters
- Suitable for GPRS Class 1 to 12
-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

Terminals

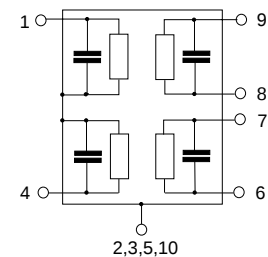
- Ni, gold-plated

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



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Characteristics Filter 1 (GSM900)

Operating temperature range:

$T = -20$ to $+85^{\circ}\text{C}$

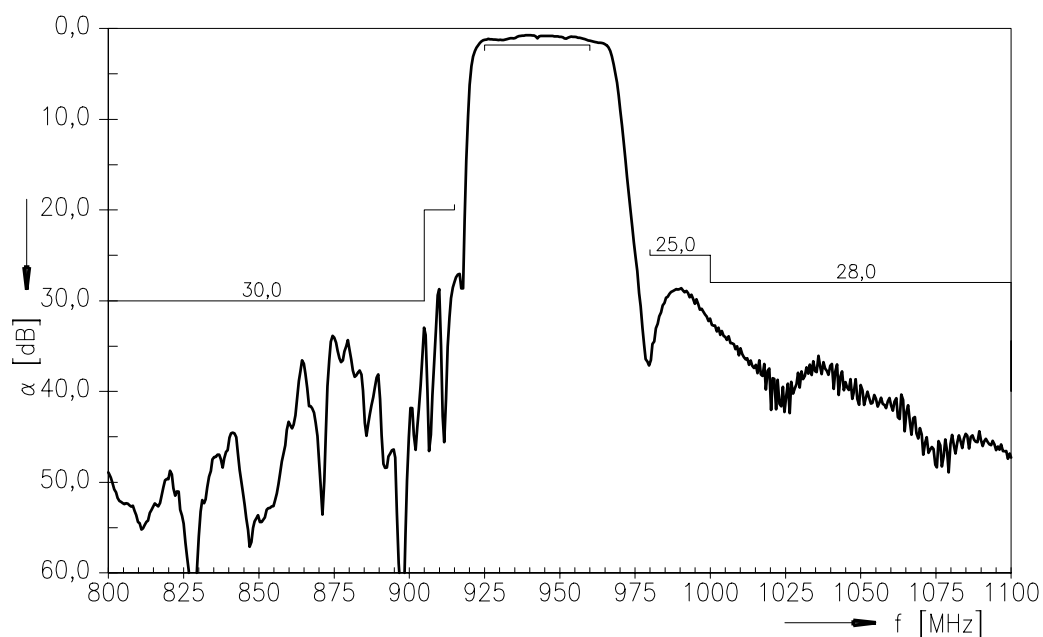
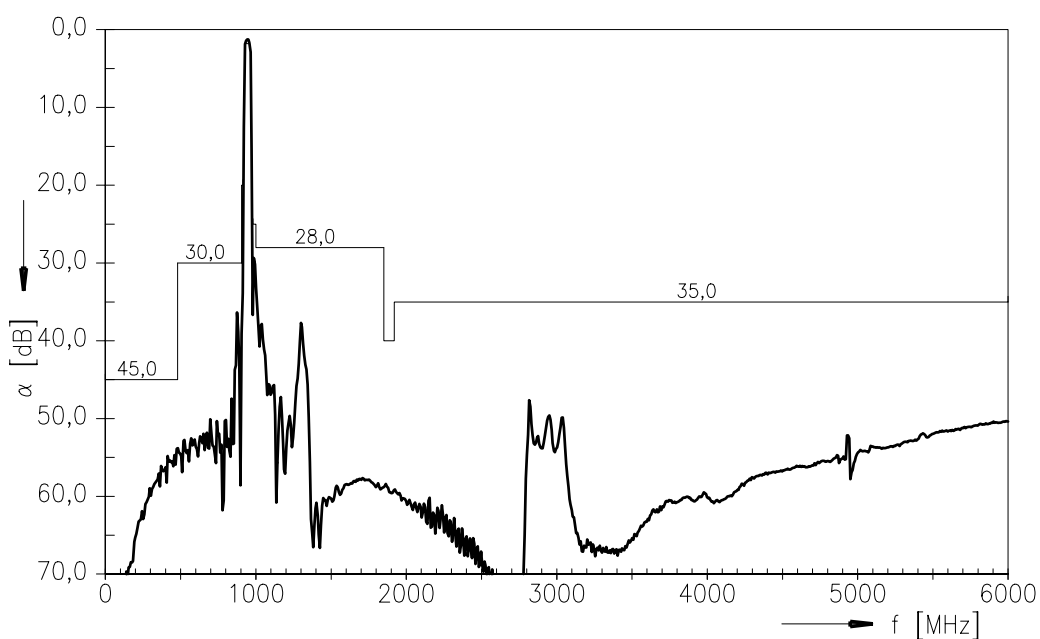
Terminating source impedance:

$Z_S = 50\ \Omega$ (unbalanced)

Terminating load impedance:

$Z_L = 150\ \Omega$ (balanced) $\parallel 82\text{nH}$

			min.	typ.	max.	
Center frequency	f_c		—	942,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$					
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	$\alpha_{\min}$					
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**



SAW Components

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Characteristics Filter 2 (GSM850)

Operating temperature range:

$T = -20$ to $+85^{\circ}\text{C}$

Terminating source impedance:

$Z_S = 50\ \Omega$ (unbalanced)

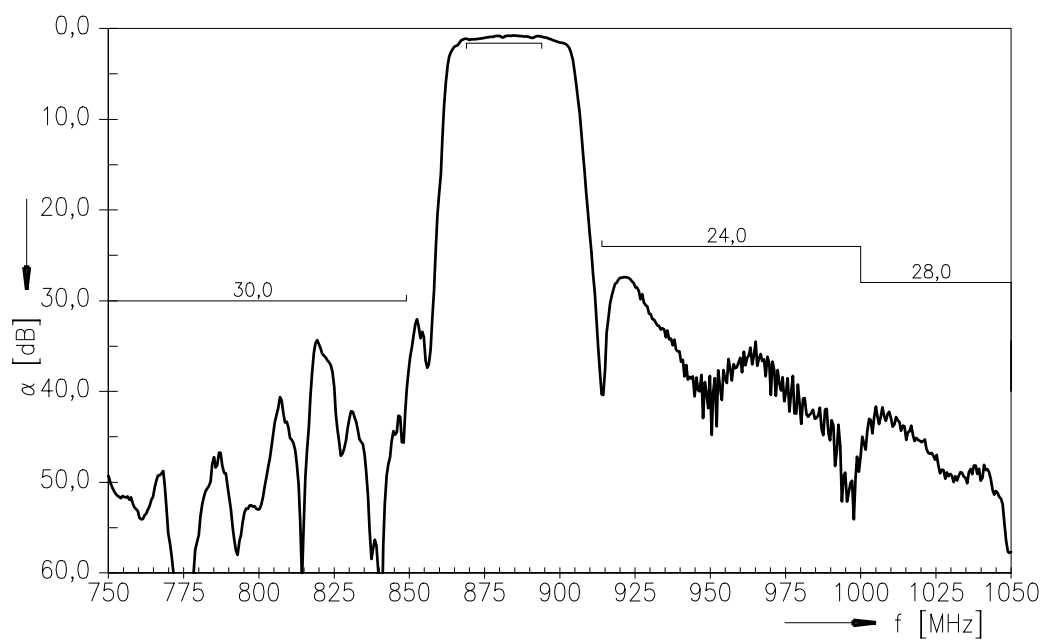
Terminating load impedance:

$Z_L = 150\ \Omega$ (balanced) $\parallel 82\text{nH}$

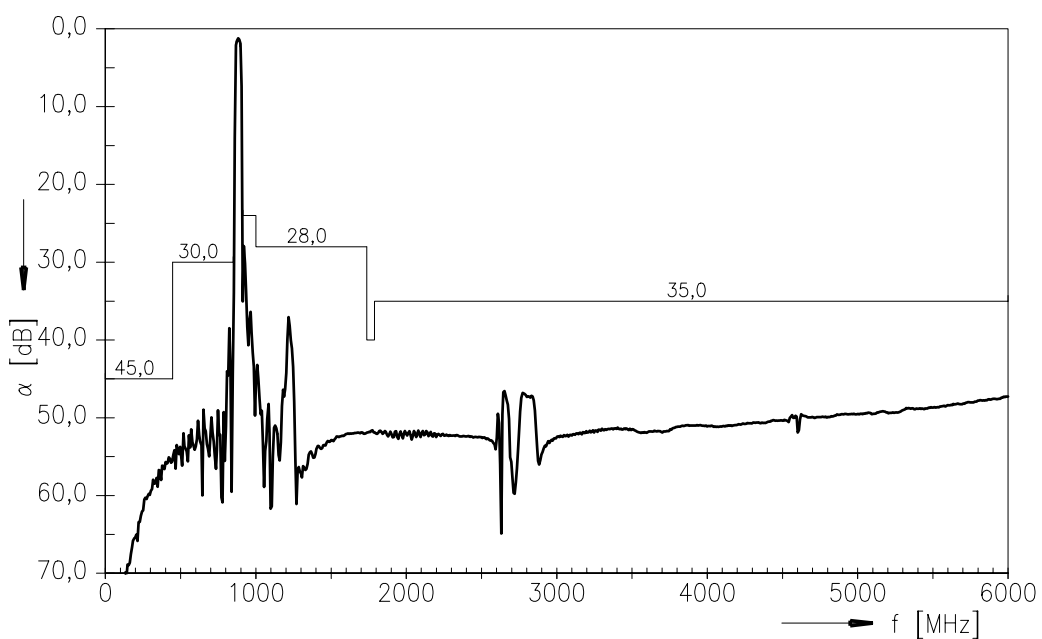
		min.	typ.	max.	
Center frequency	f_c	—	881,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$				
869,0 ... 894,0 MHz		—	1,2	1,8	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
869,0 ... 894,0 MHz		—	0,5	1,0	dB
Input VSWR					
869,0 ... 894,0 MHz		—	1,8	2,1	
Output VSWR					
869,0 ... 894,0 MHz		—	1,7	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	$\alpha_{\min}$				
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





SAW Components	B9301
Low-Loss Dual Band Filter for Mobile Communication	881,5 / 942,5 MHz
Data Sheet	SMD

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