EPCOS

SAW Components

Data Sheet B9301

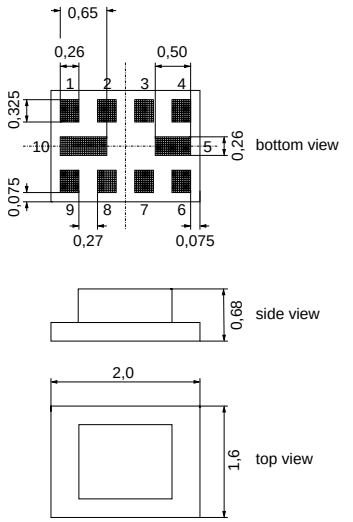
Chip Sized Saw Package **QCS10H**

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 **S**urface **M**ounted **T**echnology (**SMT**)

Terminals

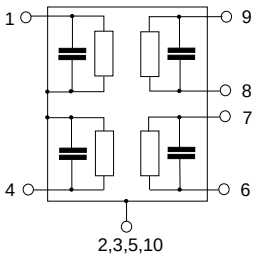
- Ni, gold-plated



Dimensions in mm, approx. weight 8mg

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
B9301	B39941-B9301-G110	C61157-A7-A141	F61074-V8152-Z000

Electrostatic **S**ensitive **D**evice (**ESD)**

Maximum ratings

Operable temperature range	T	– 40 / + 85	˚C	
Storage temperature range	T_{stg}	– 40 / + 85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}*	100	V	Machine Model, 10 pulses
Input power at GSM850, GSM900, GSM1800, GSM1900 Tx bands:				
Filter 1 (GSM900-Rx)	P_{IN}	15	dBm	effective power in the on-state,
Filter 2 (GSM850-Rx)	P_{IN}	15	dBm	duty cycle 4:8

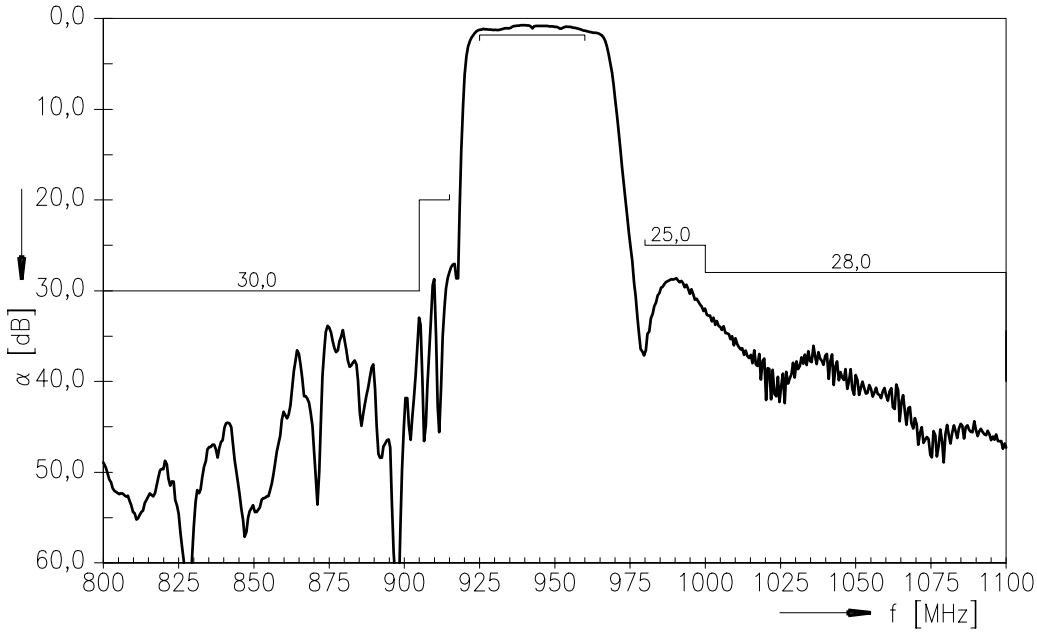
* - acc. to JESD22-A115A (Machine Model), 10 negative & 10 positive pulses

Characteristics Filter 1 (GSM900)

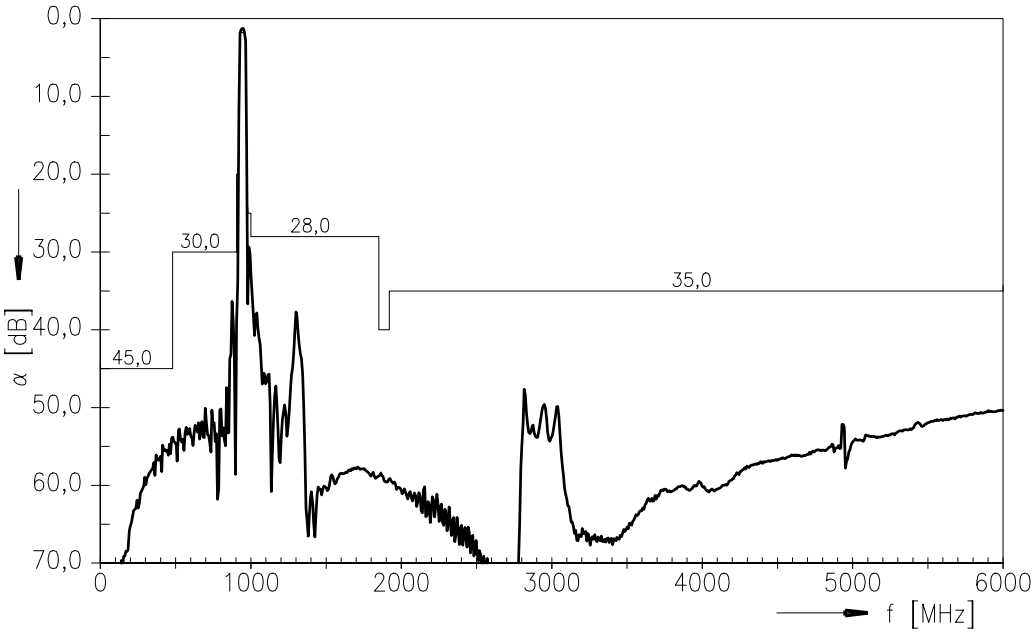
Operating temperature range: T = -20 to +85˚C
Terminating source impedance: Z_S = 50 Ω (unbalanced)
Terminating load impedance: Z_L = 150 Ω (balanced) || 82nH

		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 ($\lvert S_{31}/S_{21}\rvert$)					
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

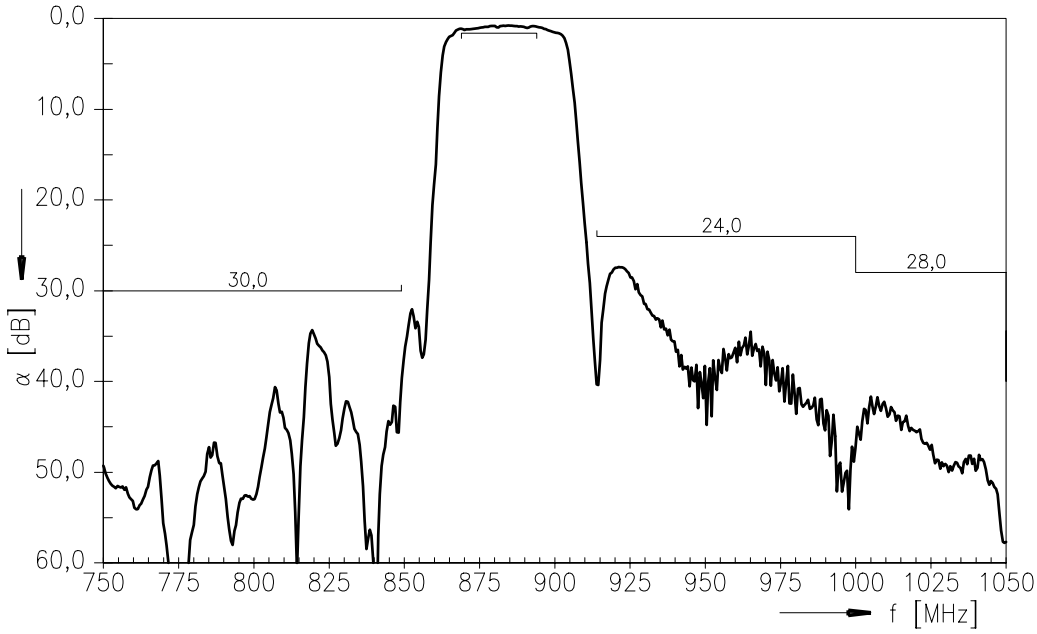


Characteristics Filter 2 (GSM850)

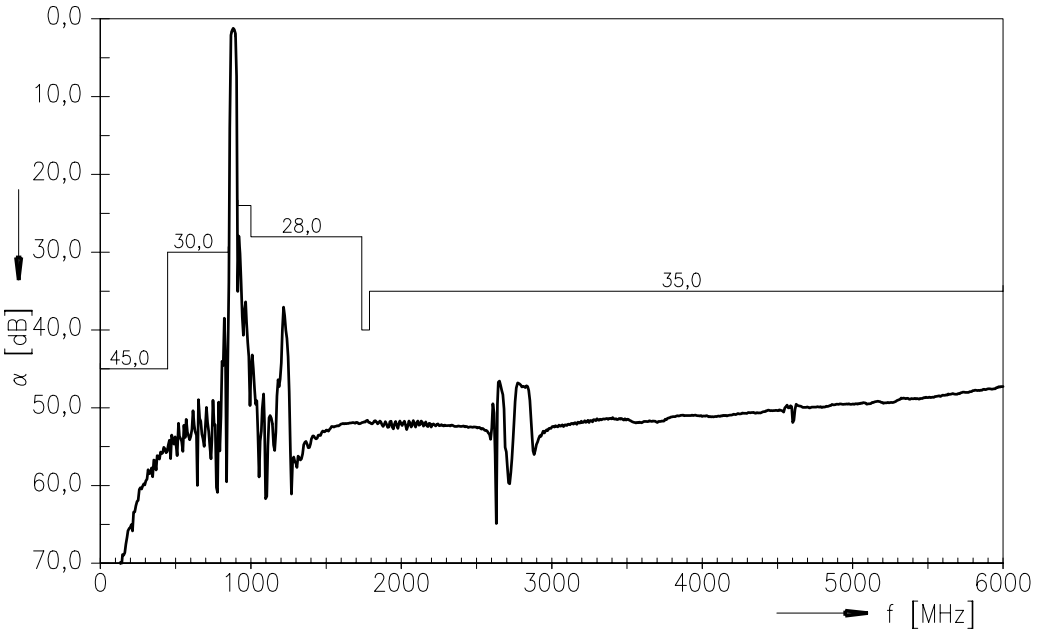
Operating temperature range: T = -20 to +85˚C
Terminating source impedance: Z_S = 50 Ω (unbalanced)
Terminating load impedance: Z_L = 150 Ω (balanced) || 82nH

		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



Published by EPCOS AG
Surface Acoustic Wave Components Division, SAW MC
P.O. Box 80 17 09, 81617 Munich, GERMANY

© EPCOS AG 2006. Reproduction, publication and dissemination of this brochure and the information contained therein without EPCOS' prior express consent is prohibited.

Purchase orders are subject to the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry recommended by the ZVEI (German Electrical and Electronic Manufacturers' Association), unless otherwise agreed.

This brochure replaces the previous edition.

For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

EPCOS:
B39941B9301G110