EPCOS

SAW Components

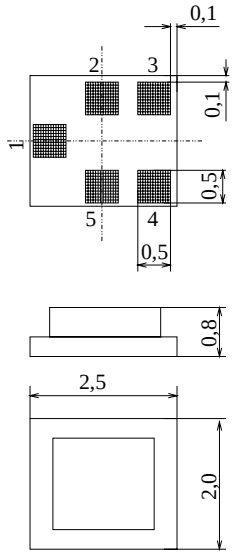
Data Sheet B7706

Data Sheet SMD

Features

- Low-loss RF filter for mobile telephone EGSM system, receive path
- Usable passband 35 MHz
- Unbalanced to balanced operation
- Excellent symmetry between balanced ports
- Impedance transformation from 50 Ω to 200 Ω
- Ceramic Package for **S**urface **M**ounted **T**echnology (**SMT**)

Chip sized SAW package QCS5A



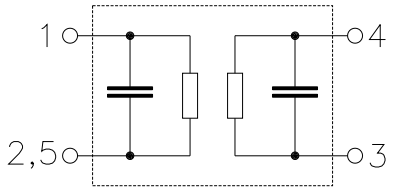
Terminals

- Ni, gold-plated

Dimensions in mm, approx. weight 0,015 g

Pin configuration

1	Input, unbalanced
3, 4	Output, balanced
2, 5	Case ground



Type	Ordering code	Marking and Package according to	Packing according to
B7706	B39941-B7706-B610	C61157-A7-A71	F61074-V8104-Z000

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

Maximum ratings

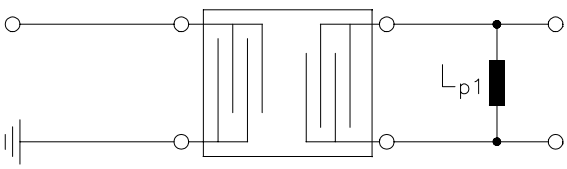
Operable temperature range	T	– 10 / + 80	˚C	
Storage temperature range	T_{stg}	– 40 / + 85	˚C	
DC voltage	V_{DC}	3	V	
Input power max.				
880...915 MHz	P_{IN}	16		impedance 50/200 Ω;
1710...1785 MHz		10	dBm	effective input power in ON-state,
1850...1910 MHz		15		GSM duty cycle 2 : 8
1920...1980 MHz		7	dBm	continuous wave
elsewhere		0		continuous wave

Characteristics

Operating temperature: T = 25 +- 2˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 200 Ω including matching network

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	α_{max}				
925,0 ... 960,0 MHz		—	2,6	3,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	1,3	1,9	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})$)					
925,0 ... 960,0 MHz		-4	0	4	degree
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
925,0 ... 960,0 MHz		-0,3	0	0,3	dB
Input VSWR					
925,0 ... 960,0 MHz		—	1,8	2,3	
Output VSWR					
925,0 ... 960,0 MHz		—	1,8	2,3	
Attenuation	α				
0,0 ... 880,0 MHz		50	60	—	dB
880,0 ... 905,0 MHz		30	40	—	dB
905,0 ... 915,0 MHz		20	27	—	dB
980,0 ...1050,0 MHz		22	24	—	dB
1050,0 ...6000,0 MHz		50	65	—	dB

Test matching network



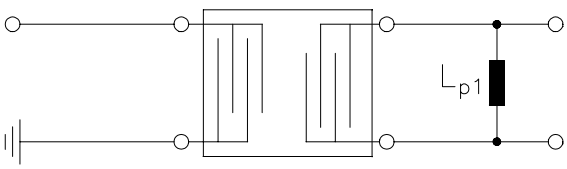
L_{p1} = 100 nH
(20% tolerance, Q = 30)

Characteristics

Operating temperature range: T = -10 to +80 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 200 Ω including matching network

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	α_{max}				
925,0 ... 960,0 MHz		—	2,7	3,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	1,4	2,2	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$)					
925,0 ... 960,0 MHz		-4	0	4	degree
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
925,0 ... 960,0 MHz		-0,3	0	0,3	dB
Input VSWR					
925,0 ... 960,0 MHz		—	1,8	2,3	
Output VSWR					
925,0 ... 960,0 MHz		—	1,8	2,3	
Attenuation	α				
0,0 ... 880,0 MHz		50	60	—	dB
880,0 ... 905,0 MHz		30	40	—	dB
905,0 ... 915,0 MHz		20	27	—	dB
980,0 ...1050,0 MHz		22	23	—	dB
1050,0 ...6000,0 MHz		50	65	—	dB

Test matching network



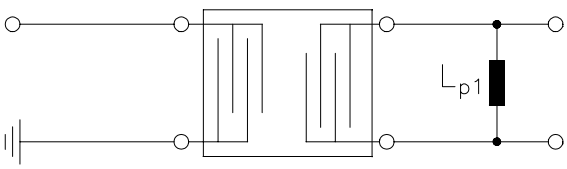
L_{p1} = 100 nH
(20% tolerance, Q = 30)

Characteristics

Operating temperature range: T = -30 to +85 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 200 Ω including matching network

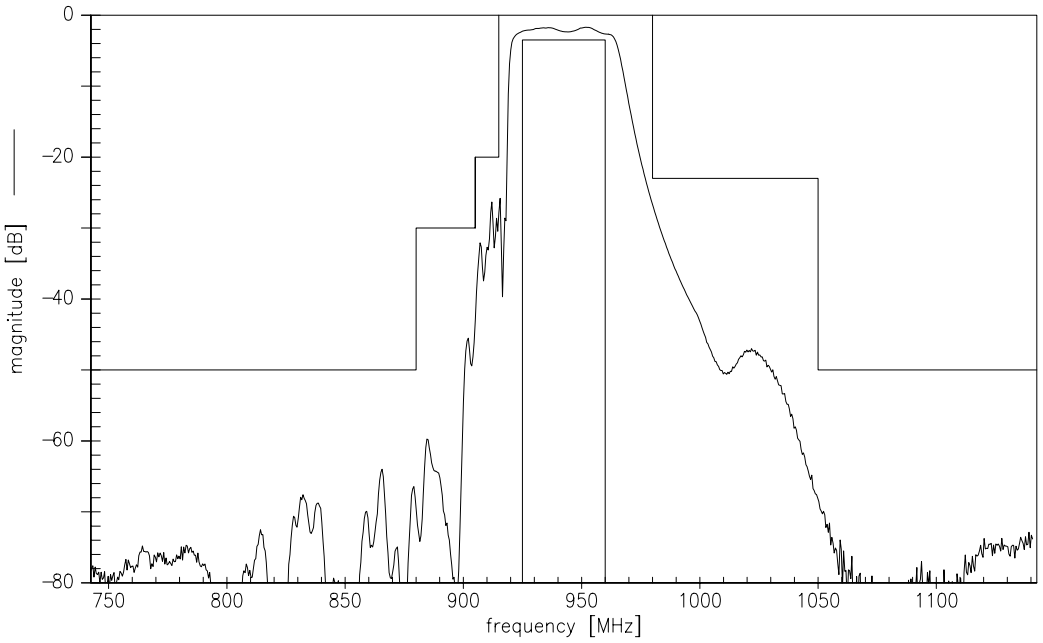
		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	α_{max}				
925,0 ... 960,0 MHz		—	2,8	3,6	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	1,5	2,3	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$)					
925,0 ... 960,0 MHz		-10	0	10	degree
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
925,0 ... 960,0 MHz		-1	0	1	dB
Input VSWR					
925,0 ... 960,0 MHz		—	2,0	—	
Output VSWR					
925,0 ... 960,0 MHz		—	2,0	—	
Attenuation	α				
0,0 ... 880,0 MHz		50	60	—	dB
880,0 ... 905,0 MHz		30	40	—	dB
905,0 ... 915,0 MHz		16	20	—	dB
980,0 ...1050,0 MHz		20	22	—	dB
1050,0 ...6000,0 MHz		50	65	—	dB

Test matching network

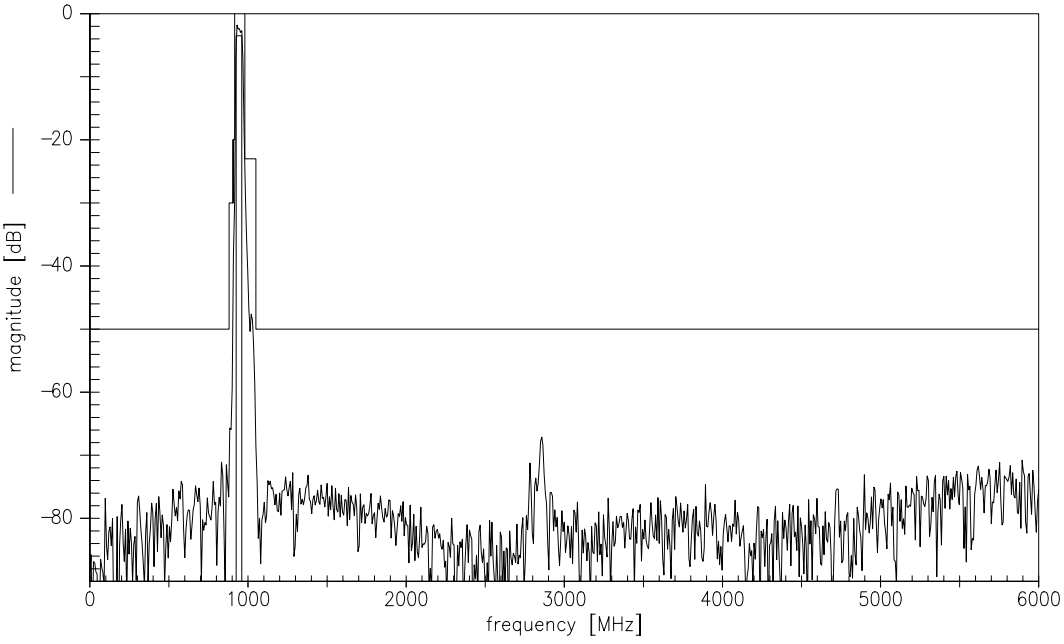


L_{p1} = 100 nH
(20% tolerance, Q = 30)

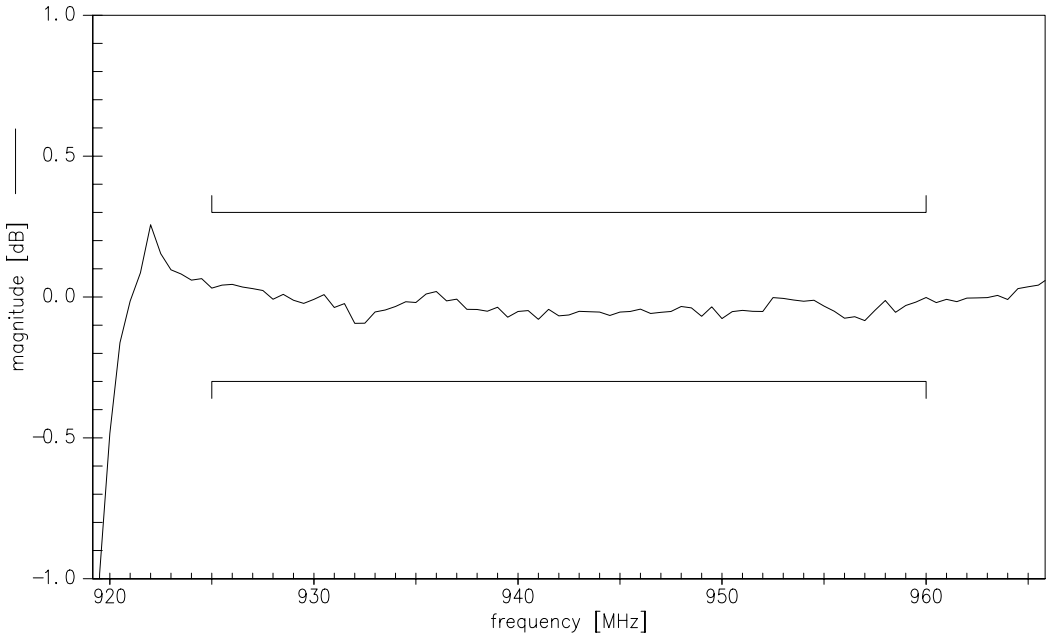
Transfer function



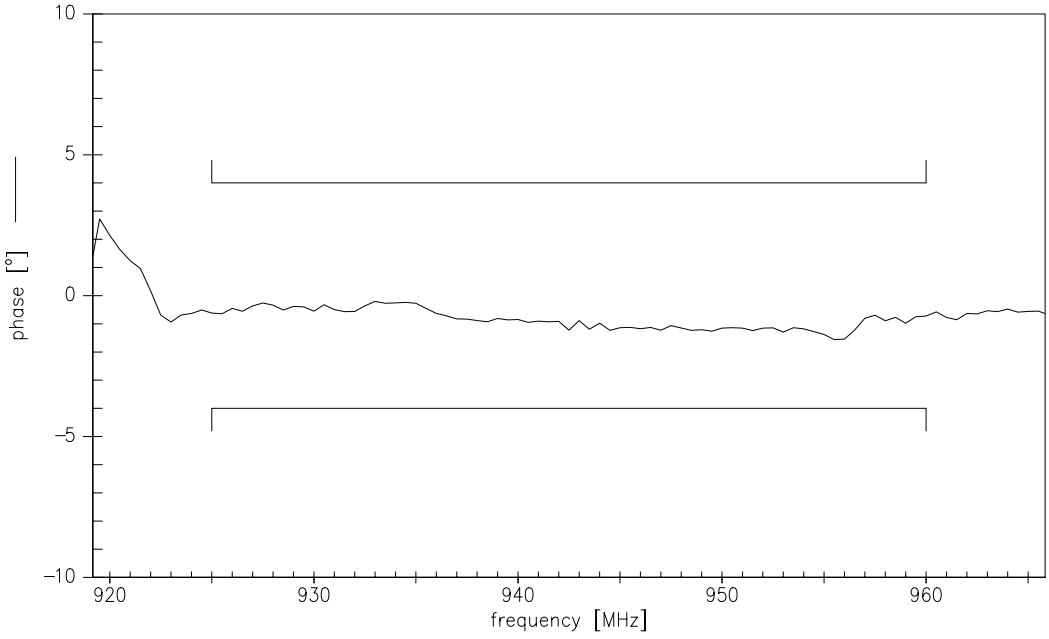
Transfer function (wideband)



Output amplitude balance ($|S_{31}/S_{21}|$)



Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^{\circ}$)



Published by EPCOS AG
Surface Acoustic Wave Components Division, SAW MC WT
P.O. Box 80 17 09, D-81617 München

The information contained in this brochure describes the type of component and shall not be considered as guaranteed characteristics. 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.