



SAW Components

Data Sheet B7706, Pb-Free

Data Sheet

An abstract graphic featuring the word "EPCOS" in large, glowing, 3D letters. The letters are white with a bright, circular highlight in the center of each, giving them a three-dimensional appearance. They are set against a dark, textured background that includes a faint, glowing globe and circuitry patterns, suggesting a high-tech or electronic theme.



SAW Components

B7706

Low-Loss Filter for Mobile Communication

942,5 MHz

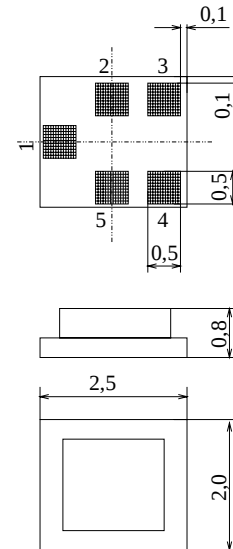
Data Sheet



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
- Suitable for GPRS class 1 to 12
- Ceramic Package for Surface Mounted Technology (SMT)
- Pb-Free

Chip Sized SAW Package QCS5H



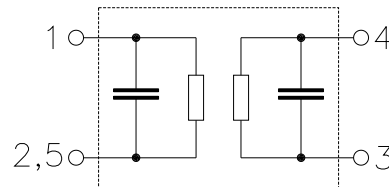
Terminals

- 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-K910	C61157-A7-A139	F61074-V8189-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	- 40 / + 85	$^{\circ}\text{C}$	Machine Model, 10 pulses peak power of GSM signal, duty cycle 4:8
Storage temperature range	T_{stg}	- 40 / + 85	$^{\circ}\text{C}$	
DC voltage	V_{DC}	3	V	
ESD voltage	V_{ESD}^*	100*	V	
Input power at GSM850, GSM900, GSM1800 and GSM1900 Tx bands	P_{IN}	15	dBm	

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



SAW Components

B7706

Low-Loss Filter for Mobile Communication

942,5 MHz

Data Sheet



Characteristics

Operating temperature:

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

Terminating source impedance:

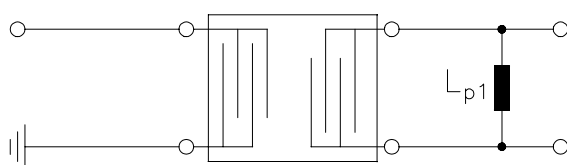
$$Z_S = 50 \Omega$$

Terminating load impedance:

$$Z_L = 200 \Omega \text{ including matching network}$$

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$	—	2,6	3,2	dB
925,0 ... 960,0 MHz		—	2,6	3,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$	—	1,3	1,9	dB
925,0 ... 960,0 MHz		—	1,3	1,9	dB
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}$)		-4	0	4	degree
925,0 ... 960,0 MHz		-4	0	4	degree
Output amplitude balance ($ S_{31}/S_{21} $)		-0,3	0	0,3	dB
925,0 ... 960,0 MHz		-0,3	0	0,3	dB
Input VSWR		—	1,8	2,3	
925,0 ... 960,0 MHz		—	1,8	2,3	
Output VSWR		—	1,8	2,3	
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



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



SAW Components

B7706

Low-Loss Filter for Mobile Communication

942,5 MHz

Data Sheet

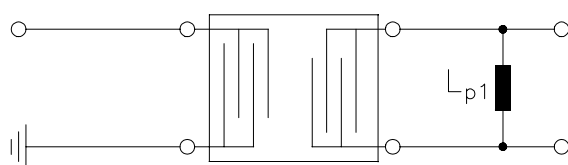


Characteristics

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

Test matching network



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



SAW Components

B7706

Low-Loss Filter for Mobile Communication

942,5 MHz

Data Sheet

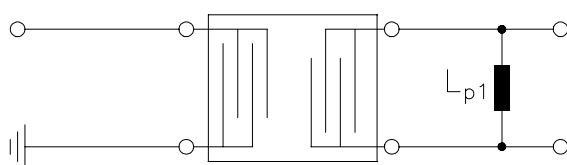


Characteristics

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	$\alpha_{\max}$	—	2,8	3,6	dB
925,0 ... 960,0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	1,5	2,3	dB
925,0 ... 960,0 MHz					
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)		-10	0	10	degree
925,0 ... 960,0 MHz					
Output amplitude balance ($ S_{31}/S_{21} $)		-1	0	1	dB
925,0 ... 960,0 MHz					
Input VSWR		—	2,0	—	
925,0 ... 960,0 MHz					
Output VSWR		—	2,0	—	
925,0 ... 960,0 MHz					
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, $Q = 30$)



SAW Components

B7706

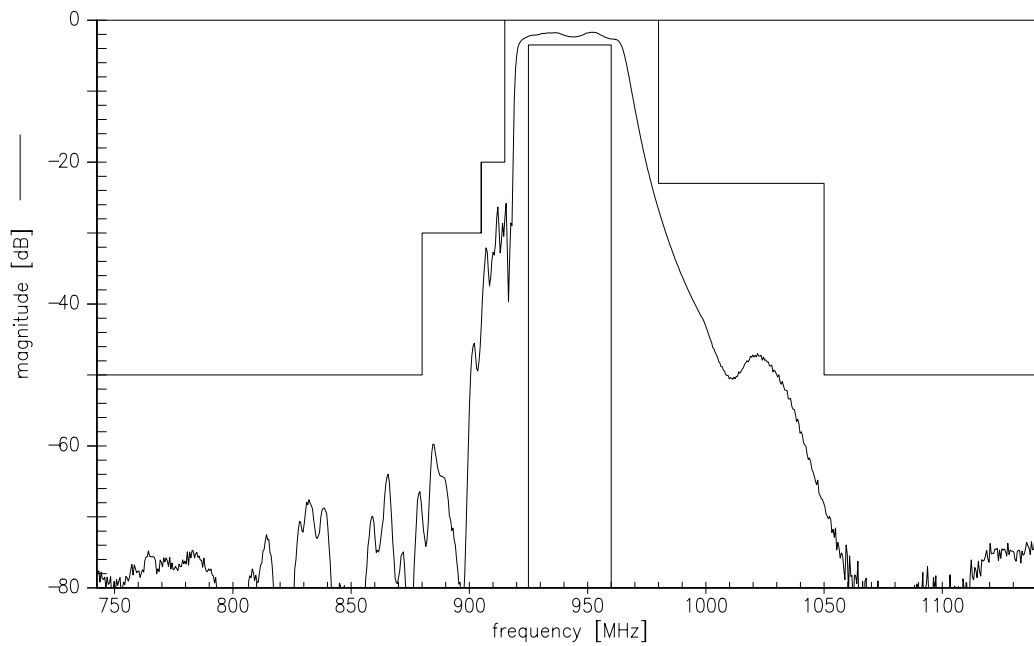
Low-Loss Filter for Mobile Communication

942,5 MHz

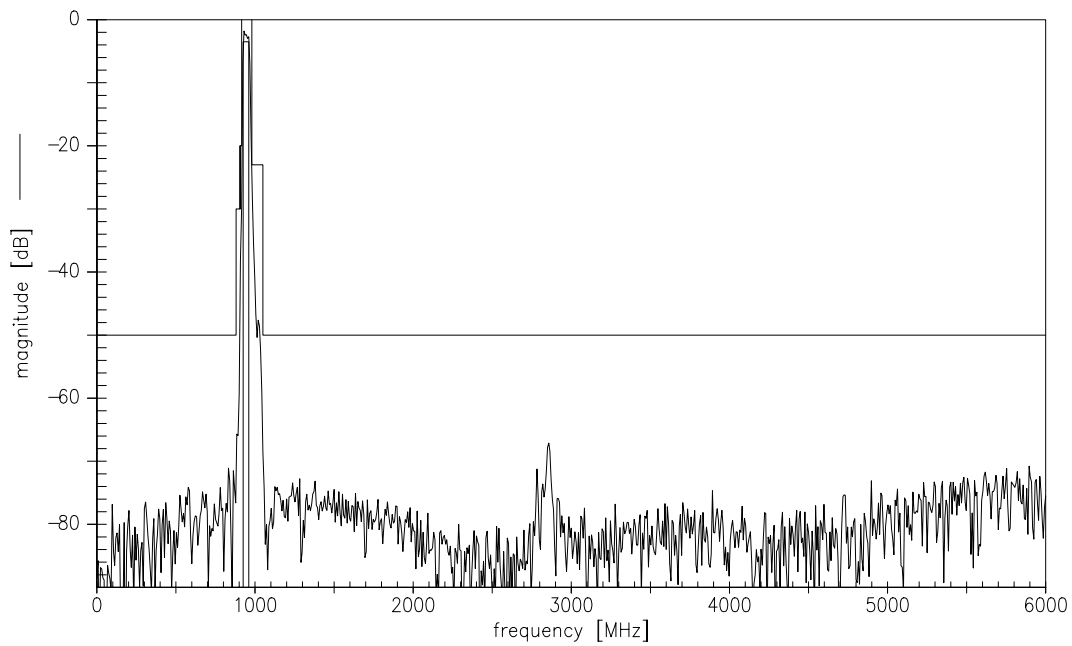
Data Sheet



Transfer function



Transfer function (wideband)





SAW Components

B7706

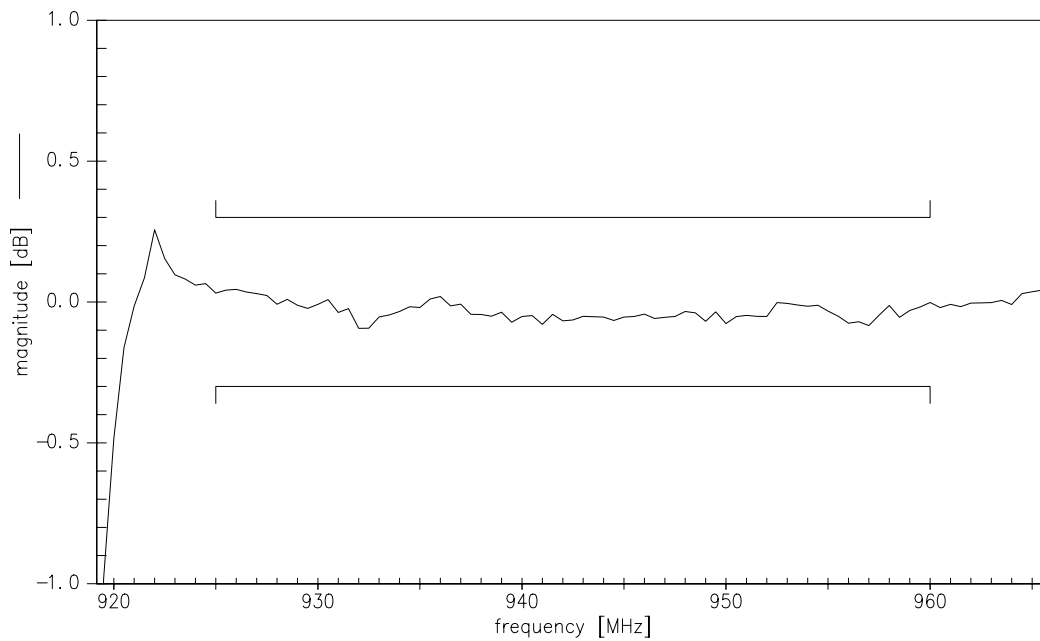
Low-Loss Filter for Mobile Communication

942,5 MHz

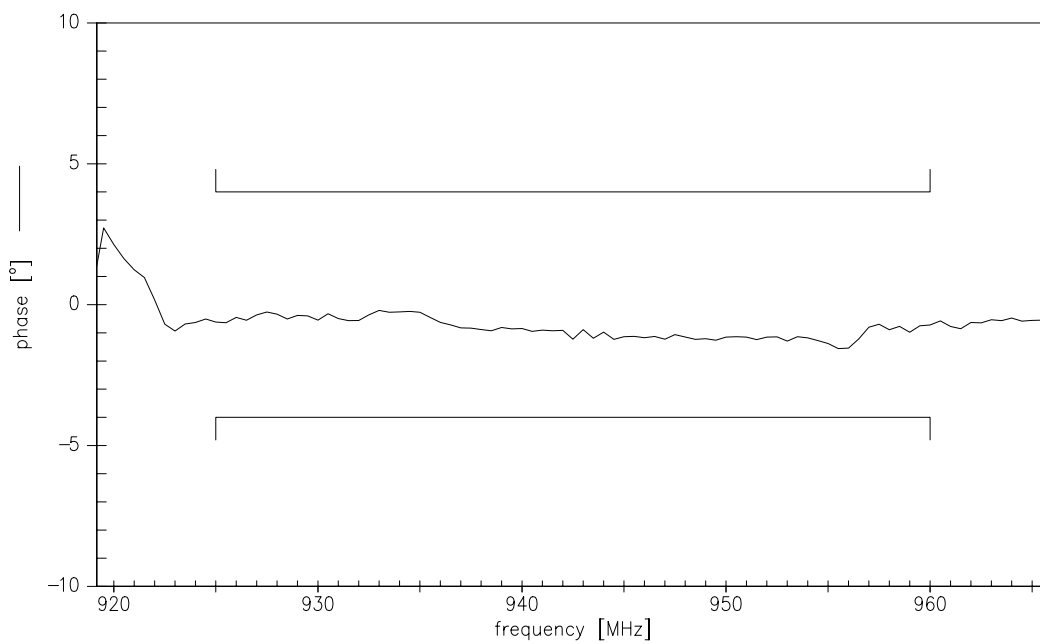
Data Sheet



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



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





SAW Components	B7706
Low-Loss Filter for Mobile Communication	942,5 MHz
Data Sheet	SMD

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

© EPCOS AG 2005. All Rights Reserved. Reproduction, publication and dissemination of this brochure and the information contained therein without EPCOS' prior express consent is prohibited.

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.