



SAW Components

Data Sheet B4847

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

B4847

Low-Loss Filter for Mobile Communication

360,00 MHz

Data Sheet



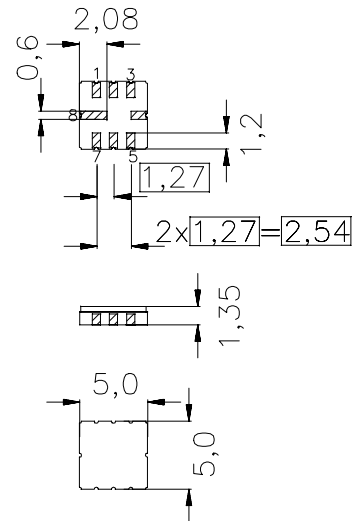
SMD ceramic package QCC8C

Features

- Low-loss IF filter for mobile telephone
- Channel selection in GSM, PCN systems
- Ceramic SMD package
- Very small size
- High close in selectivity

Terminals

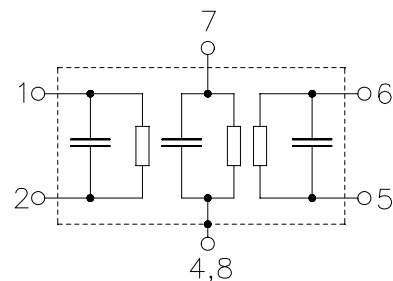
- Gold-plated Ni



Dimensions in mm, approx. weight 0,10 g

Pin configuration

- | | |
|-----|---------------------------|
| 1 | Input or input ground |
| 2 | Input or balanced input |
| 5 | Output or output ground |
| 6 | Output or balanced output |
| 7 | External coil |
| 4,8 | Case ground |
| 3 | To be grounded |



Type	Ordering code	Marking and Package according to	Packing according to
B4847	B39361-B4847-U310	C61157-A7-A56	F61074-V8070-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	- 30 / +85	°C	
Storage temperature range	T_{stg}	- 35 / +85	°C	
DC voltage	V_{DC}	3	V	
Source power	P_s	10	dBm	



SAW Components

B4847

Low-Loss Filter for Mobile Communication

360,00 MHz

Data Sheet



Characteristics

Ambient temperature:	$T = -20^{\circ}\text{C to } +75^{\circ}\text{C}$
Terminating source impedance:	$Z_S = 340\ \Omega \parallel -1,9\ \text{pF}$
Terminating load impedance:	$Z_L = 340\ \Omega \parallel -1,9\ \text{pF}$

		min.	typ.	max.	
Nominal frequency (center frequency between 3 dB points)	f_N	—	360,00	—	MHz
Minimum insertion attenuation (including loss in matching elements)	$\alpha_{\min}$	—	4,3	5,0	dB
Amplitude ripple (p-p) $f_N - 67,7\text{ kHz} \dots f_N + 67,7\text{ kHz}$ $f_N - 80,0\text{ kHz} \dots f_N + 80,0\text{ kHz}$	$\Delta\alpha$	—	0,6 0,9	2,0 3,0	dB dB
Passband width $\alpha_{\text{rel}} \leq 3,0\text{ dB}$	$B_{3,0\text{dB}}$	—	315	—	kHz
Group delay ripple (p-p) $f_N - 67,7\text{ kHz} \dots f_N + 67,7\text{ kHz}$	$\Delta\tau$	—	0,5	1,8	μs
Relative attenuation (relative to $\alpha_{\min}$) $f_N \pm 400\text{ kHz} \dots f_N \pm 600\text{ kHz}$ $f_N \pm 600\text{ kHz} \dots f_N \pm 800\text{ kHz}$ $f_N \pm 800\text{ kHz} \dots f_N \pm 1,6\text{ MHz}$ $f_N \pm 1,6\text{ MHz} \dots f_N \pm 5,0\text{ MHz}$ $f_N \pm 5,0\text{ MHz} \dots f_N \pm 30,0\text{ MHz}$	α_{rel}	24 38 42 * 52 55	32 48 48 54 62	— — — — —	dB dB dB dB dB
Impedance within the pass band Input: $Z_{\text{IN}} = R_{\text{IN}} \parallel C_{\text{IN}}$ Output: $Z_{\text{OUT}} = R_{\text{OUT}} \parallel C_{\text{OUT}}$		— —	340 $\parallel$ 1,9 340 $\parallel$ 1,9	— —	$\Omega \parallel \text{pF}$ $\Omega \parallel \text{pF}$
Temperature coefficient of frequency ¹⁾	TC_f	—	- 0,036	—	ppm/K ²
Turnover temperature	T_0	—	28	—	$^{\circ}\text{C}$

¹⁾ Temperature dependence of f_c : $f_c(T) = f_c(T_0)(1 + TC_f(T - T_0)^2)$

^{*)} In the frequency range from 362,5 MHz to 364,0 MHz there exists one spurious response.
The minimum attenuation α_{rel} of this spurious response is more than 48 dB.



SAW Components

B4847

Low-Loss Filter for Mobile Communication

360,00 MHz

Data Sheet



Characteristics

Ambient temperature:	$T = -30^{\circ}\text{C to } +85^{\circ}\text{C}$
Terminating source impedance:	$Z_S = 340\ \Omega \parallel -1,9\ \text{pF}$
Terminating load impedance:	$Z_L = 340\ \Omega \parallel -1,9\ \text{pF}$

		min.	typ.	max.	
Nominal frequency (center frequency between 3 dB points)	f_N	—	360,00	—	MHz
Minimum insertion attenuation (including loss in matching elements)	$\alpha_{\min}$	—	4,3	5,0	dB
Amplitude ripple (p-p) $f_N - 67,7\text{ kHz} \dots f_N + 67,7\text{ kHz}$ $f_N - 80,0\text{ kHz} \dots f_N + 80,0\text{ kHz}$	$\Delta\alpha$	— —	0,6 0,9	3,0 4,5	dB dB
Passband width $\alpha_{\text{rel}} \leq 3,0\text{ dB}$	$B_{3,0\text{dB}}$	—	315	—	kHz
Group delay ripple (p-p) $f_N - 67,7\text{ kHz} \dots f_N + 67,7\text{ kHz}$	$\Delta\tau$	—	0,5	1,8	μs
Relative attenuation (relative to $\alpha_{\min}$) $f_N \pm 400\text{ kHz} \dots f_N \pm 600\text{ kHz}$ $f_N \pm 600\text{ kHz} \dots f_N \pm 800\text{ kHz}$ $f_N \pm 800\text{ kHz} \dots f_N \pm 1,6\text{ MHz}$ $f_N \pm 1,6\text{ MHz} \dots f_N \pm 5,0\text{ MHz}$ $f_N \pm 5,0\text{ MHz} \dots f_N \pm 30,0\text{ MHz}$	α_{rel}	24 38 42 * 52 55	32 48 48 54 62	— — — — —	dB dB dB dB dB
Impedance within the pass band Input: $Z_{\text{IN}} = R_{\text{IN}} \parallel C_{\text{IN}}$ Output: $Z_{\text{OUT}} = R_{\text{OUT}} \parallel C_{\text{OUT}}$		— —	340 $\parallel$ 1,9 340 $\parallel$ 1,9	— —	$\Omega \parallel \text{pF}$ $\Omega \parallel \text{pF}$
Temperature coefficient of frequency ¹⁾	TC_f	—	-0,036	—	ppm/K ²
Turnover temperature	T_0	—	28	—	$^{\circ}\text{C}$

¹⁾ Temperature dependence of f_c : $f_c(T) = f_c(T_0)(1 + TC_f(T - T_0)^2)$

^{*)} In the frequency range from 362,5 MHz to 364,0 MHz there exists one spurious response.
The minimum attenuation α_{rel} of this spurious response is more than 48 dB.



SAW Components

B4847

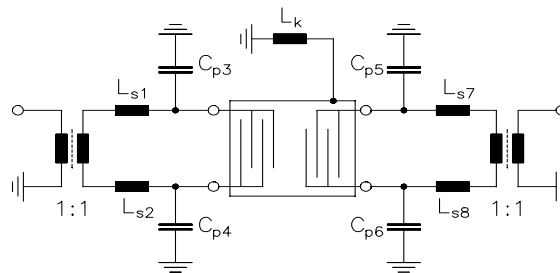
Low-Loss Filter for Mobile Communication

360,00 MHz

Data Sheet



Test matching network to 50 Ω (element values depend on PCB layout):



$$\begin{aligned} L_{s1} &= L_{s2} = 18\text{nH} \\ C_{p3} &= C_{p4} = 1,2\text{pF} \\ C_{p5} &= C_{p6} = 1,2\text{pF} \\ L_{s7} &= L_{s8} = 18\text{nH} \\ L_k &= 68\text{ nH} \end{aligned}$$



SAW Components

B4847

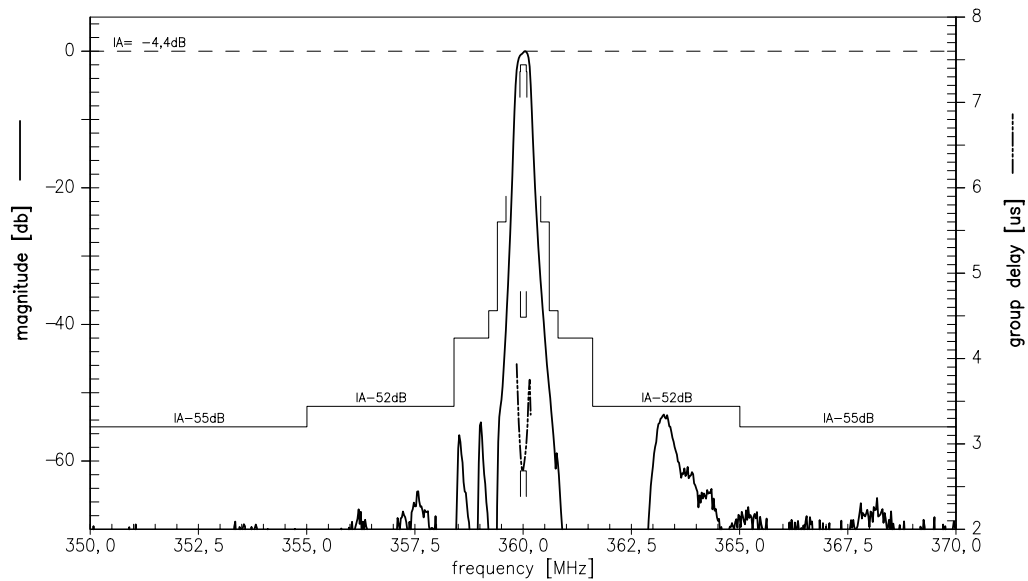
Low-Loss Filter for Mobile Communication

360,00 MHz

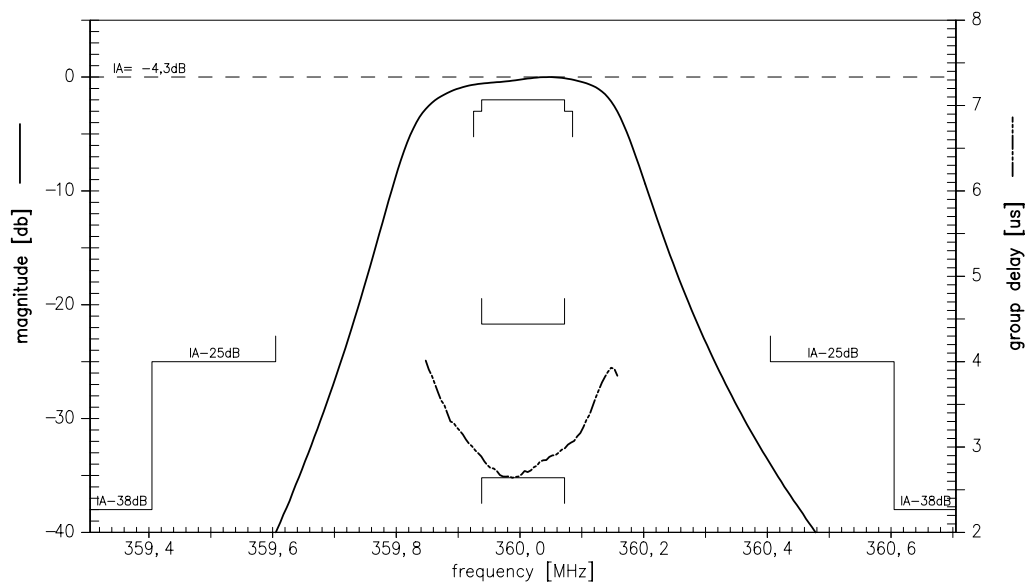
Data Sheet



Transfer function:



Transfer function (pass band):





SAW Components	B4847
Low-Loss Filter for Mobile Communication	360,00 MHz
Data Sheet	SMD

Published by EPCOS AG

Surface Acoustic Wave Components Division, SAW MC WT

P.O. Box 80 17 09, 81617 Munich, GERMANY

© EPCOS AG 2002. 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.