EPCOS

SAW Components

Data Sheet B4847

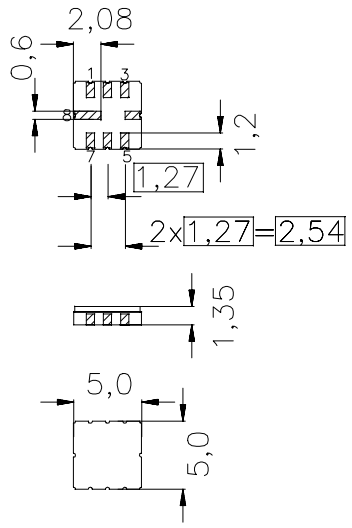
SMD ceramic package **QCC8C**

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

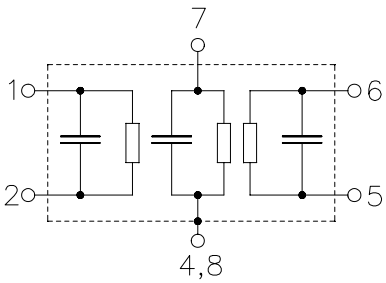
- Gold-plated Ni



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 **S**ensitive **D**evice (**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	

Data Sheet SMD

Characteristics

Ambient temperature: T = -20˚C to +75˚C
Terminating source impedance: Z_S = 340 Ω || -1,9 pF
Terminating load impedance: Z_L = 340 Ω || -1,9 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)	α_{min}	—	4,3	5,0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
f_N -67,7kHz .. f_N+67,7 kHz		—	0,6	2,0	dB
f_N -80,0kHz .. f_N+80,0 kHz		—	0,9	3,0	dB
Passband width $\alpha_{rel} \leq$ 3,0 dB	$B_{3,0dB}$	—	315	—	kHz
Group delay ripple (p-p)	$\Delta\tau$				
f_N -67,7 kHz .. f_N+67,7 kHz		—	0,5	1,8	µs
Relative attenuation (relative to α_{min})	α_{rel}				
$f_N \pm 400$ kHz ... $f_N \pm 600$ kHz		24	32	—	dB
$f_N \pm 600$ kHz ... $f_N \pm 800$ kHz		38	48	—	dB
$f_N \pm 800$ kHz ... $f_N \pm 1,6$ MHz		42	48	—	dB
$f_N \pm 1,6$ MHz ... $f_N \pm 5,0$ MHz		* 52	54	—	dB
$f_N \pm 5,0$ MHz ... $f_N \pm 30,0$ MHz		55	62	—	dB
Impedance within the pass band					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	340 || 1,9	—	Ω || pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	340 || 1,9	—	Ω || pF
Temperature coefficient of frequency 1)	TC_f	—	- 0,036	—	ppm/K²
Turnover temperature	T_0	—	28	—	˚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.

Data Sheet SMD

Characteristics

Ambient temperature: T = -30˚C to +85˚C
Terminating source impedance: Z_S = 340 Ω || -1,9 pF
Terminating load impedance: Z_L = 340 Ω || -1,9 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)	α_{min}	—	4,3	5,0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
f_N -67,7kHz .. f_N+67,7 kHz		—	0,6	3,0	dB
f_N -80,0kHz .. f_N+80,0 kHz		—	0,9	4,5	dB
Passband width					
$\alpha_{rel} \leq$ 3,0 dB	$B_{3,0dB}$	—	315	—	kHz
Group delay ripple (p-p)	$\Delta\tau$				
f_N -67,7 kHz .. f_N+67,7 kHz		—	0,5	1,8	µs
Relative attenuation (relative to α_{min})	α_{rel}				
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$f_N \pm 600$ kHz ... $f_N \pm 800$ kHz		38	48	—	dB
$f_N \pm 800$ kHz ... $f_N \pm 1,6$ MHz		42	48	—	dB
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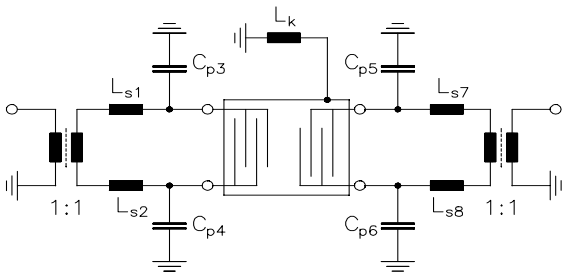
Turnover temperature	T_0	—	28	—	˚C

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

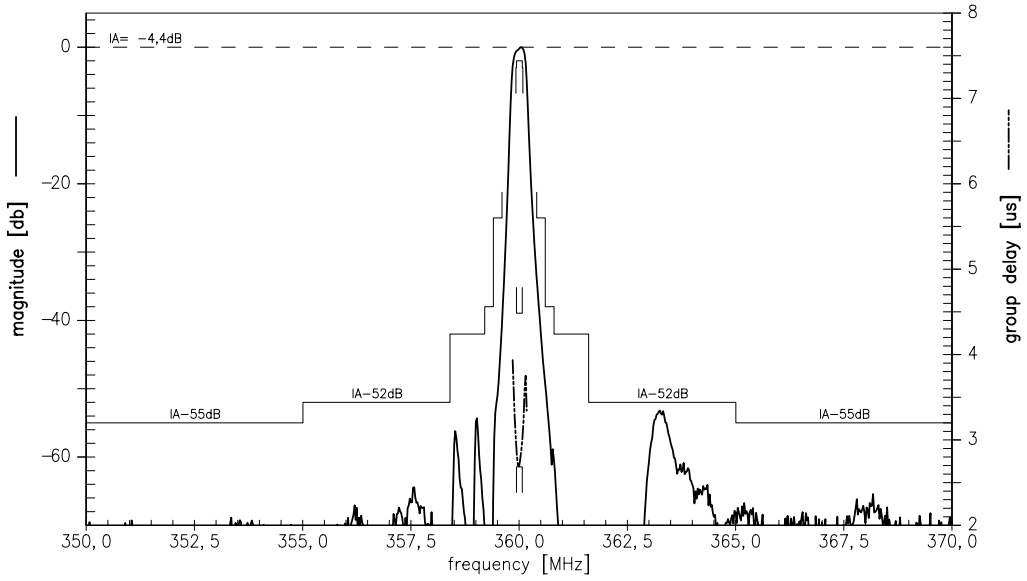
*) In the frequency range from 362,5 MHz to 364,0 MHz there exists one spurious response. The minimum attenuation α_{rel} of this spurious response is more than 48 dB.

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

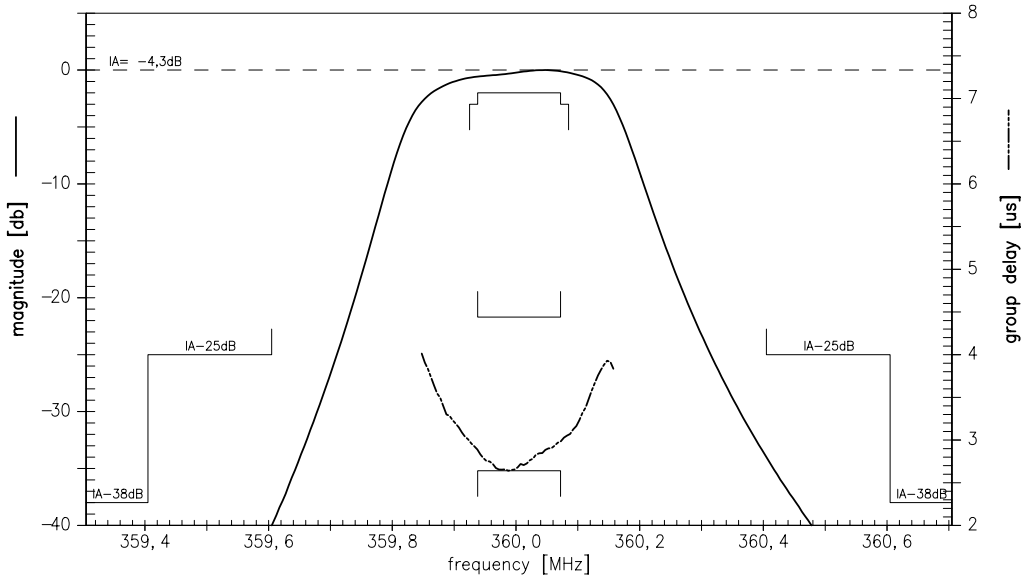


$L_{s1} = L_{s2} = 18nH$
$C_{p3} = C_{p4} = 1,2pF$
$C_{p5} = C_{p6} = 1,2pF$
$L_{s7} = L_{s8} = 18nH$
$L_k = 68\ nH$

Transfer function:



Transfer function (pass band):



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

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