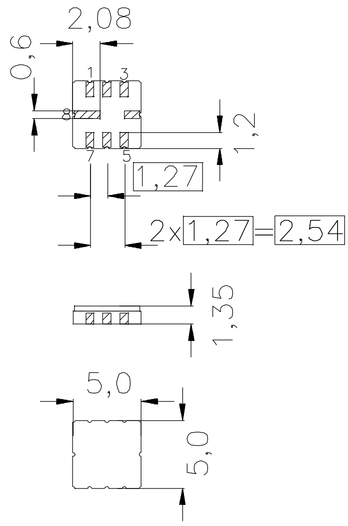
EPCOS

SAW Components

Data Sheet B4846

SMD Ceramic package **QCC8C**



Dimensions in mm, approx. weight 0,10 g

Features

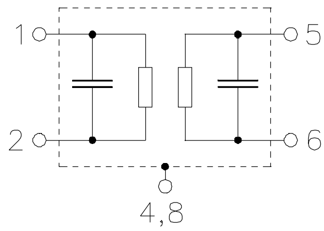
- Low-loss RF filter for mobile telephone
- Channel selection in GSM, PCN systems
- Ceramic Package for **S**urface **M**ounted **T**echnology (**SMT**)
- Low insertion attenuation
- Low group delay ripple

Terminals

- Gold-plated Ni

Pin configuration

1, 2	Input, balanced
5, 6	Output, balanced
4, 8	Case - ground
3, 7	To be grounded



Type	Ordering code	Marking and Package according to	Packing according to
B4846	B39231-B4846-U310	C61157-A7-A67	F61074-V8088-Z000

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

Maximum ratings

Operable temperature range	T	– 25/+ 80	˚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
Source power	P_s	10	dBm	

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

Characteristics

Operating temperature range: T = 25 ˚C
Terminating source impedance: Z_S = 860 Ω || -2,0pf
Terminating load impedance: Z_L = 860 Ω || -2,0pf

		min.	typ.	max.	
Nominal frequency	f_c	—	225,01	—	MHz
Minimum insertion attenuation (including loss in baluns and matching elements)	α_{min}	3,0	3,9	4,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
f_N - 67,5 kHz ... f_N + 67,5 kHz		—	0,6	1,6	dB
f_N - 80,0 kHz ... f_N + 80,0 kHz		—	0,7	3,0	dB
Group delay ripple (p-p)	$\Delta\tau$				
f_N - 50,0 kHz ... f_N + 50,0 kHz		—	0,2	1,3	µs
f_N - 67,5 kHz ... f_N + 67,5 kHz		—	0,3	1,5	µs
f_N - 80,0 kHz ... f_N + 80,0 kHz		—	0,6	1,8	µs
Relative attenuation (relative to α_{min})	α_{rel}				
f_N - 15,00 MHz ... f_N - 5,00 MHz		42	45	—	dB
f_N - 5,00 MHz ... f_N - 2,00 MHz		42	46	—	dB
f_N - 2,00 MHz ... f_N - 0,60 MHz		36	37	—	dB
f_N - 0,60 MHz ... f_N - 0,40 MHz		26,5	29	—	dB
f_N - 0,40 MHz ... f_N - 0,20 MHz		6,5	12	—	dB
f_N + 0,20 MHz ... f_N + 0,40 MHz		6,5	12	—	dB
f_N + 0,40 MHz ... f_N + 0,60 MHz		26,5	29	—	dB
f_N + 0,60 MHz ... f_N + 2,00 MHz		36	37	—	dB
f_N + 2,00 MHz ... f_N + 5,0 MHz		43	47	—	dB
f_N + 3,00 MHz ... f_N + 15,0 MHz		42	45	—	dB
Impedance within the passband					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	860 || 2,0	—	Ω || pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	860 || 2,0	—	Ω || pF
Temperature coefficient of frequency 1)	TC_f	—	-0,036	—	ppm/K²
Frequency inversion point	T_0	—	25	—	˚C

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

Characteristics

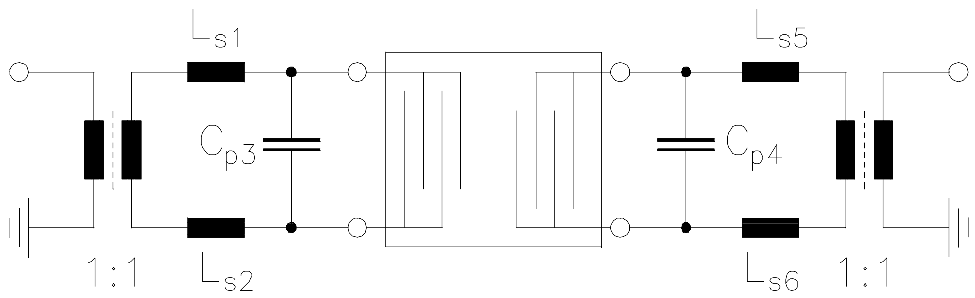
Operating temperature range: T = -20 to +75˚C
Terminating source impedance: Z_S = 860 Ω || −2,0pf
Terminating load impedance: Z_L = 860 Ω || −2,0pf

		min.	typ.	max.	
Nominal frequency	f_N	—	225,00	—	MHz
Minimum insertion attenuation (including loss in baluns and matching elements)	α_{min}	3,0	3,9	5,0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
f_N - 67,5 kHz ... f_N + 67,5 kHz		—	0,7	2,2	dB
f_N - 80,0 kHz ... f_N + 80,0 kHz		—	0,8	3,2	dB
Group delay ripple (p-p)	$\Delta\tau$				
f_N - 50,0 kHz ... f_N + 50,0 kHz		—	0,2	1,3	µs
f_N - 67,5 kHz ... f_N + 67,5 kHz		—	0,4	1,6	µs
f_N - 80,0 kHz ... f_N + 80,0 kHz		—	0,7	1,8	µs
Relative attenuation (relative to α_{min})	α_{rel}				
f_N - 15,00 MHz ... f_N - 5,00 MHz		42	45	—	dB
f_N - 5,00 MHz ... f_N - 2,00 MHz		43	46	—	dB
f_N - 2,00 MHz ... f_N - 0,60 MHz		35	37	—	dB
f_N - 0,60 MHz ... f_N - 0,40 MHz		26	29	—	dB
f_N - 0,40 MHz ... f_N - 0,20 MHz		5	13	—	dB
f_N + 0,20 MHz ... f_N + 0,40 MHz		5	11	—	dB
f_N + 0,40 MHz ... f_N + 0,60 MHz		26	29	—	dB
f_N + 0,60 MHz ... f_N + 2,00 MHz		35	37	—	dB
f_N + 2,00 MHz ... f_N + 5,00 MHz		43	47	—	dB
f_N + 5,00 MHz ... f_N + 15,00 MHz		42	45	—	dB
Impedance within the passband					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	860 || 2,0	—	Ω || pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	860 || 2,0	—	Ω || pF
Temperature coefficient of frequency 1)	TC_f	—	-0,036	—	ppm/K²
Frequency inversion point	T_0	—	25	—	˚C

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

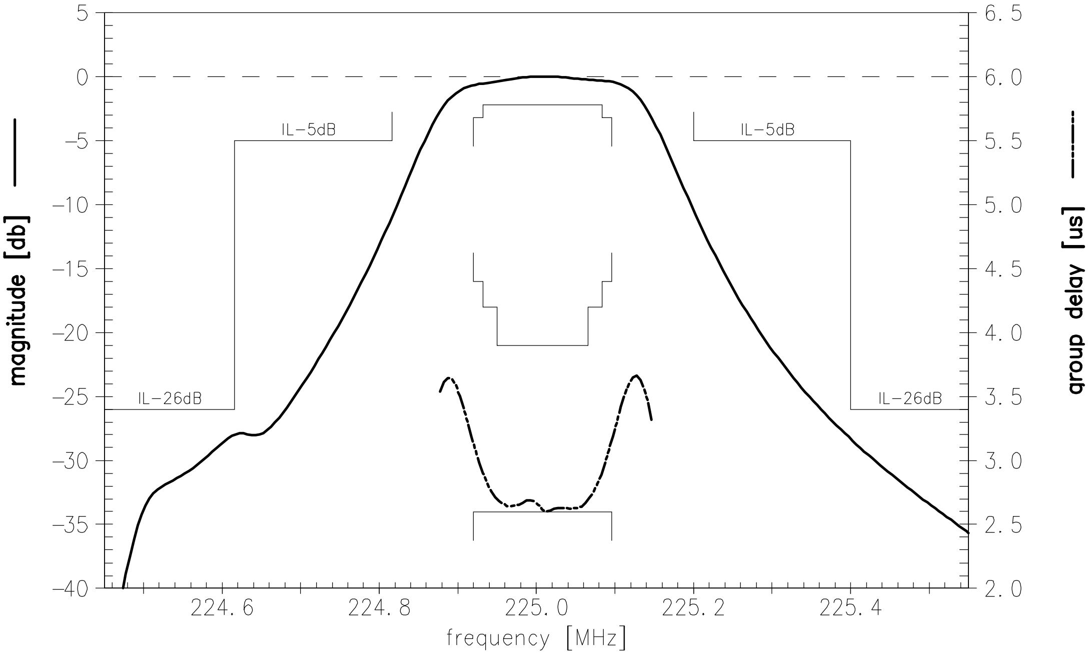
Test matching network (element values depend on pcb layout)

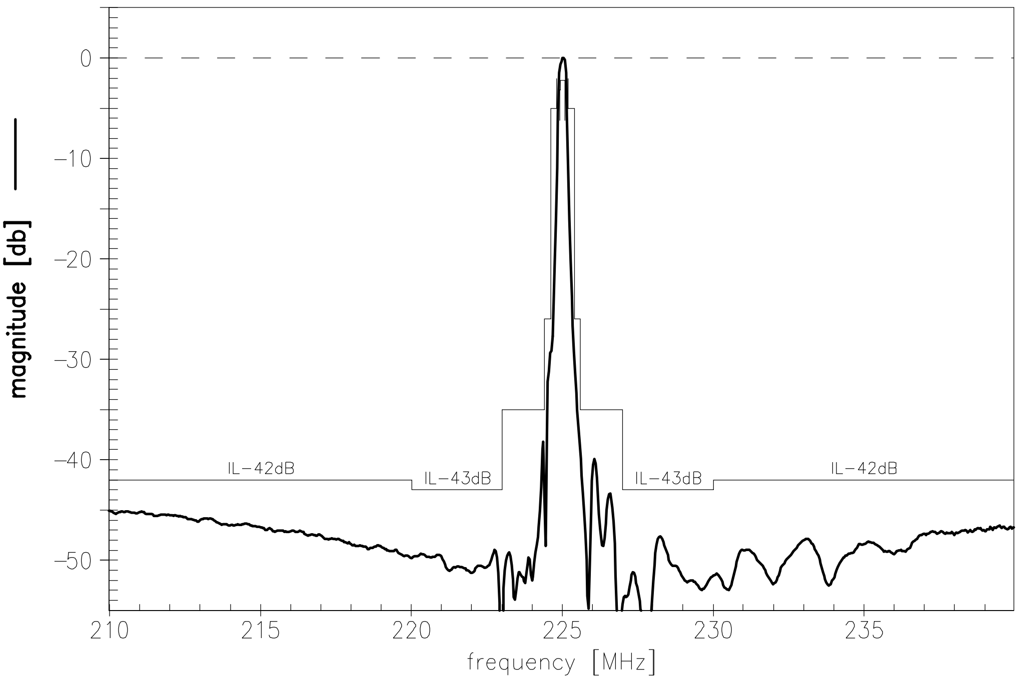
Source impedance Z_S=50 Ω, load impedance Z_L=50 Ω



L_{s1} = L_{s2} = 47 nH
L_{s5} = L_{s6} = 47 nH
C_{p3} = C_{p4} = 1,2 pF

Transfer function(normalized):





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

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.