



SAW Components

Data Sheet B3825

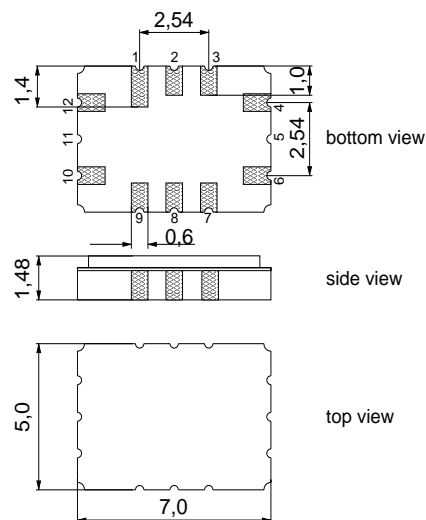


Data Sheet
Ceramic package QCC12C
Features

- IF low-loss filter for base stations
- Channel selection in W-CDMA systems
- Balanced and unbalanced operation possible
- 3,84 MHz usable bandwidth
- Ceramic SMD package

Terminals

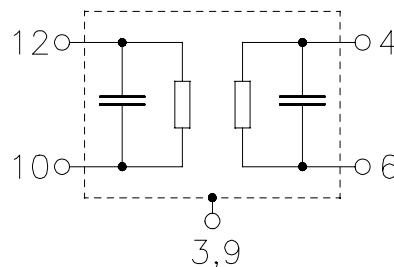
- Gold plated



Dim. in mm, aprox. weight 0,22 g

Pin configuration

12	Input
10	Input ground or balanced input
6	Output
4	Output ground or balanced output
1, 2, 7, 8	to be grounded
3, 9	Case - ground



Type	Ordering code	Marking and Package according to	Packing according to
B3825	B39381-B3825-H310	C61157-A7-A95	F61074-V8170-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	- 40/+ 85	°C
Storage temperature range	T_{stg}	- 40/+ 85	°C
DC voltage	V_{DC}	0	V
Source power	P_s	10	dBm



SAW Components

B3825

Low-Loss Filter

380,00 MHz

Data Sheet

Characteristics (unbalanced operation)

Operating temperature: $T = -25 \text{ to } +85 \text{ }^{\circ}\text{C}$
Terminating source impedance: $Z_S = 577 \text{ } \Omega \parallel 20 \text{ nH}$
Terminating load impedance: $Z_L = 817 \text{ } \Omega \parallel 21 \text{ nH}$

		min.	typ.	max.	
Nominal frequency	f_N	—	380,0	—	MHz
Minimum insertion attenuation (including matching network ¹⁾)	α_{\min}	8,0	8,9	10,0	dB
Passband width	$B_{3,0\text{dB}}$				
$\alpha_{\text{rel}} \leq 3,0 \text{ dB}$		4,9	5,1	5,3	MHz
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm 1,92 \text{ MHz}$		0,2	1,0	1,2	dB
Phase ripple (p-p)	$\Delta\phi$				
$f_N \pm 1,92 \text{ MHz}$		3,0	5,0	7,0	°
Absolute group delay	τ				
@ f_N		360	460	560	ns
Group delay ripple (p-p)	$\Delta\tau$				
$f_N \pm 1,92 \text{ MHz}$		40	80	180	ns
Mean value of absolute group delay	$\bar{\tau}$				
$f_N \pm 1,92 \text{ MHz}$		440	460	480	ns
Adjacent channel selectivity	ACS	24	32	39	dB
Intermodulation	IM3				
f1 = 360 MHz, input power 0 dBm f2 = 370 MHz, input power 0 dBm @ f_N		-120	-95	-85	dBm
f1 = 360 MHz, input power -5 dBm f2 = 370 MHz, input power -5 dBm @ f_N		-135	-110	-100	dBm



SAW Components	B3825
Low-Loss Filter	380,00 MHz
Data Sheet	

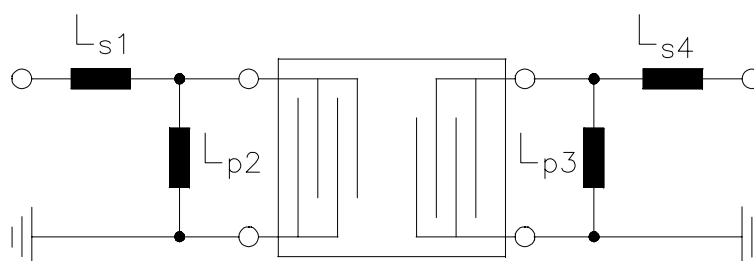
	min.	typ.	max.	
f1 = 390 MHz, input power 0 dBm f2 = 400 MHz, input power 0 dBm @ f_N	-120	-95	-85	dBm
f1 = 390 MHz, input power -5 dBm f2 = 400 MHz, input power -5 dBm @ f_N	-135	-110	-100	dBm
Minimum relative attenuation (relative to α_{\min}) α_{rel}				
at $f_N - 5,0$ MHz	37	40	50	dB
at $f_N + 5,0$ MHz	40	45	50	dB
DC ... $f_N - 20,0$ MHz	42	46	55	dB
$f_N - 20,0$ MHz ... $f_N - 17,5$ MHz	35	38	45	dB
$f_N - 17,5$ MHz ... $f_N - 13,5$ MHz	42	45	55	dB
$f_N - 13,5$ MHz ... $f_N - 7,5$ MHz	38	40	45	dB
$f_N - 7,5$ MHz ... $f_N - 4,1$ MHz	35	38	45	dB
$f_N - 4,1$ MHz ... $f_N - 3,2$ MHz	20	22	40	dB
$f_N + 3,2$ MHz ... $f_N + 4,1$ MHz	20	23	40	dB
$f_N + 4,1$ MHz ... $f_N + 5,0$ MHz	34	37	45	dB
$f_N + 5,0$ MHz ... $f_N + 8,0$ MHz	37	39	45	dB
$f_N + 8,0$ MHz ... $f_N + 10,5$ MHz	32	35	45	dB
$f_N + 10,5$ MHz ... $f_N + 17,5$ MHz	39	42	50	dB
$f_N + 17,5$ MHz ... $f_N + 20,0$ MHz	35	38	45	dB
$f_N + 20,0$ MHz ... $f_N + 100,0$ MHz	40	43	55	dB
Impedance at f_N (without matching)				
Input: $Z_{\text{IN}} = R_{\text{IN}} \parallel C_{\text{IN}}$	—	795 \parallel 6	—	$\Omega \parallel \text{pF}$
Output: $Z_{\text{OUT}} = R_{\text{OUT}} \parallel C_{\text{OUT}}$	—	652 \parallel 6	—	$\Omega \parallel \text{pF}$
Temperature coefficient of frequency ²⁾ TC_f	—	-0,036	—	ppm/K ²
Turnover temperature T_0	—	25	—	°C

¹⁾ Matching inductor Q=40

²⁾ Temperature dependance of f_c : $f_c(T_A) = f_c(T_0)(1 + TC_f(T_A - T_0)^2)$

Data Sheet
Matching network

(Element values depend upon PCB layout)



$$L_{s1} = 68 \text{ nH}$$

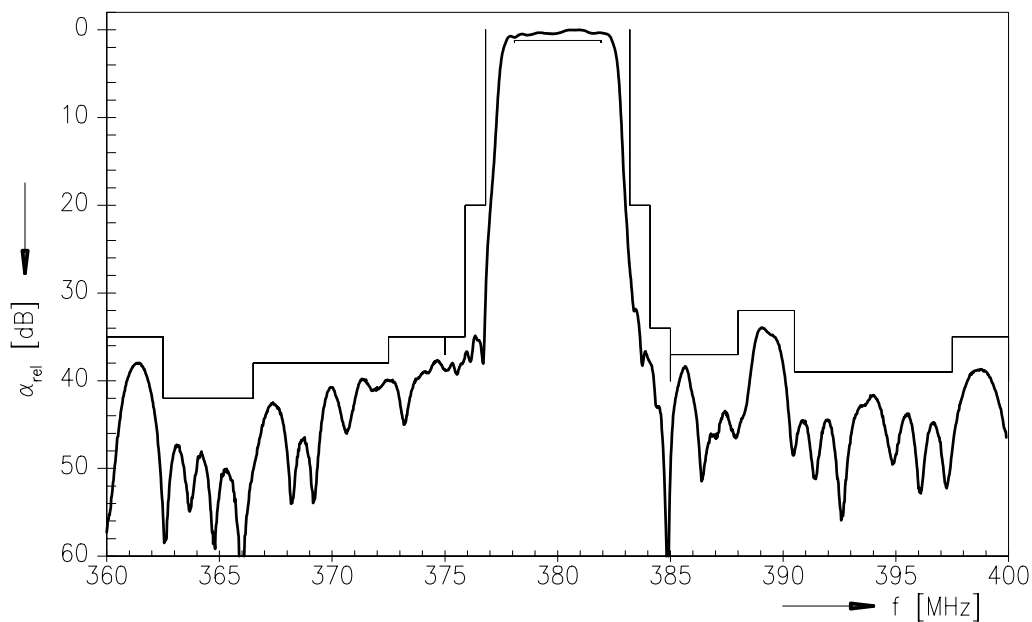
$$L_{p2} = 27 \text{ nH}$$

$$L_{p3} = 27 \text{ nH}$$

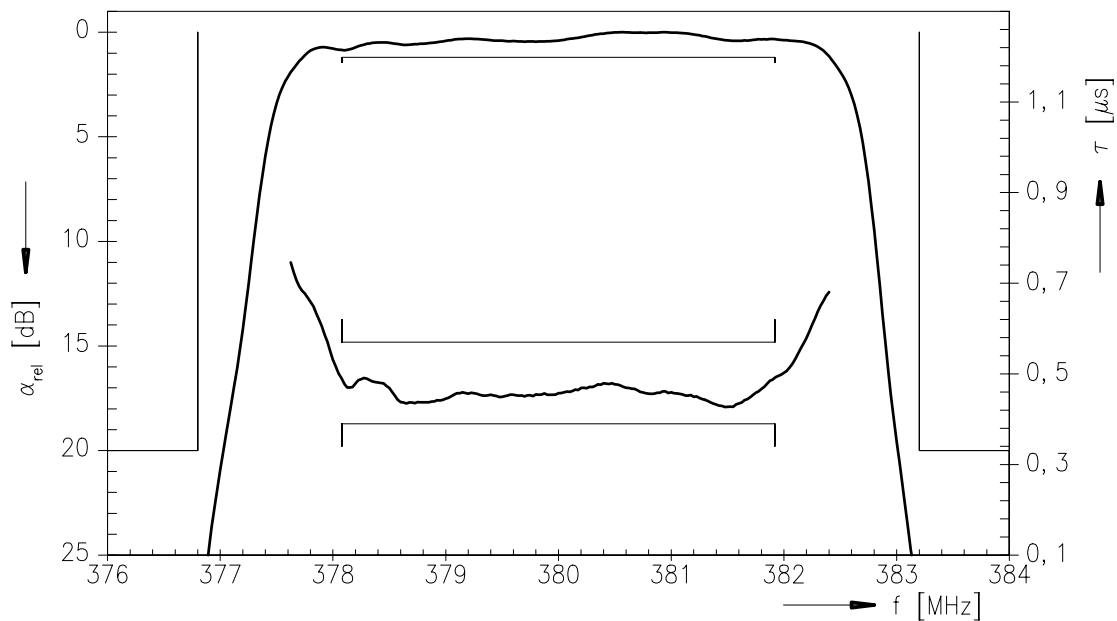
$$L_{s4} = 82 \text{ nH}$$

Data Sheet

Normalized frequency response



Normalized frequency response (pass band)





SAW Components	B3825
Low-Loss Filter	380,00 MHz

Data Sheet

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.