



SAW Components

Data Sheet B3825

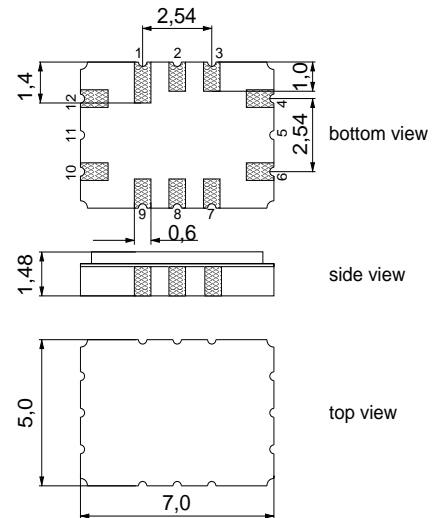


Data Sheet
Ceramic package QCC12C
Features

- 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

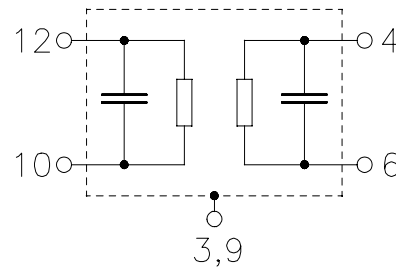
- Gold plated



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	



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Low-Loss Filter

380,00 MHz

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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



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		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 _{IN} = R _{IN} C _{IN}		—	795 6	—	Ω pF
Output: Z _{OUT} = R _{OUT} C _{OUT}		—	652 6	—	Ω pF
Temperature coefficient of frequency ²⁾	TC _f	—	-0,036	—	ppm/K ²
Turnover temperature	T ₀	—	25	—	°C

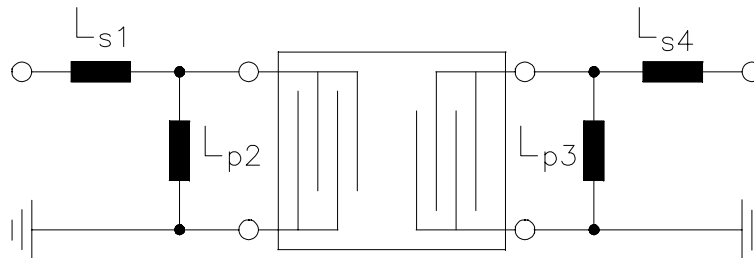
1) Matching inductor Q=40

2) Temperature dependance of f_c: f_c(T_A) = f_c(T₀)(1 + TC_f(T_A - T₀)²)

Data Sheet

Matching network

(Element values depend upon PCB layout)



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

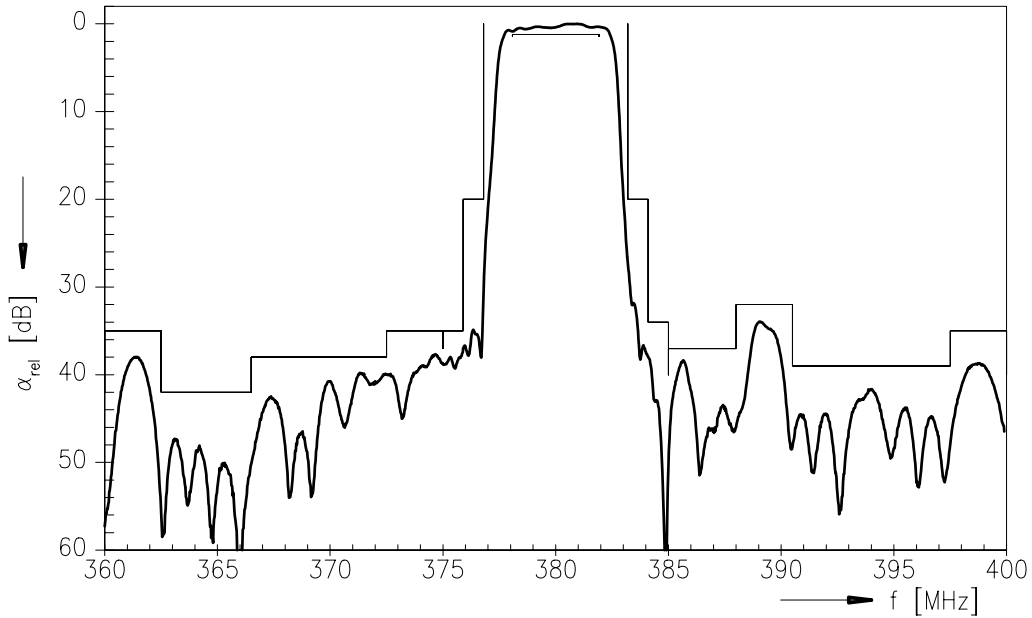
$$L_{p2} = 27 \text{ nH}$$

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

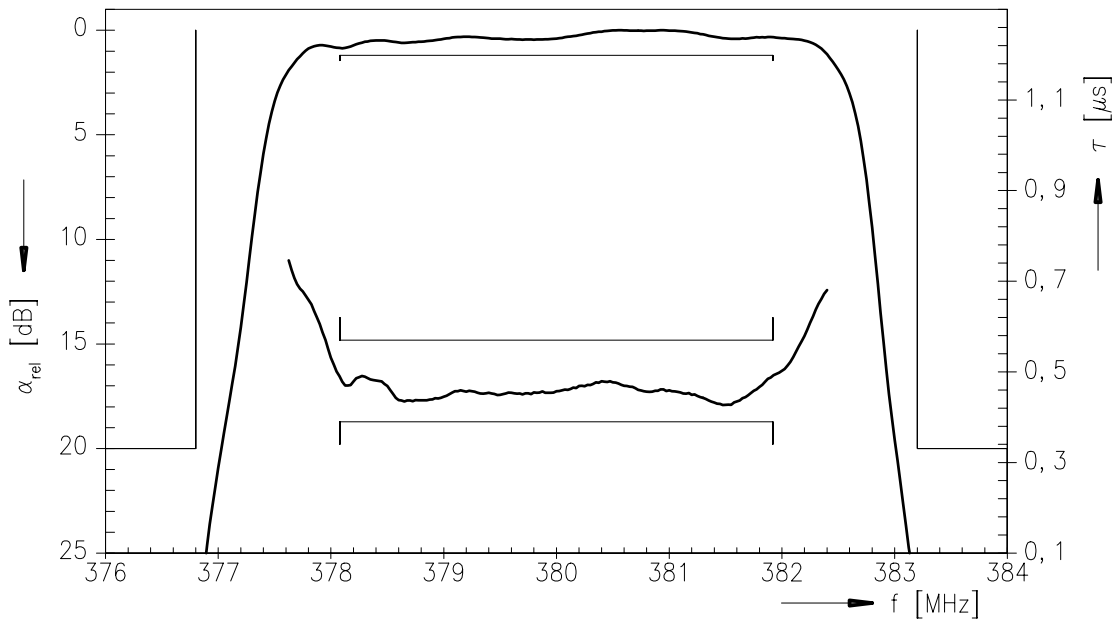
$$L_{s4} = 82 \text{ nH}$$

Data Sheet

Normalized frequency response



Normalized frequency response (pass band)





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