Siemens Matsushita Components

SAW Components
Low Loss Filter

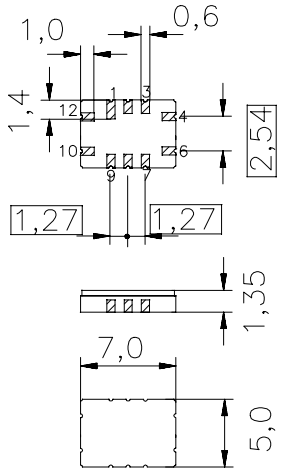
B4831
400,00 MHz

Data Sheet

Ceramic package **QCC12B**

Features

- Low-loss IF filter for mobile telephone
- Channel selection in GSM, PCN, PCS systems
- Ceramic SMD package
- High stopband attenuation
- Flat group delay response



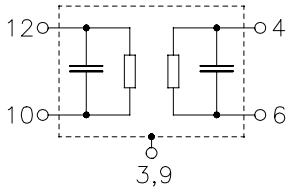
Terminals

- Gold-plated Ni

Dimensions in mm, approx. weight 0,2 g

Pin configuration

4	Input
6	Input
10	Output
12	Output
3, 9	Case – ground
1, 2, 7, 8	To be grounded



Type	Ordering code	Marking and Package according to	Packing according to
B4831	B39401-B4831-Z910	C61157-A7-A52	F61074-V8038-Z000

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

Maximum ratings

Operable temperature range	T	– 20/+ 75	˚C
Storage temperature range	T_{stg}	– 25/+ 85	˚C
DC voltage	V_{DC}	0	V
Source power	P_s	10	dBm

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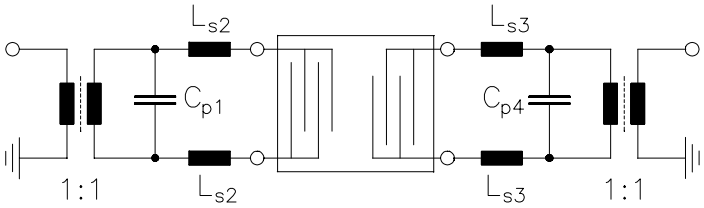
Characteristics

Operating temperature: T = 25 °C
Terminating source impedance: Z_S = 450 Ω || - 1,4 pF
Terminating load impedance: Z_L = 450 Ω || - 1,4 pF

		min.	typ.	max.	
Nominal frequency	f_N	—	400,00	—	MHz
Minimum insertion attenuation (including losses in matching circuit)	α_{min}	—	4,3	6,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
f_N - 70,0 kHz ... f_N + 100,0 kHz		—	0,5	2,0	dB
f_N - 100,0 kHz ... f_N + 130,0 kHz		—	0,8	3,0	dB
Group delay ripple (p-p)	$\Delta\tau$				
f_N - 80,0 kHz ... f_N + 120,0 kHz		—	0,7	1,5	µs
Relative attenuation (relative to α_{min})	α_{rel}				
f_N - 30,00 MHz ... f_N - 3,00 MHz		45	65	—	dB
f_N - 3,00 MHz ... f_N - 0,60 MHz		40	52	—	dB
f_N - 0,60 MHz ... f_N - 0,40 MHz		20	27	—	dB
f_N + 0,40 MHz ... f_N + 0,60 MHz		17	26	—	dB
f_N + 0,60 MHz ... f_N + 0,80 MHz		35	39	—	dB
f_N + 0,80 MHz ... f_N + 1,00 MHz		40	49	—	dB
f_N + 1,00 MHz ... f_N + 30,00 MHz		45	54	—	dB
f_N + 26,00 MHz		67	75	—	dB
Impedance within the passband					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	450 ‖ 1,4	—	Ω ‖ pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	450 ‖ 1,4	—	Ω ‖ pF
Temperature coefficient of frequency [1]	TC_f	—	– 0,036	—	ppm/K²
Frequency inversion point	T_0	—	35	—	°C

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

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



C_{p1} = 1 pF
L_{s2} = 33 nH
L_{s3} = 33 nH
C_{p4} = 1 pF

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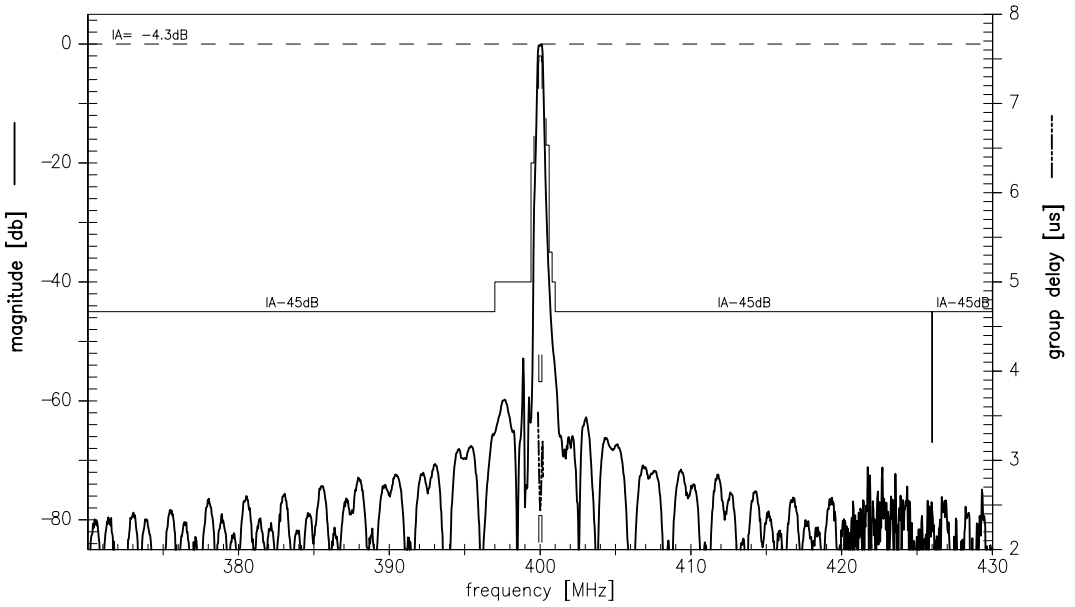
Transfer function:



Transfer function (pass band):