Siemens Matsushita Components

SAW Components
Low-Loss Filter

B4830
200,0 MHz

Data Sheet

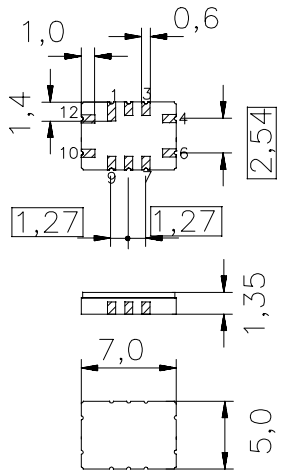
SMD ceramic package QCC12B

Features

- Low-loss IF filter for mobile telephone
- Channel selection in GSM, PCN, PCS systems
- Ceramic SMD package
- Balanced and unbalanced operation possible

Terminals

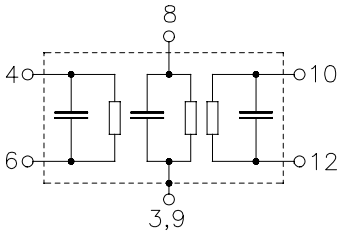
- Gold-plated Ni



Dimensions in mm, approx. weight 0,2 g

Pin configuration

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



Type	Ordering code	Marking and Package according to	Packing according to
B4830	B39201-B4830-Z910	C61157-A7-A52	F61074-V8038-Z000

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

Maximum ratings

Operable temperature range	T	– 30/+ 80	˚C	
Storage temperature range	T_{stg}	– 35/+ 85	˚C	
DC voltage	V_{DC}	0	V	
Source power	P_S	10	dBm	

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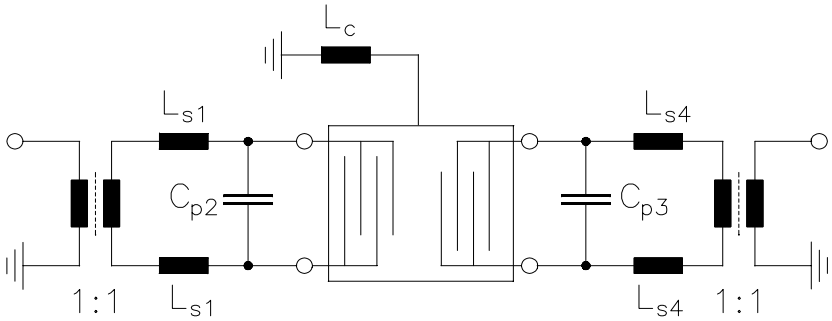
Characteristics

Operating temperature: T = 25 °C
Terminating source impedance: Z_S = 1 kΩ || 450 nH
Terminating load impedance: Z_L = 1 kΩ || 450 nH
External coil L_C = 170 nH

		min.	typ.	max.	
Nominal frequency	f_N	—	200,0	—	MHz
Minimum insertion attenuation (including losses in the matching network)	α_{min}	—	3,8	5,0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
f_N - 70,0 kHz ... f_N + 90,0 kHz		—	0,5	1,5	dB
f_N - 90,0 kHz ... f_N + 110,0 kHz		—	0,7	2,0	dB
Group delay ripple (p-p)	$\Delta\tau$				
f_N - 70,0 kHz ... f_N + 90,0 kHz		—	0,9	2,5	µs
Relative attenuation (relative to α_{min})	α_{rel}				
0,10 MHz ... f_N - 2,98 MHz		45	54	—	dB
f_N - 2,98 MHz ... f_N - 1,58 MHz		35	51	—	dB
f_N - 1,58 MHz ... f_N - 0,78 MHz		27	51	—	dB
f_N - 0,78 MHz ... f_N - 0,58 MHz		25	44	—	dB
f_N - 0,58 MHz ... f_N - 0,38 MHz		15	32	—	dB
f_N - 0,38 MHz ... f_N - 0,18 MHz		3	10	—	dB
f_N + 0,20 MHz ... f_N + 0,40 MHz		3	8	—	dB
f_N + 0,40 MHz ... f_N + 0,60 MHz		15	26	—	dB
f_N + 0,60 MHz ... f_N + 0,80 MHz		25	42	—	dB
f_N + 0,80 MHz ... f_N + 1,60 MHz		27	50	—	dB
f_N + 1,60 MHz ... f_N + 3,00 MHz		35	58	—	dB
f_N + 3,00 MHz ... f_N + 400,0 MHz		45	56	—	dB
Impedance within the passband					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	1 || 1,4	—	kΩ || pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	1 || 1,4	—	kΩ || pF
Temperature coefficient of frequency [1]	TC_f	—	0,036	—	ppm/K²
Turnover temperature	T_0	—	30	—	°C

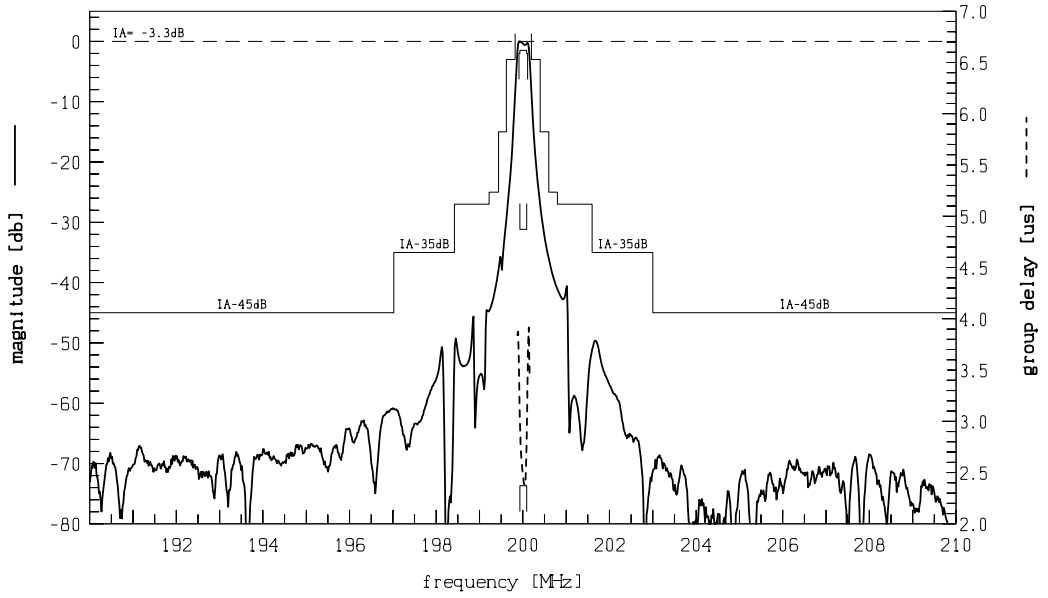
[1] Temperature dependence of center frequency f_c: $f_c(T) = f_c(T_0)(1 + TC_f(T - T_0)^2)$

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



L_{s1} = 59 nH
C_{p2} = 1,2 pF
C_{p3} = 1,2 pF
L_{s4} = 59 nH
L_c = 170 nH

Transfer function (measured in test matching network to 50 Ω)**:**



Transfer function - passband (measured in test matching network to 50 Ω)**:**