Siemens Matsushita Components

SAW Components
Low-Loss Filter

B4841
440,00 MHz

Data Sheet

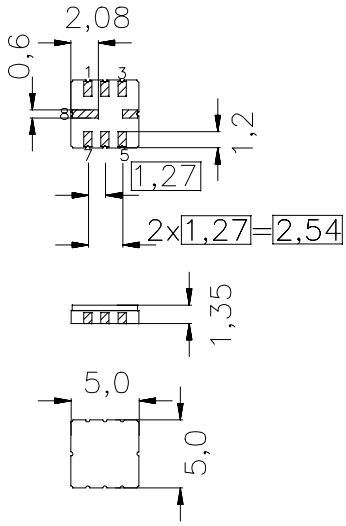
Features

- IF low-loss filter for mobile telephone
- Channel selection in GSM, PCN, PCS systems
- Package for **S**urface **M**ounted **T**echnology (**SMT**)
- Ceramic package
- Balanced and unbalanced operation possible
- High stopband attenuation

Terminals

- Gold-plated Ni

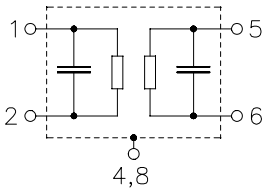
SMD ceramic package **QCC8C**



Dimensions in mm, approx. weight 0,07 g

Pin configuration

2	Input or balanced input
1	Input-ground or balanced input
6	Output or balanced output
5	Output-ground or balanced output
3, 7	Not connected
4, 8	Case - Ground



Type	Ordering code	Marking and Package according to	Packing according to
B4841	B39441-B4841-U310	C61157-A7-A56	F61074-V8070-Z000

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

Maximum ratings

Operable temperature range	T	– 20/+ 70	˚C
Storage temperature range	T_{stg}	– 30/+ 85	˚C
DC voltage	V_{DC}	3	V
Source power	P_s	10	dBm

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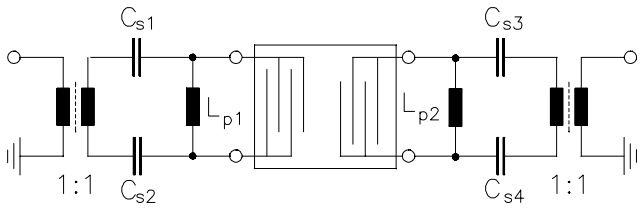
Characteristics for balanced operation

Operating temperature range: T = -20 to 70 °C
Terminating source impedance: Z_S = 360 Ω || -1,5 pF
Terminating load impedance: Z_L = 340 Ω || -1,7 pF

		min.	typ.	max.	
Nominal frequency	f_N	—	440,0	—	MHz
Minimum insertion attenuation	α_{min}				
including losses in matching network		—	4,6	5,5	dB
including losses in matching network and balun		—	5,7	6,5	dB
Amplitude ripple in passband (p-p)	$\Delta\alpha$				
f_N - 67,0 kHz ... f_N + 67,0 kHz		—	0,4	2,0	dB
f_N - 80,0 kHz ... f_N + 80,0 kHz		—	0,5	3,0	dB
Group delay ripple (p-p)	$\Delta\tau$				
f_N - 80,0 kHz ... f_N + 80,0 kHz		—	0,6	1,5	µs
Relative attenuation (relative to α_{min})	α_{rel}				
f_N - 75,00 MHz ... f_N - 1,60 MHz		55	62	—	dB
f_N - 1,60 MHz ... f_N - 0,80 MHz		38	46	—	dB
f_N - 0,80 MHz ... f_N - 0,60 MHz		32	55	—	dB
f_N - 0,60 MHz ... f_N - 0,40 MHz		18	33	—	dB
f_N + 0,40 MHz ... f_N + 0,60 MHz		18	28	—	dB
f_N + 0,60 MHz ... f_N + 0,80 MHz		32	40	—	dB
f_N + 0,80 MHz ... f_N + 1,60 MHz		38	47	—	dB
f_N + 1,60 MHz ... f_N + 75,00 MHz		55	60	—	dB
Impedance within the passband					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	360 || 1,5	—	Ω || pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	340 || 1,7	—	Ω || pF
Temperature coefficient of frequency [1]	TC_f	—	-0,036	—	ppm/K^2
Turnover temperature	T_0	—	25	—	°C

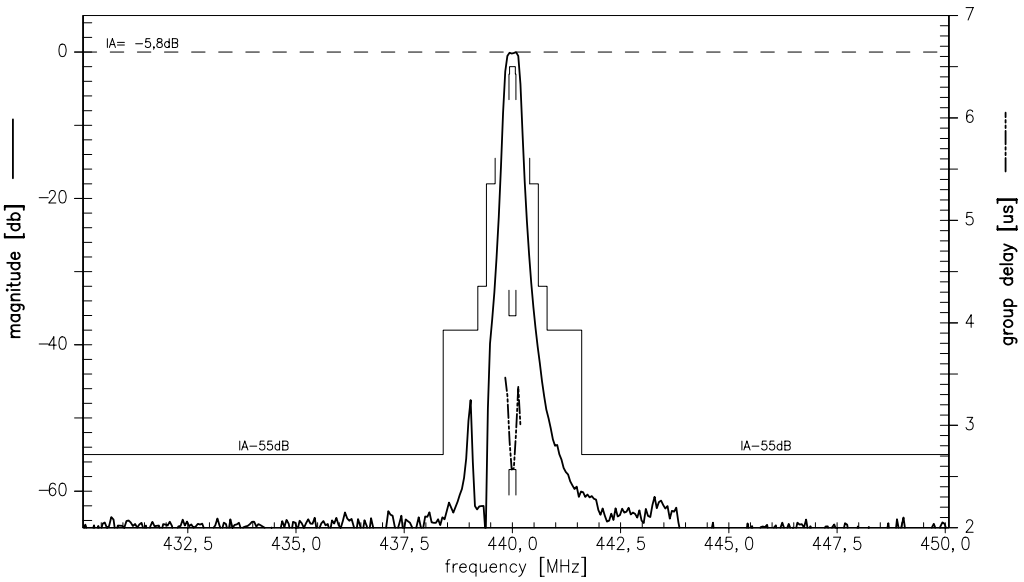
[1] Temperature dependence of f_c: $f_c(T) = f_c(T_0)(1 + TC_f(T - T_0)^2)$

Matching network to 50 Ω: (Element values depend on PCB layout)



C_{s1}	=	3,9 pF
C_{s2}	=	3,9 pF
L_{p1}	=	27 nH
L_{p2}	=	22 nH
C_{s3}	=	5,6 pF
C_{p4}	=	5,6 pF

Transfer function:



Transfer function (pass band):