SAW Components

SAW IF filter

BWA

Series/type: **B5250**
Ordering code: **B39141B5250H810**

Date: Sep 17, 2012
Version: 2.0

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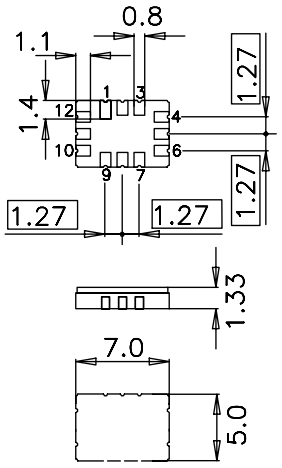
Application

- Low-loss IF filter for BWA
- Usable passband 2.0 MHz
- Balanced operation

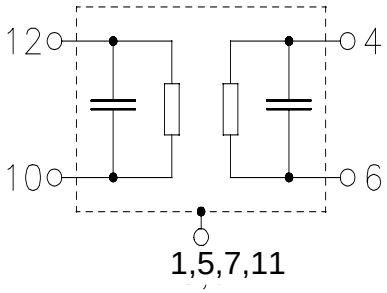
Features

- Package size 7.0 x 5.0 x 1.33 mm³
- Package code QCC12E
- RoHS compatible
- Approx. weight 0.25 g
- Ceramic package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- Filter surface passivated
- Moisture Sensitivity Level 1



Pin configuration

■	10	Input
■	12	Input ground or balanced input
■	4	Output
■	6	Ouput ground or balanced ouput
■	1, 5, 7, 11	Case Ground
■	2, 3, 8, 9	To be grounded



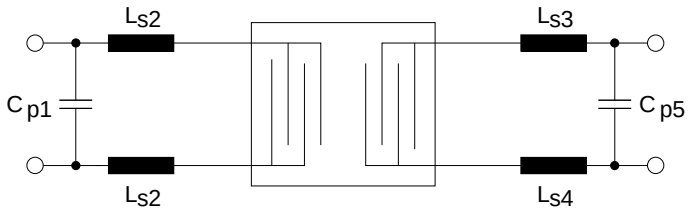
Data sheet SMD

Characteristics

Operating temperature range: T = -35˚C to 80 ˚C
Terminating source impedance: Z_S = 200 Ω balanced or 50 Ω unbalanced and matching network
Terminating load impedance: Z_L = 200 Ω balanced or 50 Ω unbalanced and matching network

		min.	typ. @ 25 ˚C	max.	
Nominal frequency	f_N	—	140.0	—	MHz
Minimum insertion attenuation (including matching network)	α_{min}	—	10.7	13	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm 0.5$ MHz		—	0.4	1.0	dB
$f_N \pm 1.0$ MHz		—	1.7	3.0	dB
Absolute group delay	τ				
$f_N \pm 0.5$ MHz		—	0.84	—	µs
Group delay ripple (p-p)	$\Delta\tau$				
$f_N \pm 0.5$ MHz		—	50	120	ns
Triple transit suppression		35	43	—	dB
Return loss, input $f_N \pm 1.0$ MHz		12	16	—	dB
Return loss, output $f_N \pm 1.0$ MHz		12	21	—	dB
Relative attenuation (relative to α_{min})	α_{rel}				
10.000 MHz ... 135.50 MHz		40	48	—	dB
135.50 MHz ... 137.50 MHz		28	35	—	dB
142.50 MHz ... 145.50 MHz		28	35	—	dB
145.50 MHz ... 152.00 MHz		38	42	—	dB
152.00 MHz ... 425.00 MHz		45	56	—	dB
Temperature coefficient of frequency	TC_f	—	-0.036	—	ppm/K²

Matching network to 200 Ω Input balanced / 200 Ω Ouput balanced

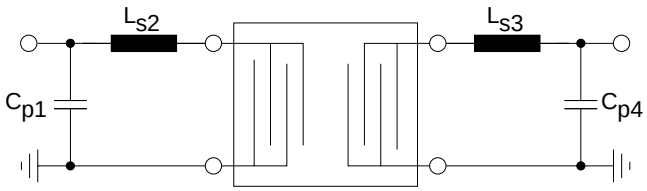


C_{p1} =29 pF L_{s2} =62 nH

C_{p5} =22 pF L_{s3} =82 nH

(matching element values depend on PCB layout)

Matching network to 50 Ω input unbalanced / 50 Ω output unbalanced



C_{p1} = 56pF L_{s2} =110nH

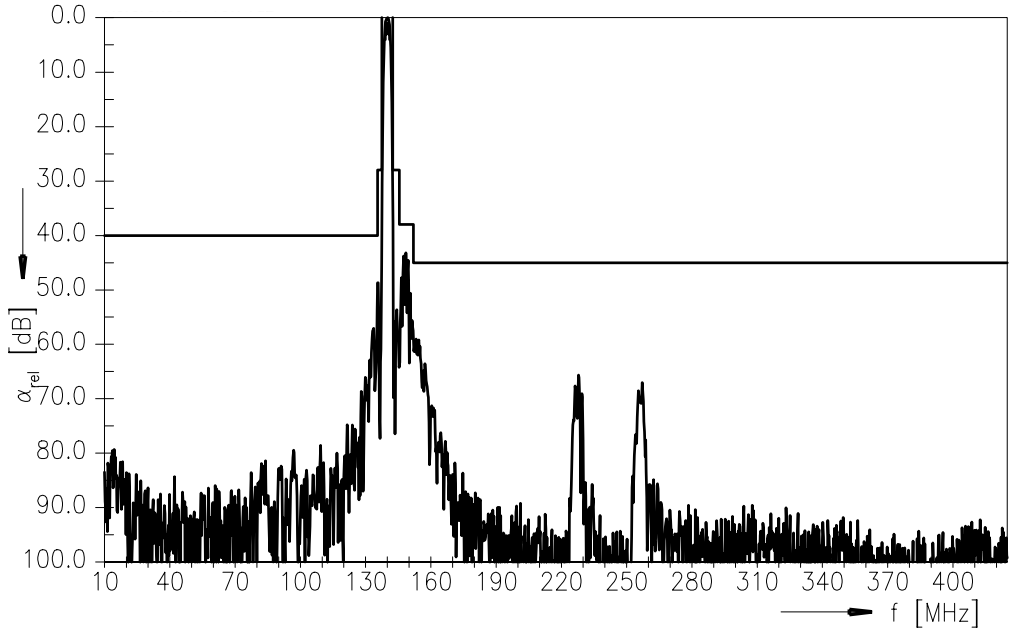
C_{p4} =46 pF L_{s3} =150 nH

(matching element values depend on PCB layout)

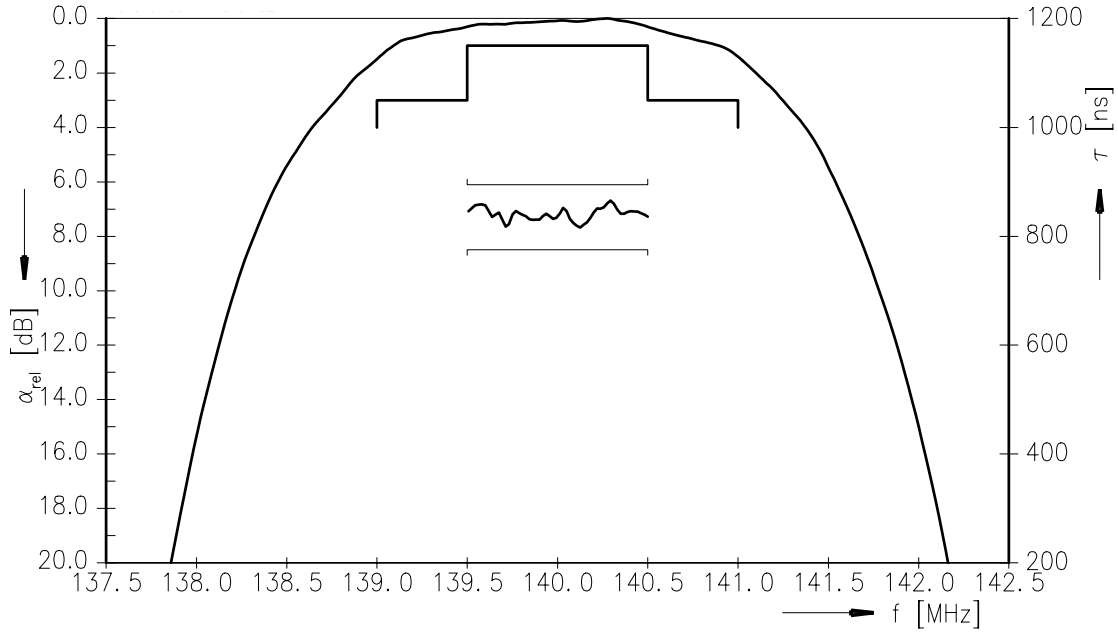
Maximum ratings

Operable temperature range	T	–40/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	0	V	
Input power	P_{IN}	10	dBm	

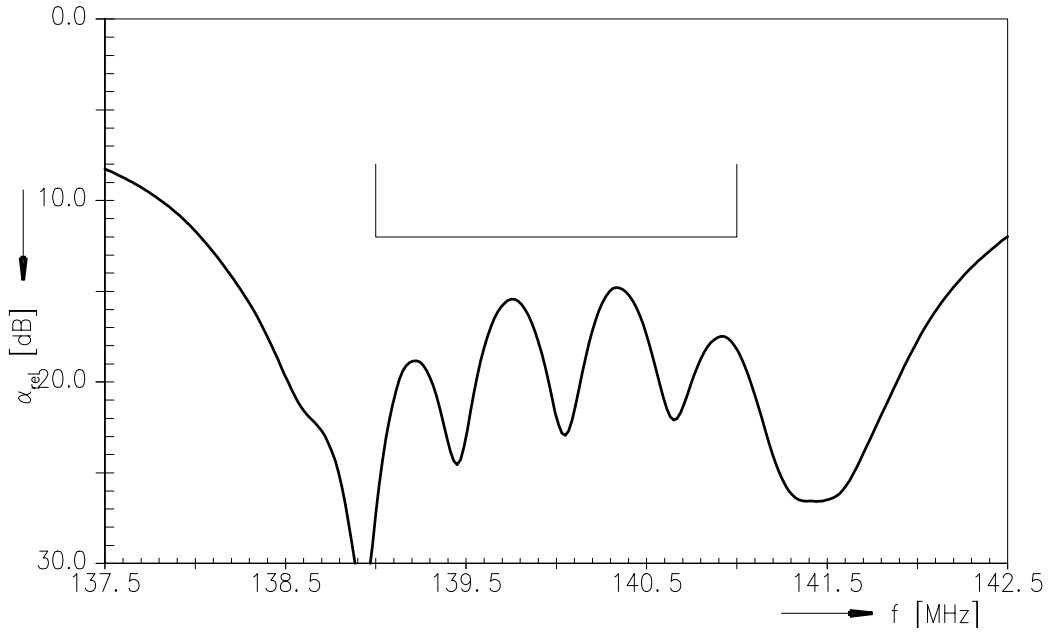
Transfer function (Wide band)



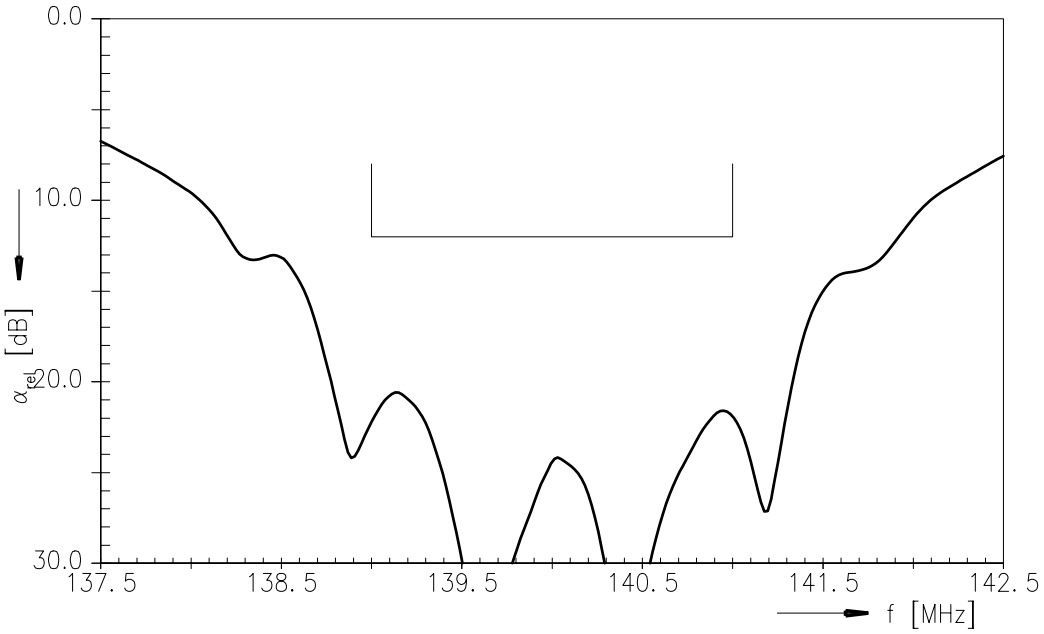
Transfer function (Passband)



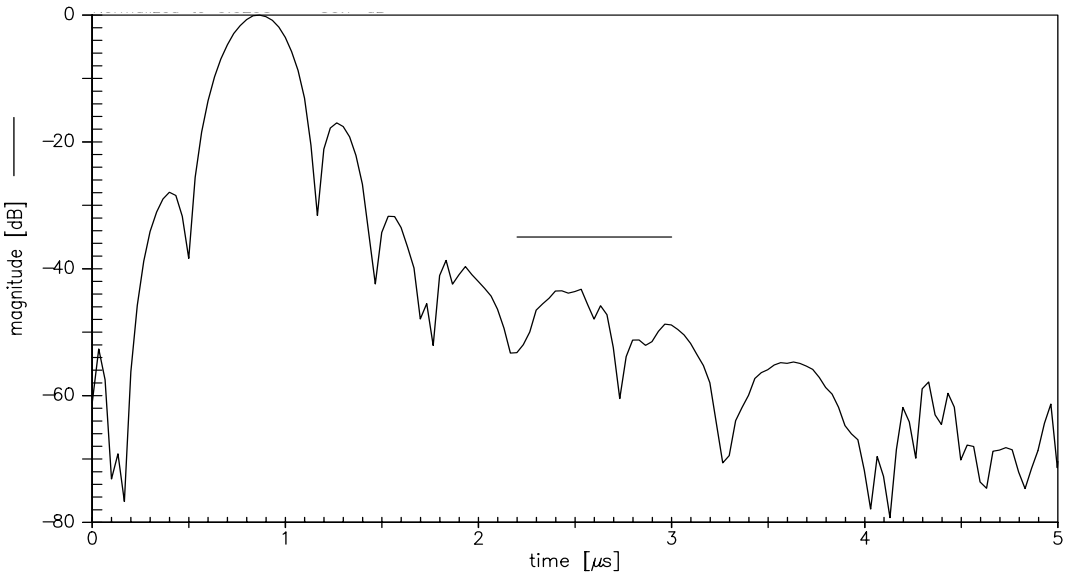
Return loss (S11)



Return loss (S22)



Triple transit



References

Type	B5250
Ordering code	B39141B5250H810
Marking and package	C61157-A7-A103
Packaging	F61074-V8170-Z000
Date codes	L_1126
S-parameters	B5250_NB.s2p, B5250_WB.s2p see file header for port/in assignment table
Soldering profile	S_6001
RoHS compatible	defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment."
Matching coils	See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm

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