SAW Components

SAW IF filter

GSM Base Station

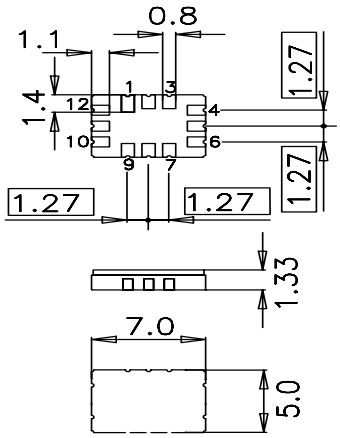
Series/type:	**B5233**
Ordering code:	**B39141B5233H810**
Date:	Jun 30, 2011
Version:	2.0

Application

- Low-loss IF filter for GSM applications
- Usable passband 35 MHz
- Balanced operation

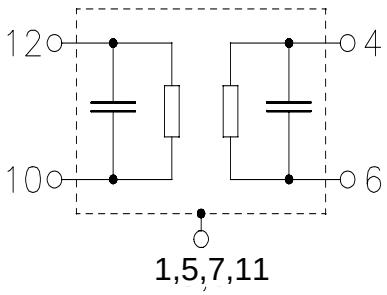
Features

- 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, 12	Input
■	4, 6	Output
■	1,5,7,11	Case Ground
■	2,3,8,9	To be grounded



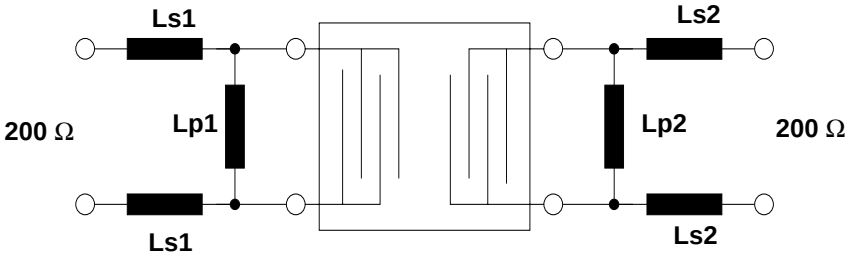
Data Sheet SMD

Characteristics

Operating temperature range: T = –40 to 85 ˚C
Terminating source impedance: Z_S = 200 Ω balanced and matching network
Terminating load impedance: Z_L = 200 Ω balanced and matching network

		min.	typ. @ 25 ˚C	max.	
Nominal frequency	f_N	—	138.2	—	MHz
Minimum insertion attenuation (including matching network)	α_{min}	—	10.4	12	dB
Passband width $\alpha_{rel} \leq$ 1.2 dB	$B_{1.2dB}$	35.0	41	—	MHz
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm$ 17.6 MHz		—	0.7	1.4	dB
Group delay ripple (p-p)	$\Delta\tau$				
$f_N \pm$ 17.6 MHz		—	30	100	ns
Relative attenuation (relative to α_{min})	α_{rel}				
28.00 MHz ... 64.00 MHz		40	58	—	dB
212.0 MHz ... 464.0 MHz		40	44	—	dB
464.0 MHz ... 3000 MHz		45	60	—	dB
Average group delay	τ_{mean}				
$f_N \pm$ 17.6 MHz		—	0.540	1.0	µs
Temperature coefficient of frequency	TC_f	—	-75	—	ppm/K

Matching network to 200 Ω balanced input - 200 Ω balanced output



Ls1 = 100 nH
Lp1 = 120 nH

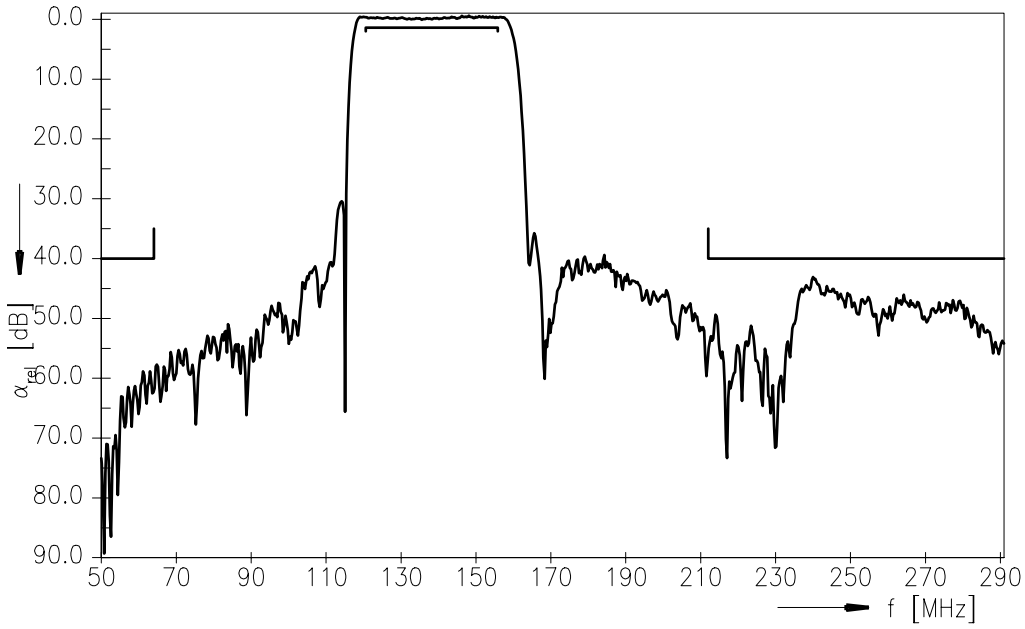
Ls2 = 47 nH
Lp2 = 120 nH

(Element values depend upon PCB properties and layout)

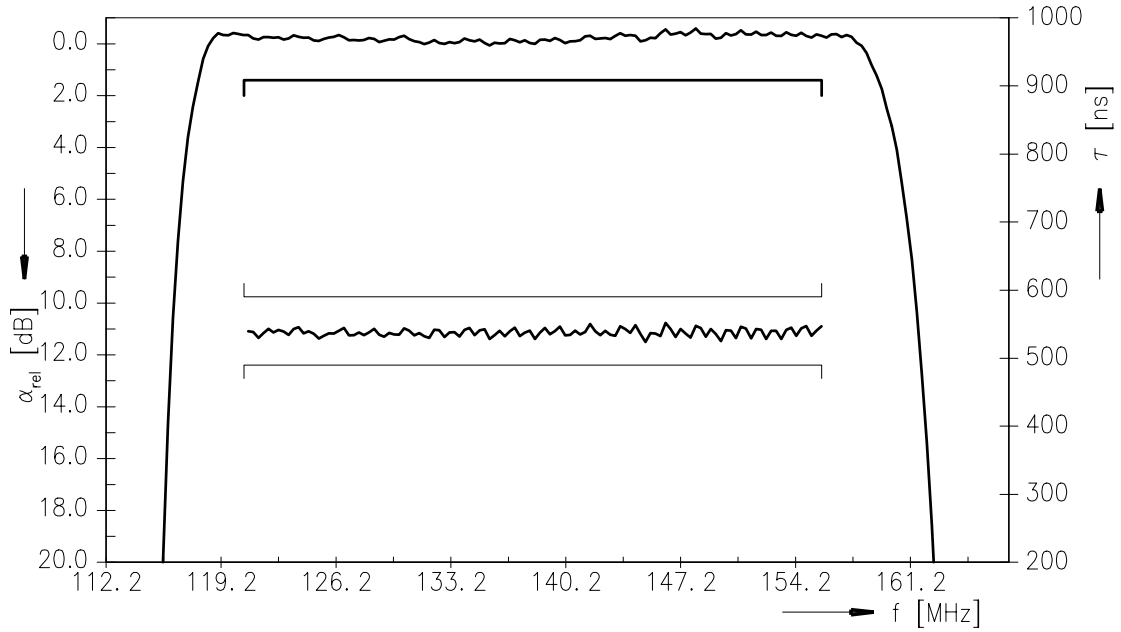
Maximum ratings

Operable temperature range	T	–40/+85	˚C	
Storage temperature range	T_{stg}	–55/+125	˚C	
DC voltage	V_{DC}	0	V	
Input power at 120.6-155.8 MHz	P_{IN}	20	dBm	CW

Transfer function (S21, wideband, normalised)



Transfer function (S21, narrowband, normalised)



References

Type	B5233
Ordering code	B39141B5233H810
Marking and package	C61157-A7-A103
Packaging	F61074-V8170-Z000
Date codes	L_1126
S-parameters	B5233_NB.s2p; B5233_WB.s2p
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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