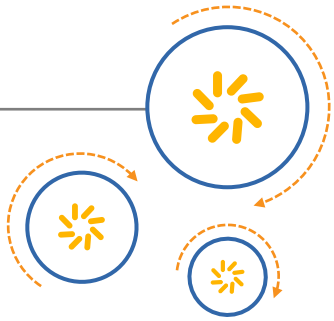
RF360 Europe GmbH

A Qualcomm – TDK Joint Venture



SAW Components

SAW IF filter for base stations

Series/type:	B5087
Ordering code:	B39191B5087H810
Date:	Mar 21, 2016
Version:	2.3

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Series/type:	**B5087**
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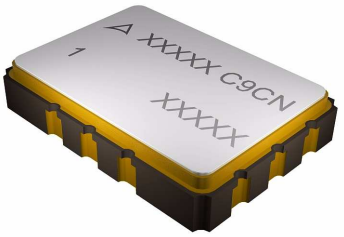
Data sheet SMD

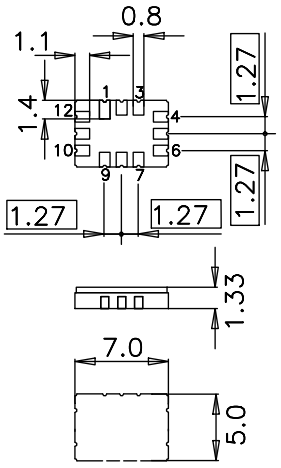
Application

- Low-loss IF filter for WCDMA base station
- Usable passband 60 MHz
- Balanced or unbalanced operation possible



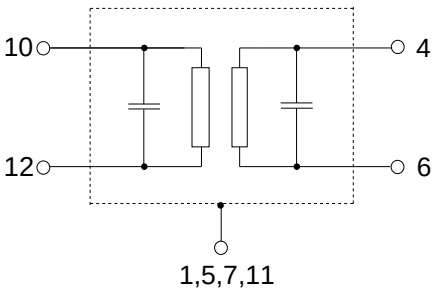
Features

- 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



Pin configuration

■	10	Input
■	12	Input ground or input balance
■	4	Output
■	6	Output ground or output balance
■	2, 3, 8, 9	To be grounded
■	1, 5, 7, 11	Case ground



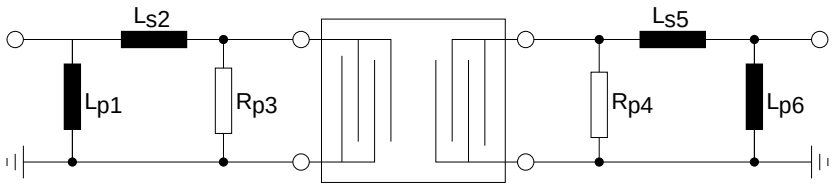
Data sheet SMD

Characteristics

Operating temperature range: T = –30 to 85 ˚C
Terminating source impedance: Z_S = 50 Ω and matching network
Terminating load impedance: Z_L = 50 Ω and matching network

		min.	typ. @ 25 ˚C	max.	
Nominal frequency	f_N	—	192.0	—	MHz
Minimum insertion attenuation (including matching network)	α_{min}	—	15.2	16.0	dB
Passband width					
$\alpha_{rel} \leq$ 1.2 dB	$B_{1.2dB}$	60.0	64.7	—	MHz
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm$ 30 MHz		—	0.6	1.2	dB
Group delay ripple (p-p)	$\Delta\tau$				
$f_N \pm$ 30 MHz		—	30	60	ns
Mean value of absolute group delay	$\bar{\tau}$				
$f_N \pm$ 30 MHz		—	550	—	ns
Relative attenuation (relative to α_{min})	α_{rel}				
10.0 MHz ... 145.5 MHz		40	47	—	dB
238.5 MHz ... 450.0 MHz		40	49	—	dB
450.0 MHz ... 770.0 MHz		35	46	—	dB
770.0 MHz ... 1000.0 MHz		40	66	—	dB
Temperature coefficient of frequency	TC_f	—	–87	—	ppm/K

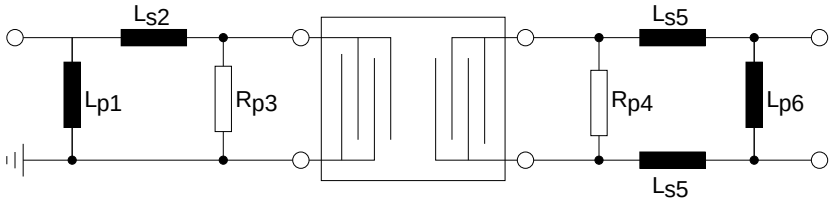
Matching network to 50 Ω (input unbalanced) and 50 Ω (output unbalanced)



L_{p1} = 56 nH
L_{s2} = 47 nH
R_{p3} = 1200 Ohm
R_{p4} = 1800 Ohm
L_{s5} = 39 nH
L_{p6} = 47 nH

Element values depend upon PCB layout.

Alternative matching network to 50 Ω (input unbalanced) and 150 Ω (output balanced)



L_{p1} = 56 nH
L_{s2} = 47 nH
R_{p3} = 1200 Ohm
R_{p4} = 1800 Ohm
L_{s5} = 6.8 nH
L_{p6} = 68 nH

Element values depend upon PCB layout.

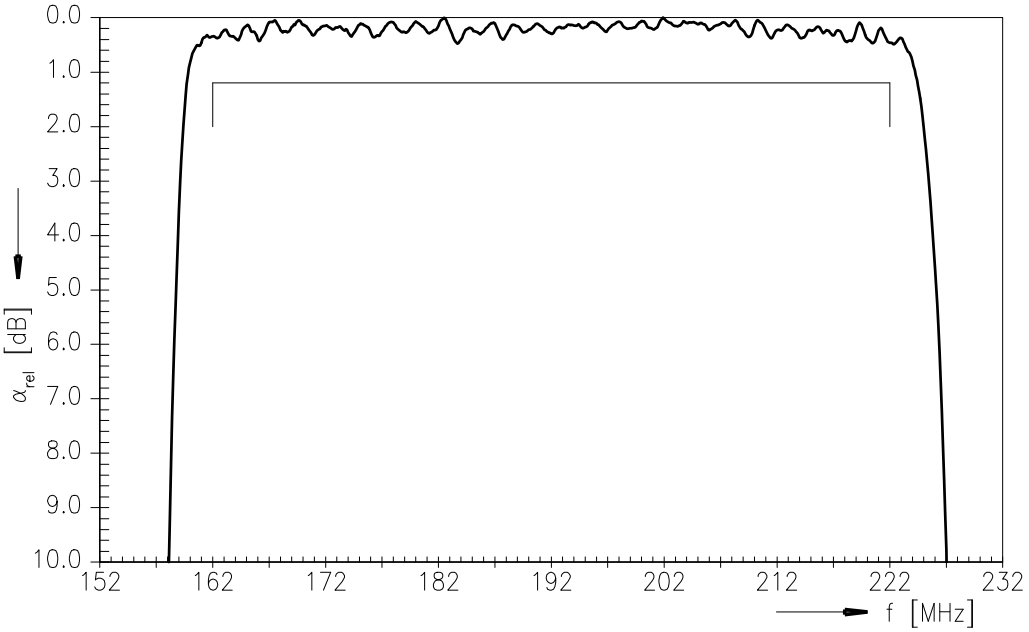
Maximum ratings

Operable temperature range	T	–40/+85	°C	
Storage temperature range	T_{stg}	–40/+85	°C	
DC voltage	V_{DC}	0	V	
ESD voltage	V_{ESD}	200[1)]	V	Machine Model
		350[2)]		Human Body Model
Input power	P_{IN}	10	dBm	

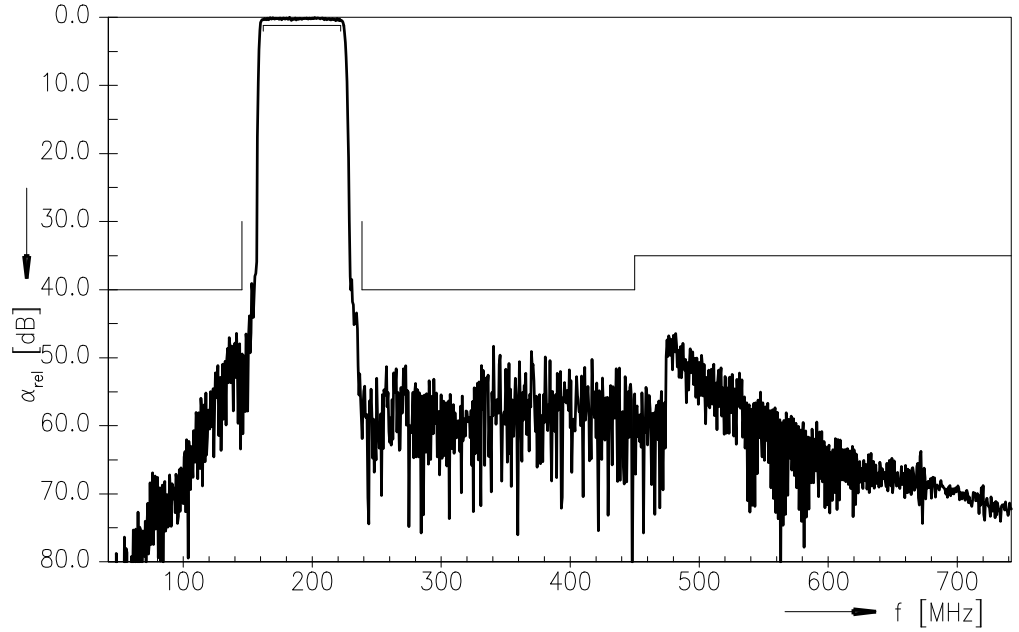
1) acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses

2) acc. to JESD22-A114F (HBM - Human Body Model), 1 negative & 1 positive pulse

Transfer function



Transfer function (wideband)



References

Type	B5087
Ordering code	B39191B5087H810
Marking and package	C61157-A7-A103
Packaging	F61074-V8170-Z000
Date codes	L_1126
S-parameters	
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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