SAW Components

SAW Rx Filter

WCDMA Diversity
Band I Rx

Series/type:	**B9856**
Ordering code:	**B39212B9856P810**
Date:	January 31, 2011
Version:	2.0

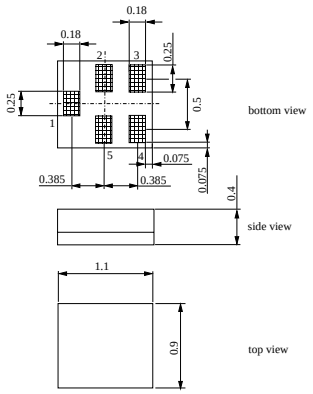
Data sheet

Application

- Low-loss RF filter for mobile telephone WCDMA Band I systems (diversity) receive path (RX)
- Low amplitude ripple
- Usable passband 60 MHz
- Impedance transform from 50 Ω to 100Ω
- Unbalanced to balanced operation

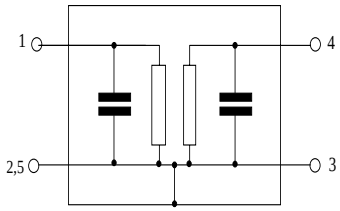
Features

- Package size 1.1 x 0.9 x 0.4 mm³
- RoHS compatible
- Approx. weight 0.003g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- **M**oisture **S**ensitive **L**evel 3



Pin configuration

- 1 Input, unbalanced
- 3,4 Output, balanced
- 2,5 Case-ground



Data sheet SMD

Characteristics

Operating temperature range: T = –30 to +85 °C
Terminating source impedance: Z_S = 50Ω
Terminating load impedance: Z_L = 100 Ω || 22nH (balanced)

		min.	typ. @ 25 °C	max.	
Center frequency	f_C	—	2140.0	—	MHz
Maximum insertion attenuation	α_{max}				
2110.0 ... 2170.0 MHz		—	1.9	2.5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
2110.0 ... 2170.0 MHz		—	0.7	1.3	dB
Input VSWR					
2110.0 ... 2170.0 MHz		—	1.6	2.0	
Output VSWR					
2110.0 ... 2170.0 MHz		—	1.7	2.1	
CMRR ($\lvert S_{21}-S_{31}\rvert$ / $\lvert S_{21}+S_{31}\rvert$)					
2110.0 ... 2170.0 MHz		23	27	—	dB
Output amplitude balance[1] ($\lvert S_{31}/S_{21}\rvert$)					
2110.0 ... 2170.0 MHz		-1.0	-0.5/0.5	1.0	dB
Output phase balance[2] ($\phi(S_{31})-\phi(S_{21})+180°$)					
2110.0 ... 2170.0 MHz		-10	-3.0/3.0	10	°
Attenuation	α				
0.3 ... 1920.0 MHz		40	48	—	dB
810.0 ... 849.0 MHz		50	60	—	dB
898.0 ... 925.0 MHz		50	60	—	dB
1620.0 ... 1710.0 MHz		32	39	—	dB
1710.0 ... 1755.0 MHz		46	50	—	dB
1920.0 ... 1980.0 MHz		46	53	—	dB
1980.0 ... 2050.0 MHz		25	37	—	dB
2400.0 ... 2484.0 MHz		30	36	—	dB
2484.0 ... 3000.0 MHz		32	40	—	dB
3000.0 ... 4600.0 MHz		36	42	—	dB
4600.0 ... 6000.0 MHz		28	33	—	dB

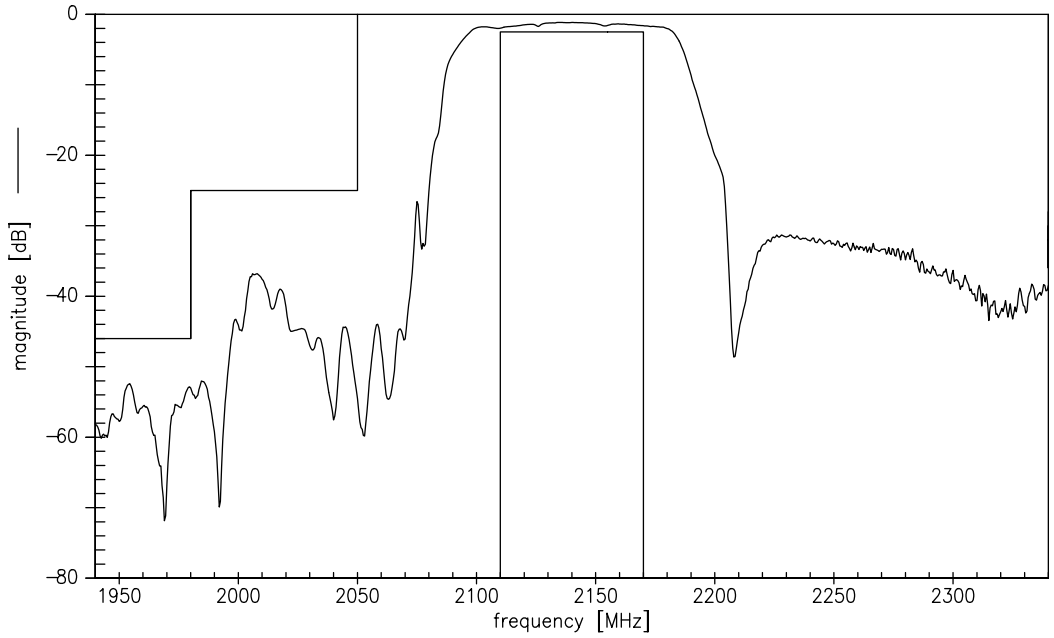
[1] Output amplitude balance specification is not tested. It is meant for reference.
[2] Outout Phase balance specification is not tested. It is meant for reference.

Maximum ratings

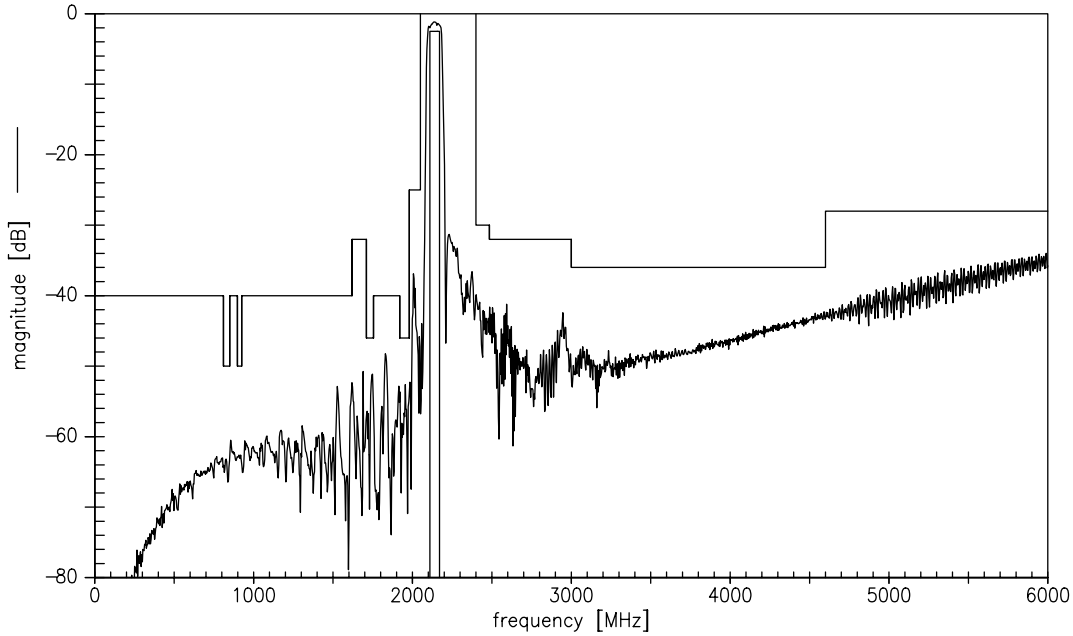
Operable temperature range	T	–40/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	50[1)]	V	machine model, 1 pulse
Input Power at 1920.0 .. .1980.0MHz Tx band	P_{IN}	15	dBm	CW

1) acc. to JESD22-A115A (machine model), 1 negative & 1 positive pulses.

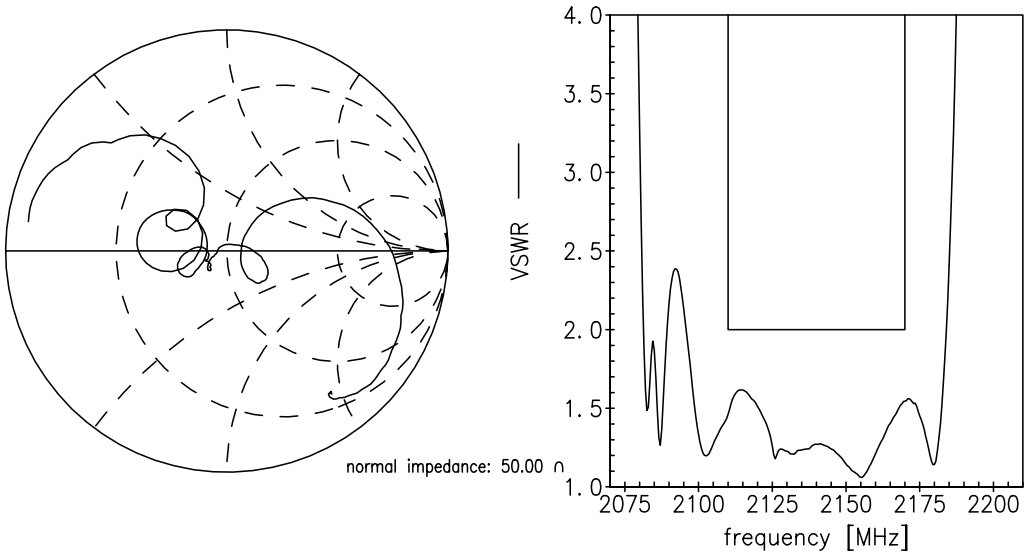
Transfer function (narrow band)



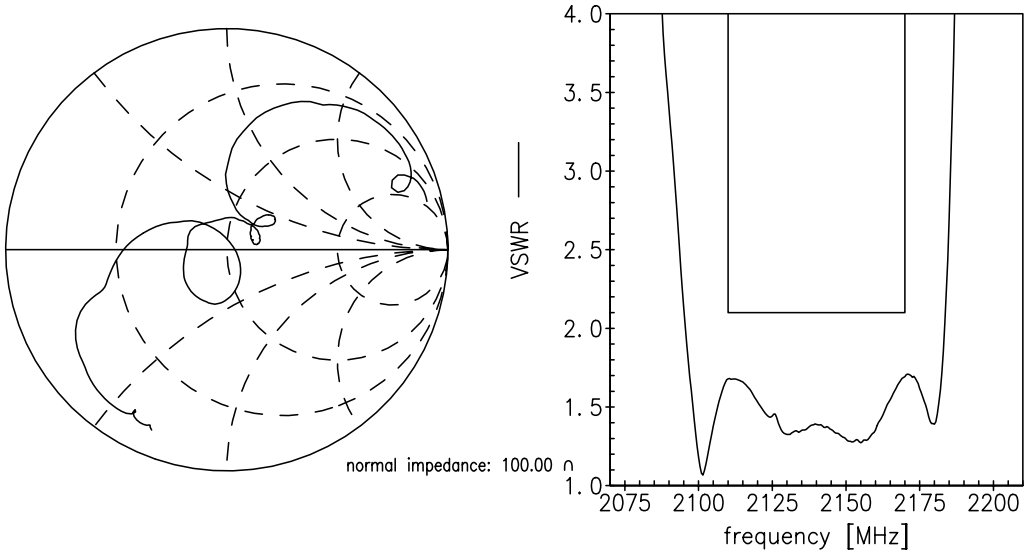
Transfer function (wide band)



S_{11} function



S_{22} function



References

Type	B9856
Ordering code	B39212B9856P810
Marking and package	C61157-A8-A30
Packaging	F61074-V8255-Z000
Date codes	L_1126
S-parameters	B9856_NB.s3p, B9856_WB.s3p See file header for port/pin 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."
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.
Matching coils	See http://www.tdk.co.jp/tefe02/coil.htm#aname1 http://www.tdk.co.jp/etvcl/index.htm for a large variety of matching coils.

For further information please contact your local EPCOS sales office or visit our webpage at www.epcos.com .

Published by EPCOS AG
Surface Acoustic Wave Components Division
P.O. Box 80 17 09, 81617 Munich, GERMANY

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