SAW Components

SAW Tx filter

WCDMA Band II (PCS-Band)

Series/type:	**B9428**
Ordering code:	**B39192B9428K610**
Date:	March 02, 2007
Version:	1.0

Preliminary data

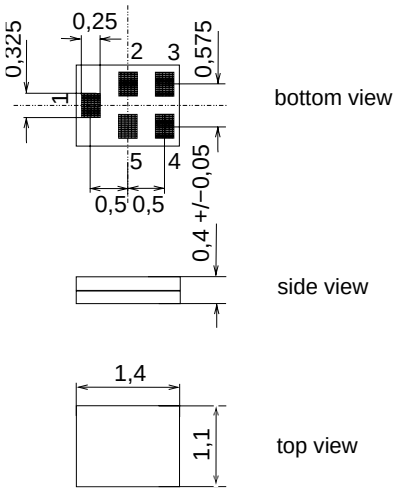
SMD

Application

- Low-loss RF filter for mobile telephone WCDMA system (Band II, PCS band), transmit path (TX)
- Usable passband 60 MHz
- Balanced to unbalanced operation
- Impedance transformation from 200 Ω to 50 Ω
- High RX suppression

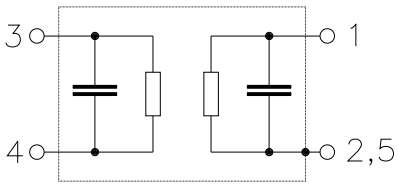
Features

- Package size 1.4 x1.1 x 0.4 mm^3
- Package code QCS5F
- RoHS compatible
- Approximate weight 0.003 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)



Pin configuration

- 3,4 Input balanced
- 1 Output unbalanced
- 2,5 To be grounded



Preliminary data

SMD

Characteristics

Temperature range for specification: T = –20 ˚C to +75 ˚C
Terminating source impedance: Z_S = 200 Ω || 27 nH (balanced)
Terminating load impedance: Z_L = 50 Ω (unbalanced)

		LP05B[1]			
		min.	**typ. @ 25 ˚C**	**max.**	
Center frequency	f_C	—	1880.0	—	MHz
Maximum insertion attenuation	α_{max}				
1850.625 ... 1909.375 MHz		—	2.7	4.2 [2]	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1850.625 ... 1909.375 MHz		—	0.7	2.3 [3]	dB
Input VSWR					
1850.625 ... 1909.375 MHz		—	1.9	2.2	
Output VSWR					
1850.625 ... 1909.375 MHz		—	1.8	2.1	
Input amplitude balance ($\|S_{31}/S_{21}\|$)					
1850.625 ... 1909.375 MHz		–1.4	–0.7/+0.6	1.4	dB
Input phase balance ($\phi(S_{31}) - \phi(S_{21})+180^\circ$)					
1850.625 ... 1909.375 MHz		–10	–5/+0	10	°
Attenuation	α				
0.0 ... 1570.0 MHz		30	52	—	dB
1570.0 ... 1770.0 MHz		30	40	—	dB
1770.0 ... 1830.0 MHz		22	36	—	dB
1930.625 ... 1989.4 MHz		28	30	—	dB
1989.4 ... 2500.0 MHz		28	31	—	dB
2500.0 ... 6000.0 MHz		25	41	—	dB

1) Values in columns min, typ and max indicate the development status of the current version.
2) 4.7 dB max. at –30 ˚C ... 85 ˚C
3) 2.8 dB max. at –30 ˚C ... 85 ˚C

Preliminary data

SMD

Characteristics

Operating temperature range: T = –20 ˚C to +75 ˚C
Terminating source impedance: Z_S = 200 Ω || 27 nH (balanced)
Terminating load impedance: Z_L = 50 Ω (unbalanced)

		LP05B[1]			
		min.	**typ. @ 25 ˚C**	**max.**	
Center frequency	f_C	—	1880.0	—	MHz
Maximum insertion attenuation	α_{max}				
1850.0 ... 1910.0 MHz		—	2.8	4.6 [2]	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1850.0 ... 1910.0 MHz		—	0.8	2.7 [3]	dB
Input VSWR					
1850.0 ... 1910.0 MHz		—	1.9	2.2	
Output VSWR					
1850.0 ... 1910.0 MHz		—	1.8	2.1	
Input amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
1850.0 ... 1910.0 MHz		–1.4	–0.7/0.6	1.4	dB
Input phase balance ($\phi(S_{31}) - \phi(S_{21})+180^\circ$)					
1850.0 ... 1910.0 MHz		–10	–5/+0	10	°
Attenuation	α				
0.0 ... 1570.0 MHz		30	52	—	dB
1570.0 ... 1770.0 MHz		30	39	—	dB
1770.0 ... 1830.0 MHz		22	36	—	dB
1930.0 ... 1990.0 MHz		27	30	—	dB
1990.0 ... 2500.0 MHz		28	32	—	dB
2500.0 ... 6000.0 MHz		25	41	—	dB

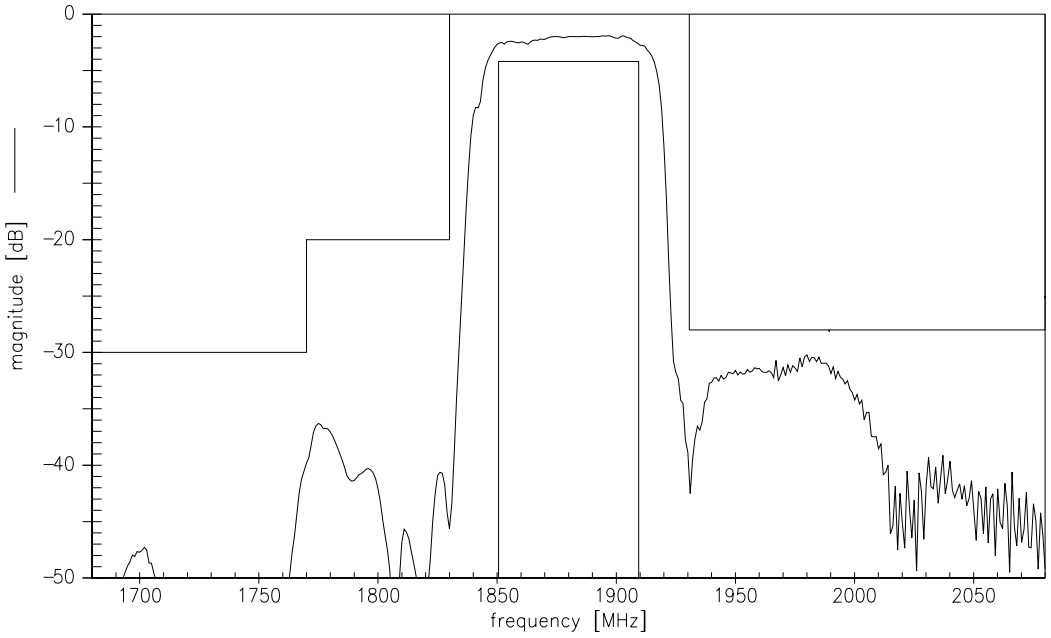
1) Values in columns min, typ and max indicate the development status of the current version.
2) 5.2 dB max. at –30 ˚C ... 85 ˚C
3) 3.3 dB max. at –30 ˚C ... 85 ˚C

Maximum ratings

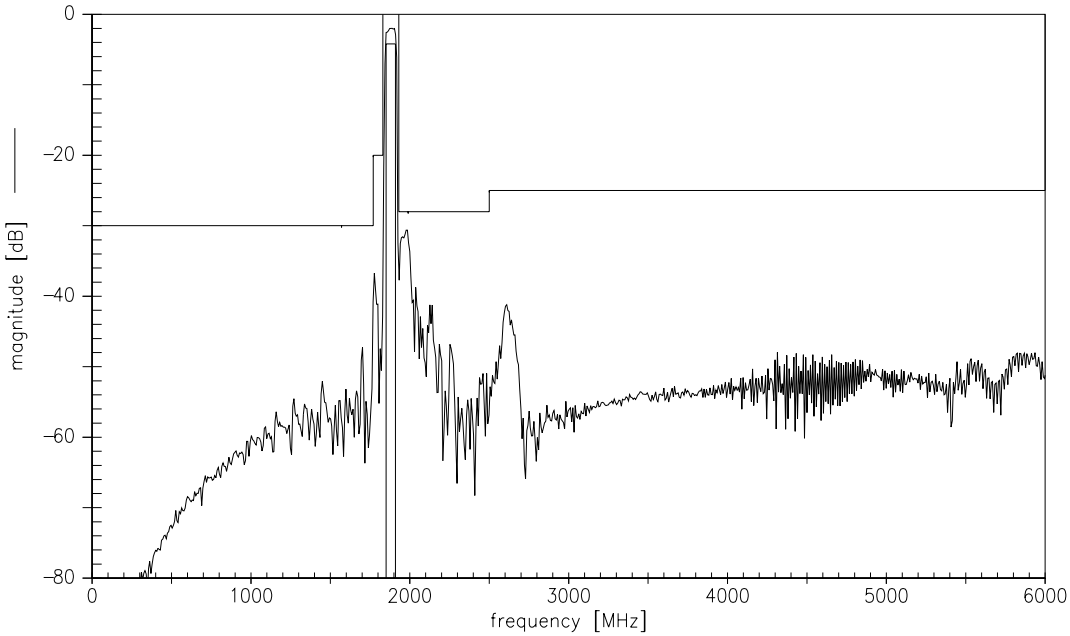
Operable temperature range	T	–30/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	50[1)]	V	machine model, 10 pulses
Input power	P_{IN}	12	dBm	@ 55 ˚C ambient

1) acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.

Transfer function

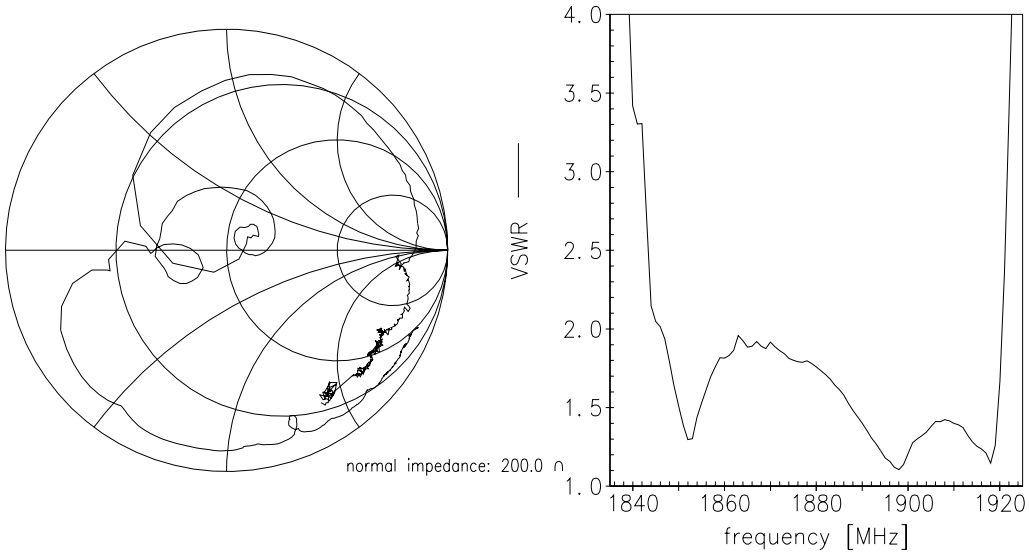


Transfer function (wideband)

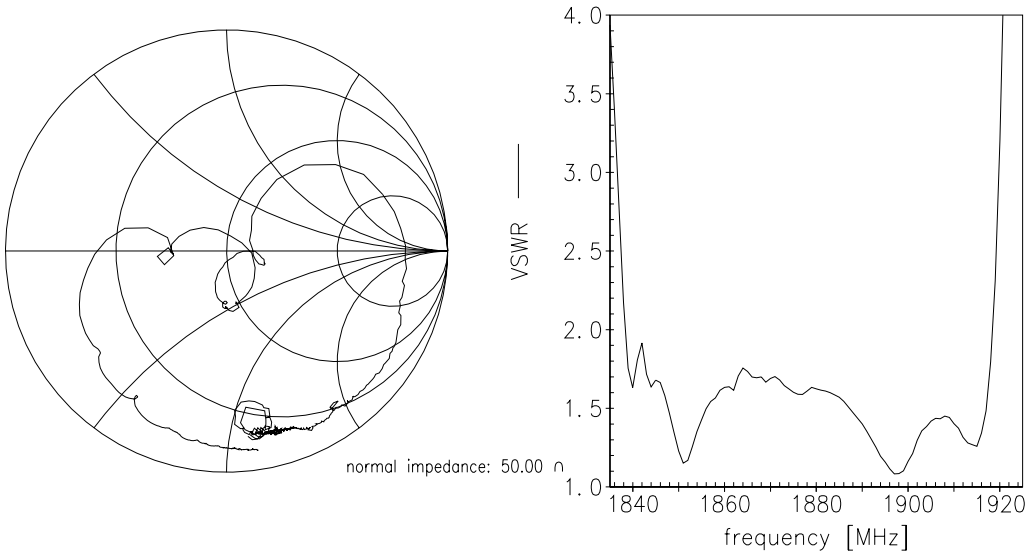


Smith charts

S_{11} function



S_{22} function



References

Type	B9428
Ordering code	
Marking and package	C61157-A8-A1
Packaging	F61074-V8212-Z000
Date codes	L_1126
S-parameters	B9428_NB.s3p B9428_WB.s3p
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.

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