SAW Components

SAW Tx Filter

WCDMA Band I

Series/Type:	**B9409**
Ordering code:	**B39202B9409K610**
Date:	December 09, 2005
Version:	2.0

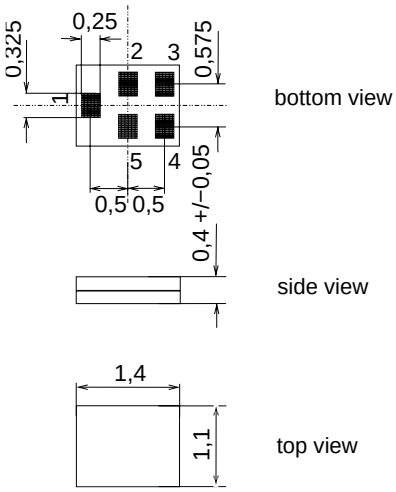
EPCOS

Application

- Low-loss RF filter for mobile telephone WCDMA systems, transmit path (TX)
- Impedance transform from 200 Ω to 50 Ω
- Balanced to unbalanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 60 MHz

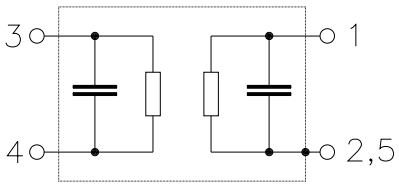
Features

- Package size 1.4 x1.1 x 0.4 mm³
- Package code QCS5F
- RoHS compliant
- Approx. weight 0.003 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals



Pin configuration

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



Data Sheet SMD

Characteristics

Operating temperature range: T = –10 ˚C to +85 ˚C
Terminating source impedance: Z_S = 200 Ω || 47 nH (balanced)
Terminating load impedance: Z_L = 50 Ω (unbalanced)

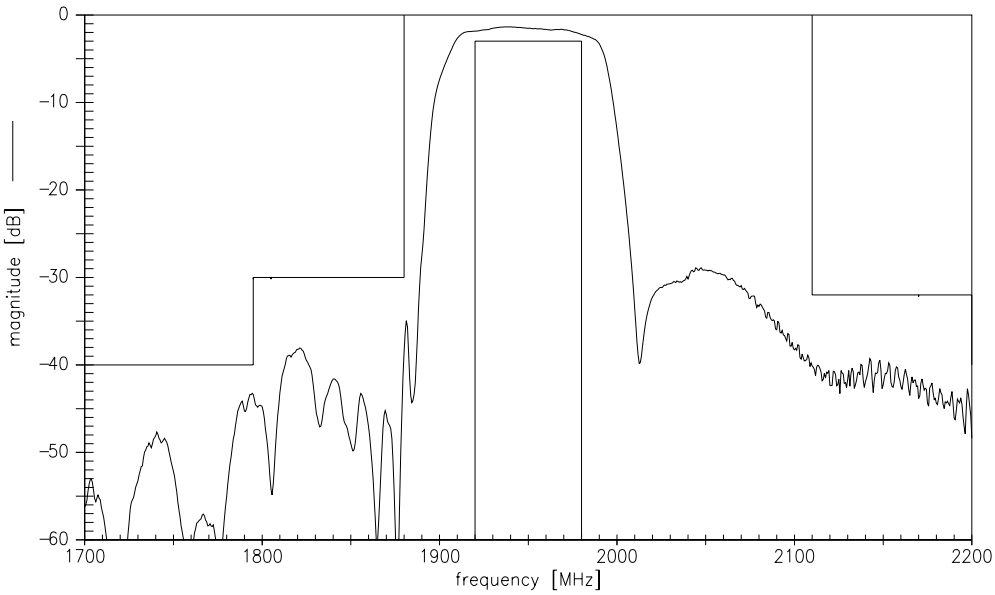
		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	1950.0	—	MHz
Maximum insertion attenuation	α_{max}				
1920.0 ... 1980.0 MHz		—	2.5	3.2	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1920.0 ... 1980.0 MHz		—	1.2	1.6	dB
Amplitude ripple per 5 MHz channel	$\Delta\alpha$				
1920.0 ... 1980.0 MHz		—	0.4	0.5	dB
Input VSWR					
1920.0 ... 1980.0 MHz		—	1.7	2.0	
Output VSWR					
1920.0 ... 1980.0 MHz		—	1.6	2.0	
Input amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
1920.0 ... 1980.0 MHz		–1.5	–0.5/0.5	1.5	dB
Input phase balance ($\phi(S_{31}) - \phi(S_{21})+180^\circ$)					
1920.0 ... 1980.0 MHz		–10	–3/3	10	°
Attenuation	α				
50.0 ... 1000.0 MHz		45	55	—	dB
1000.0 ... 1795.0 MHz		40	43	—	dB
1795.0 ... 1805.0 MHz		30	40	—	dB
1805.0 ... 1880.0 MHz		30	34	—	dB
2110.0 ... 2170.0 MHz		32	36	—	dB
2170.0 ... 2800.0 MHz		32	36	—	dB
2800.0 ... 6000.0 MHz		40	48	—	dB

Maximum ratings

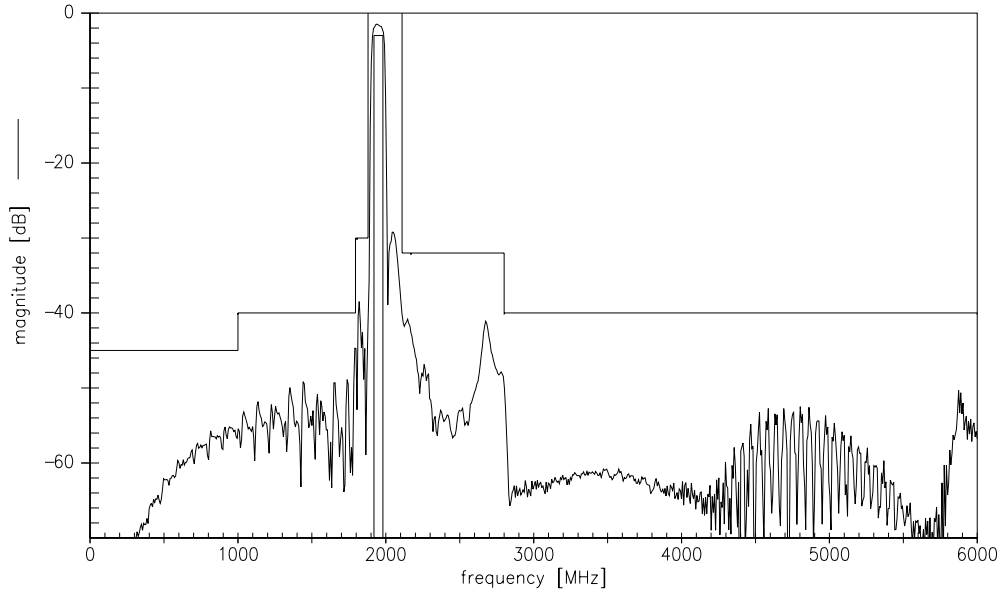
Operable temperature range	T	–30/+85	°C	
Storage temperature range	T_{stg}	–40/+85	°C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	50[1)]	V	machine model, 10 pulses
Source Power	P_S	5	dBm	cw signal

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

Transfer function

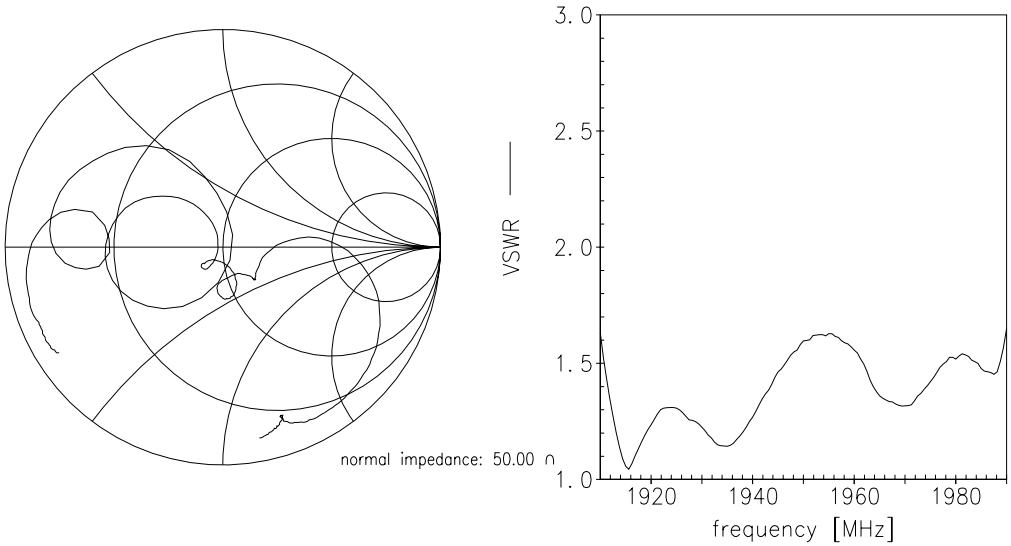


Transfer function (wideband)

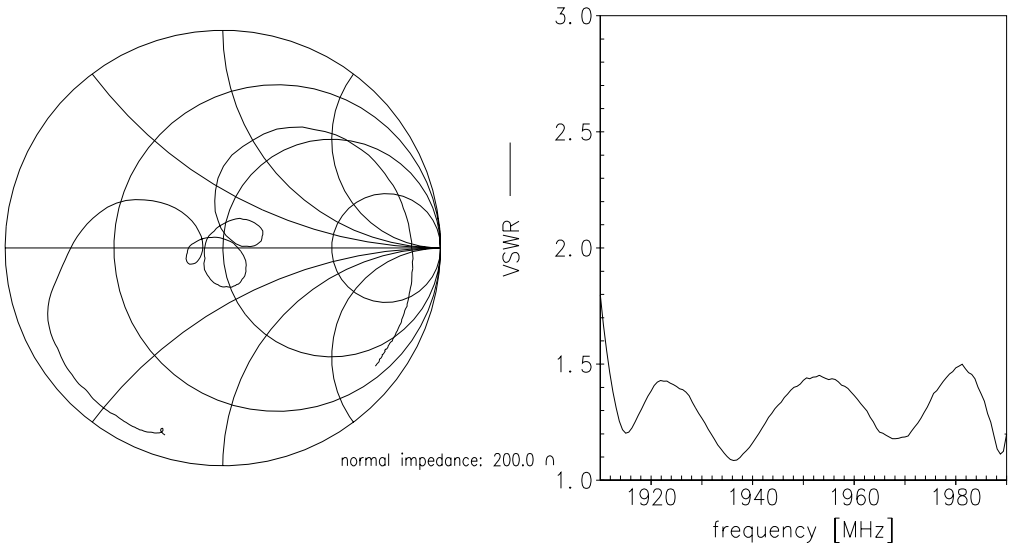


Smith chart

S_{11} function



S_{22} function



Type	B9409	
Ordering code	B39202B9409K610	
Marking and Package		
Packaging		
Date Codes	L_1126	
S-Parameters	B9409_NB.s3p B9409_WB.s3p	
Soldering profile	S_6001	

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

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