SAW Components

SAW Rx Filter

WCDMA Band I

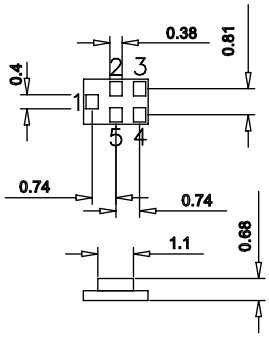
Series/Type:	**B7849**
Ordering code:	**B39212B7849K410**
Date:	May 19, 2006
Version:	2.0

Application

- Low-loss RF filter for mobile telephone WCDMA systems, receive path (RX)
- Impedance transform from 50 Ω to 200 Ω
- Unbalanced to balanced operation
- Very low insertion attenuation
- Very high Tx-suppression
- Passband with very low error vector magnitude (EVM)
- Low amplitude ripple
- Very low ripple over any 3.84 MHz as well as 5.0 MHz within the passpand
- Usable passband 60 MHz

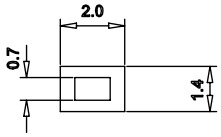
Features

- Package size 2.0 x1.4 x 0.68 mm^3
- Package code QCS5E
- RoHS compliant
- Approx. weight 0.007 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)



bottom view

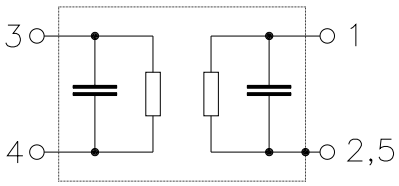
side view



top view

Pin configuration

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



Data Sheet SMD

Characteristics

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

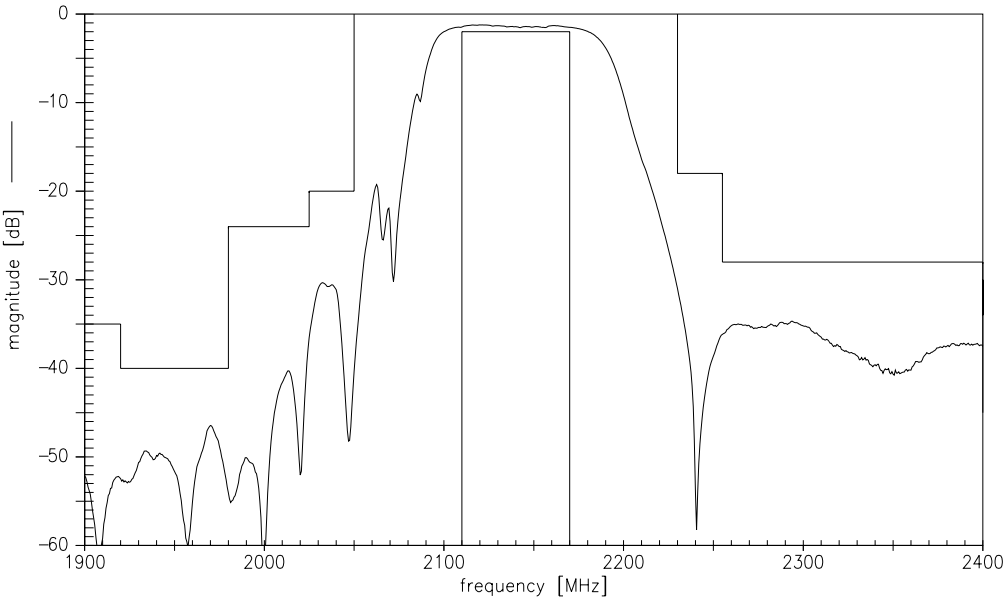
		B7849			
		min.	**typ. @ 25 ˚C**	**max.**	
Center frequency	f_C	—	2140.0	—	MHz
Maximum insertion attenuation	α_{max}				
2110.0 ... 2170.0 MHz		—	1.6	2.1	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
2110.0 ... 2170.0 MHz		—	0.4	1.0	dB
Input VSWR					
2110.0 ... 2170.0 MHz		—	1.6	2.1	
Output VSWR					
2110.0 ... 2170.0 MHz		—	1.5	2.1	
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
2110.0 ... 2170.0 MHz		–1.0	–0.7/0.7	1.0	dB
Output phase balance ($\phi(S_{31}) - \phi(S_{21})+180^\circ$)					
2110.0 ... 2170.0 MHz		–10	–3/3	10	°
Attenuation	α				
0.0 ... 1920.0 MHz		35	44	—	dB
1920.0 ... 1980.0 MHz		40	46	—	dB
1980.0 ... 2025.0 MHz		24	40	—	dB
2025.0 ... 2050.0 MHz		20	30	—	dB
2230.0 ... 2255.0 MHz		18	32	—	dB
2255.0 ... 2402.0 MHz		28	35	—	dB
2402.0 ... 2480.0 MHz		34	37	—	dB
2480.0 ... 4030.0 MHz		30	38	—	dB
4030.0 ... 4150.0 MHz		45	54	—	dB
4150.0 ... 4220.0 MHz		45	54	—	dB
4220.0 ... 4340.0 MHz		45	55	—	dB
4340.0 ... 6000.0 MHz		45	55	—	dB

Maximum ratings

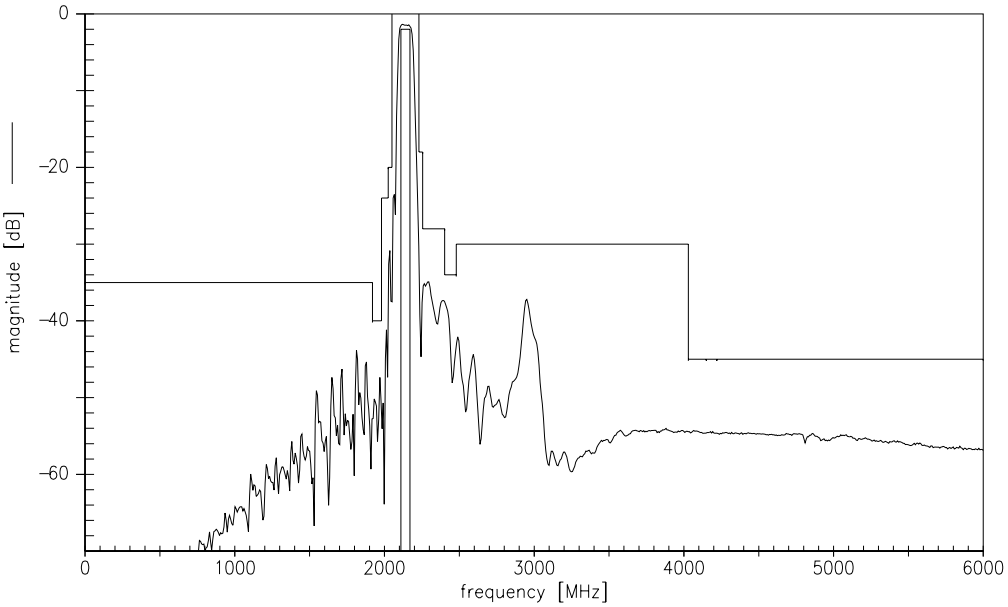
Operable temperature range	T	–30/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	50[1)]	V	machine model, 10 pulses
Source Power	P_S	5	dBm	cw signal

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

Transfer function

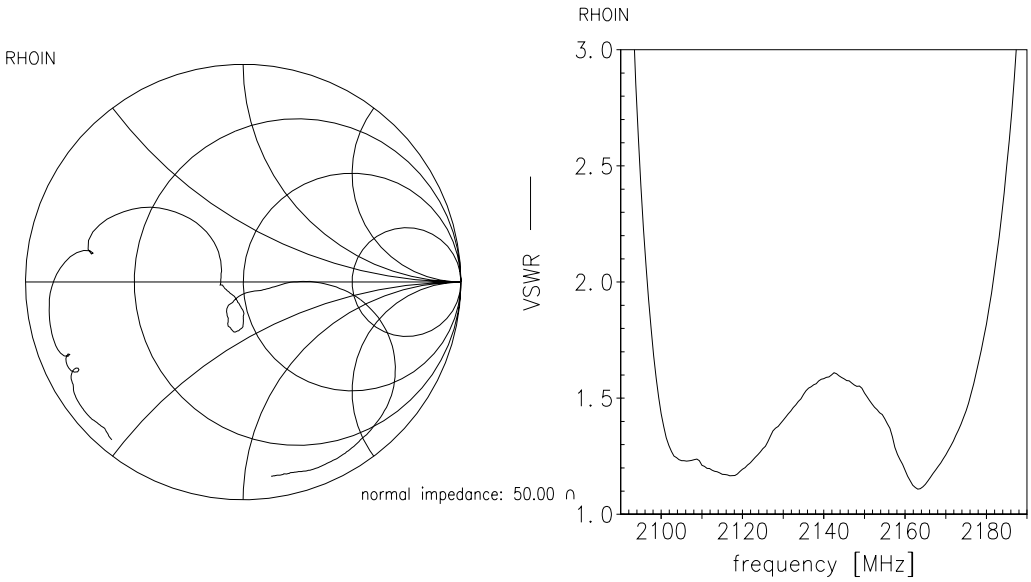


Transfer function (wideband)

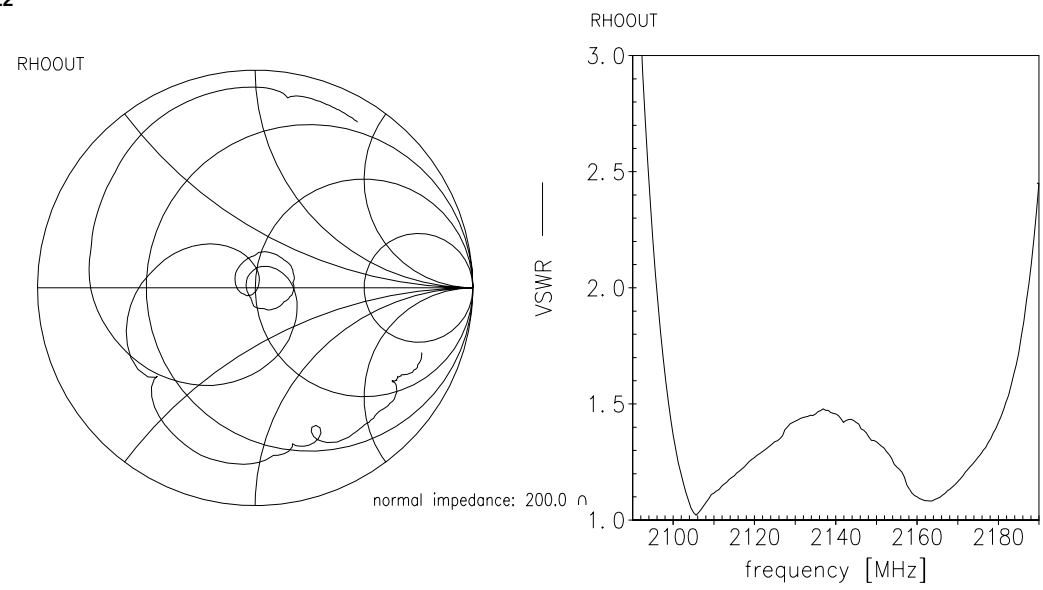


Smith chart

S_{11} function



S_{22} function



Type	B7849
Ordering code	B39212B7849K410
Marking and Package	C61157-A7-A131
Packaging	F61074-V8151-Z000
Date Codes	L_1126
S-Parameters	B7849_NB.s3p B7849_WB.s3p
Soldering profile	S_6001
RoHS compliant	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."

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

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