SAW Components

SAW RF Filter

TD-SCDMA

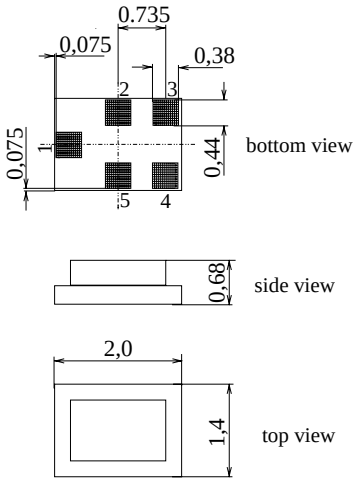
Series/type:	**B7904**
Ordering code:	**B39192B7904C710**
Date:	March 10, 2009
Version:	2.0

Application

- Low-loss RF filter module for TD-SCDMA mobile telephone systems
- Usable passband 40 MHz
- Low amplitude ripple
- High selectivity up to 6 GHz

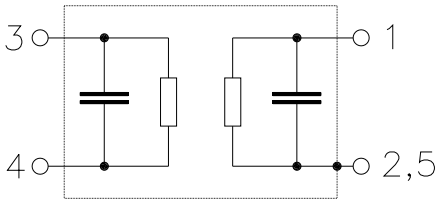
Features

- Package size 1.4 x 2.0 x 0.68 mm^3
- Package code QCS5C
- RoHS compatible
- Approximate weight 0.007g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)



Pin configuration

■	1	Input, unbalanced
■	4	Output, unbalanced
■	2,5	Case ground
■	3	to be grounded



Characteristics

Temperature range for specification: T = –30 ˚C to +85 ˚C
Terminating source impedance: Z_S = 50 Ω (unbalanced)
Terminating load impedance: Z_L = 50 Ω (unbalanced)

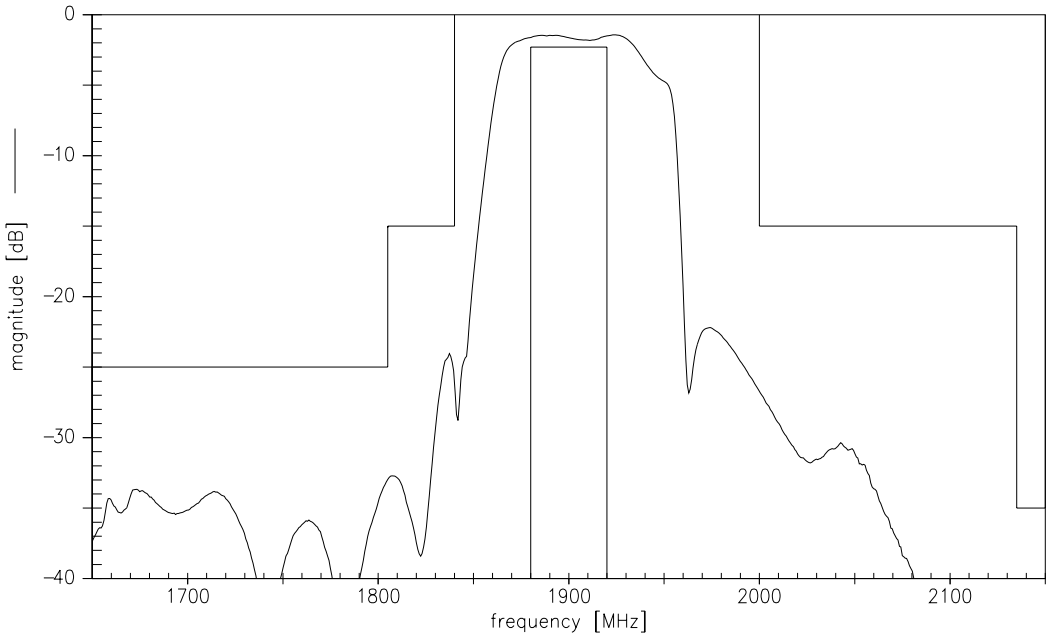
		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	1900.0	—	MHz
Maximum insertion attenuation	α_{max}				
1880.0 ... 1920.0 MHz		—	1.9	2.3	dB
Amplitude ripple (p-p)					
1880.0 ... 1920.0 MHz	$\Delta\alpha$	—	0.6	1.0	dB
Input VSWR					
1880.0 ... 1920.0 MHz		—	1.9	2.3	
Output VSWR					
1880.0 ... 1920.0 MHz		—	1.9	2.3	
Attenuation	α				
0.3 ... 1395.0 MHz		25	33	—	dB
1395.0 ... 1435.0 MHz		30	33	—	dB
1435.0 ... 1805.0 MHz		25	33	—	dB
1805.0 ... 1840.0 MHz		15	25	—	dB
2000.0 ... 2135.0 MHz		15	25	—	dB
2135.0 ... 2175.0 MHz		35	40	—	dB
2175.0 ... 3500.0 MHz		25	30	—	dB
3500.0 ... 6000.0 MHz		20	30	—	dB

Maximum ratings

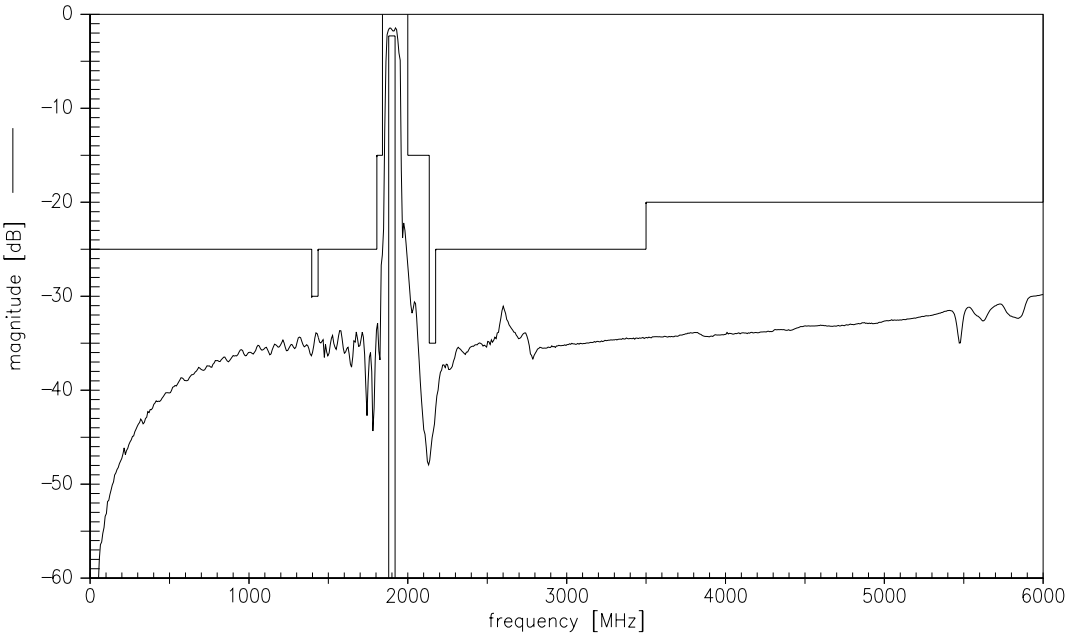
Operable temperature range	T	–30/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	3	V	
ESD voltage	V_{ESD}	50[1)]	V	Machine model, 10 pulses
Input power	P_{IN}	10	dBm	CW signal

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

Transfer function

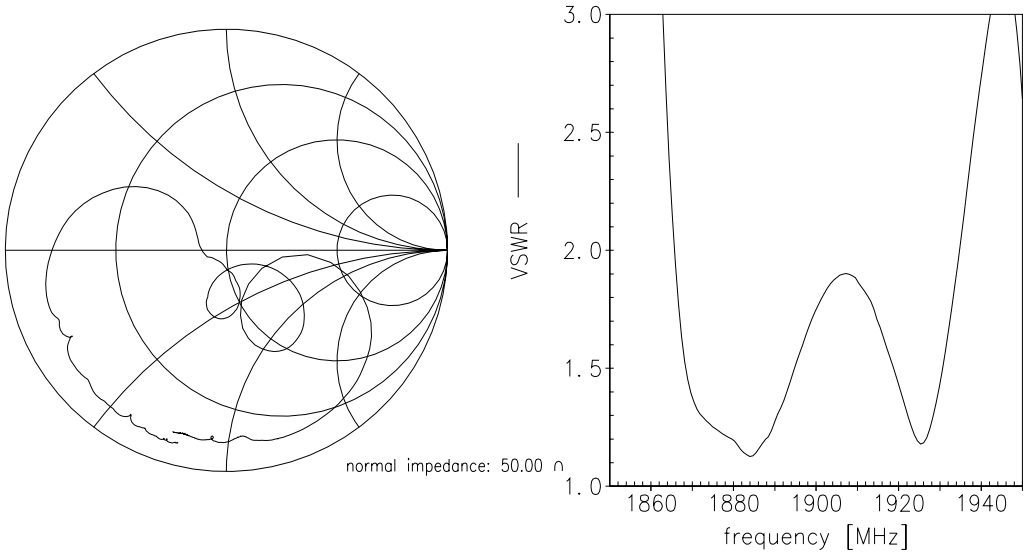


Transfer function (wideband)

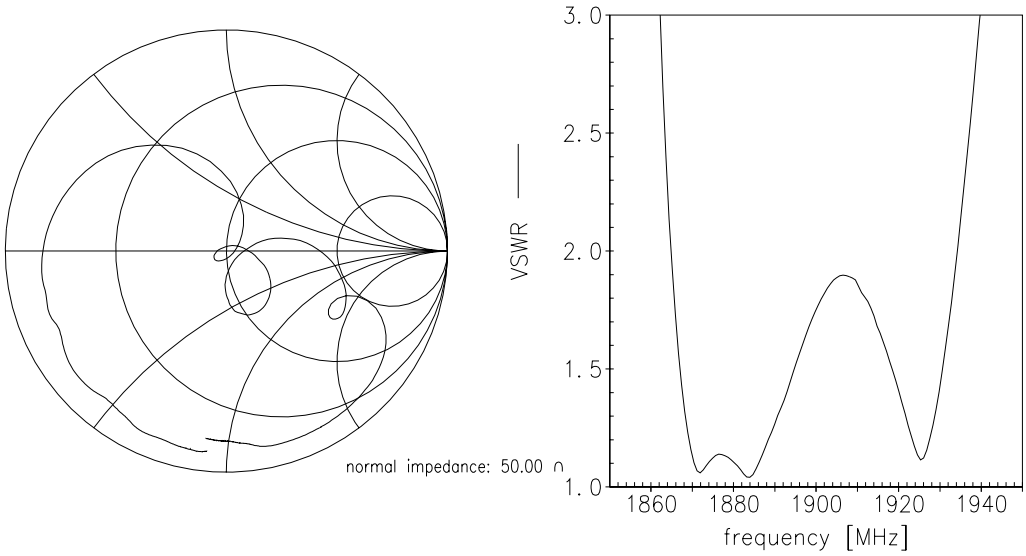


Smith charts

S_{11} function



S_{22} function



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Terminating source impedance: Z_S = 50 Ω || 10 nH (unbalanced)
Terminating load impedance: Z_L = 50 Ω (unbalanced)

		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	1900.0	—	MHz
Maximum insertion attenuation	α_{max}				
1880.0 ... 1920.0 MHz		—	1.8	2.3	dB
Amplitude ripple (p-p)					
1880.0 ... 1920.0 MHz	$\Delta\alpha$	—	0.5	1.0	dB
Input VSWR					
1880.0 ... 1920.0 MHz		—	1.4	2.0	
Output VSWR					
1880.0 ... 1920.0 MHz		—	1.4	2.0	
Attenuation	α				
0.3 ... 1395.0 MHz		25	32	—	dB
1395.0 ... 1435.0 MHz		30	32	—	dB
1435.0 ... 1805.0 MHz		25	32	—	dB
1805.0 ... 1840.0 MHz		15	25	—	dB
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3500.0 ... 6000.0 MHz		20	34	—	dB

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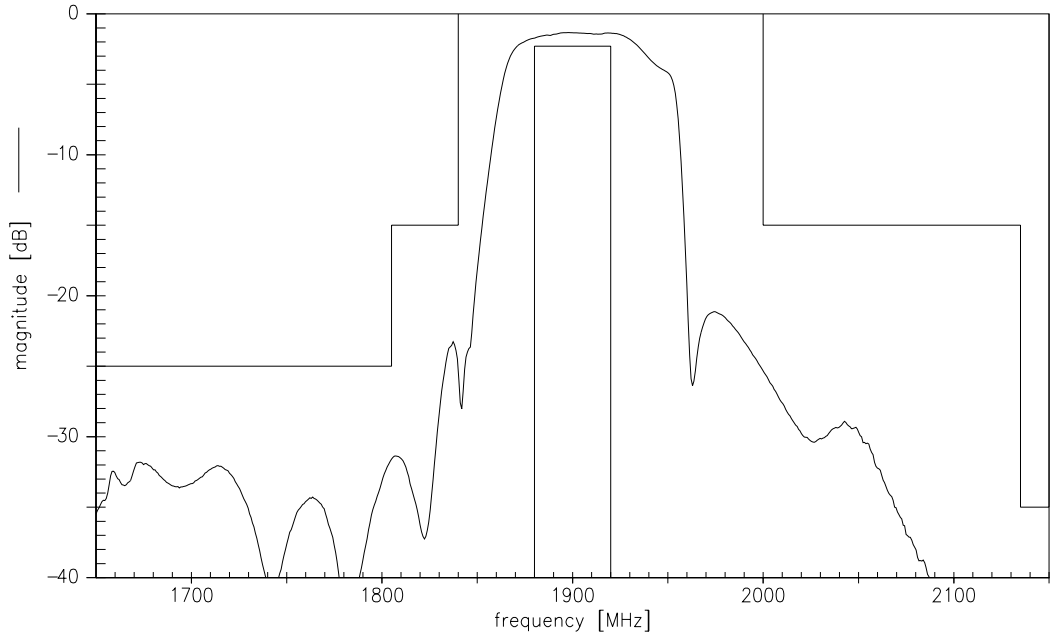
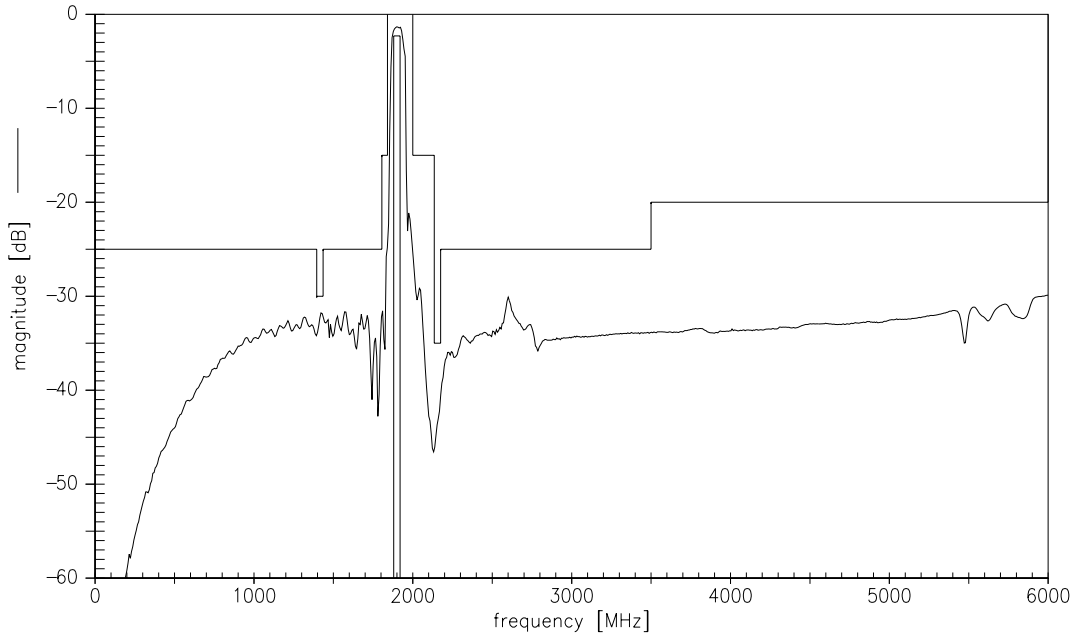
ESD voltage	V_{ESD}	50[1)]	V	Machine model, 10 pulses
Input power	P_{IN}	10	dBm	CW signal

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

Transfer function (matched)

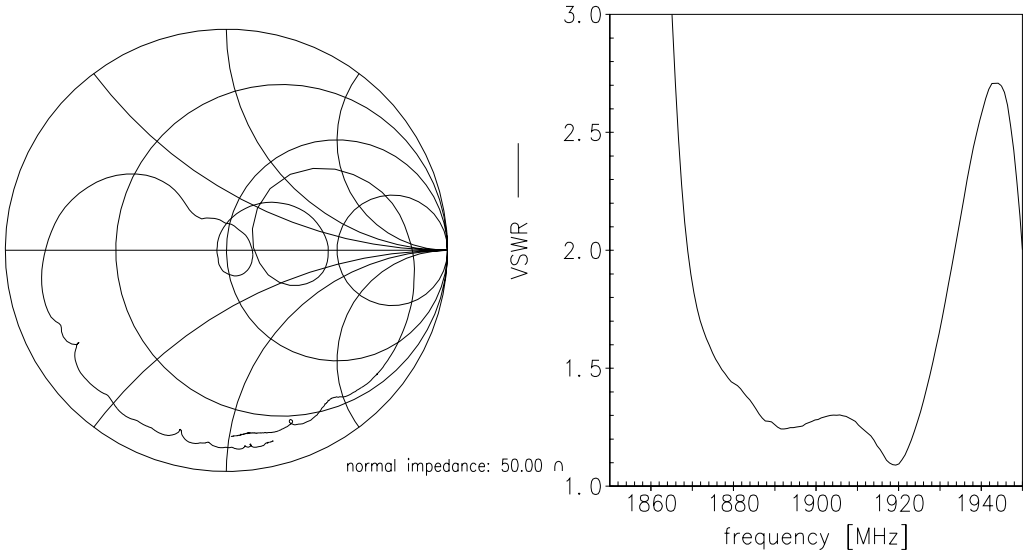


Transfer function (wideband)

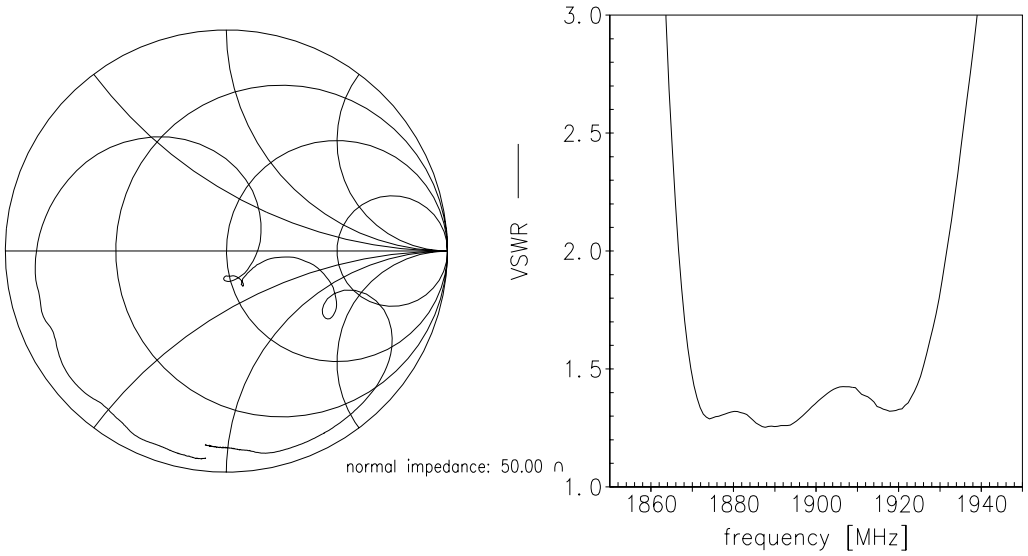


Smith charts

S_{11} function



S_{22} function



References

Type	B7904
Ordering code	B39192B7904C710
Marking and package	C61157-A7-A111
Packaging	F61074-V8151-Z000
Date codes	L_1126
S-parameters	B7904_NB_UN.s2p B7904_WB_UN.s2p 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."

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