SAW Components

SAW filter

TD-SCDMA

Series/type:	**B7853**
Ordering code:	**B39202B7853C710**
Date:	September 28, 2006
Version:	2.2

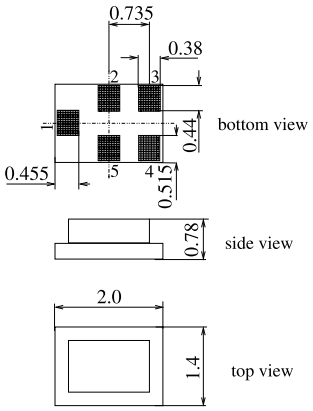
Data sheet SMD

Application

- Low-loss RF filter for mobile telephone TD-SCDMA systems
- Unbalanced to unbalanced operation
- Low amplitude ripple
- No matching network required for operation at 50 Ω
- Usable passband 15 MHz

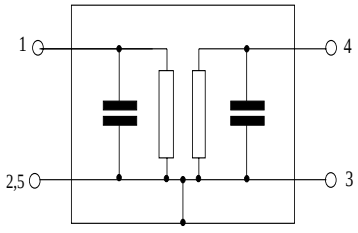
Features

- Package size 2.0 x1.4 x 0.78 mm³
- Package code QCS5C
- RoHS compatible
- Approx. weight 0.007 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals



Pin configuration

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



Data sheet SMD

Characteristics

Operating temperature range: T = –35 ˚C to +85 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	2017.5	—	MHz
Maximum insertion attenuation	α_{max}				
2010.0 ... 2025.0 MHz		—	1.9	2.6 [1]	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
2010.0 ... 2025.0 MHz		—	0.2	0.9 [2]	dB
Input VSWR					
2010.0 ... 2025.0 MHz		—	1.8	2.1	
Output VSWR					
2010.0 ... 2025.0 MHz		—	1.9	2.2	
Group delay ripple (p-p)					
2010.0 ... 2025.0 MHz		—	3	10	ns
Attenuation	α				
0.0 ... 1840.0 MHz		43	48	—	dB
1840.0 ... 1950.0 MHz		35	44	—	dB
1950.0 ... 1980.0 MHz		14 [3]	19	—	dB
1980.0 ... 1990.0 MHz		4.5 [4]	12	—	dB
2045.0 ... 2050.0 MHz		7 [5]	16	—	dB
2050.0 ... 2085.0 MHz		17	25	—	dB
2085.0 ... 2120.0 MHz		26	30	—	dB
2120.0 ... 2160.0 MHz		33	37	—	dB
2160.0 ... 4000.0 MHz		38	42	—	dB
4000.0 ... 6000.0 MHz		25	33	—	dB

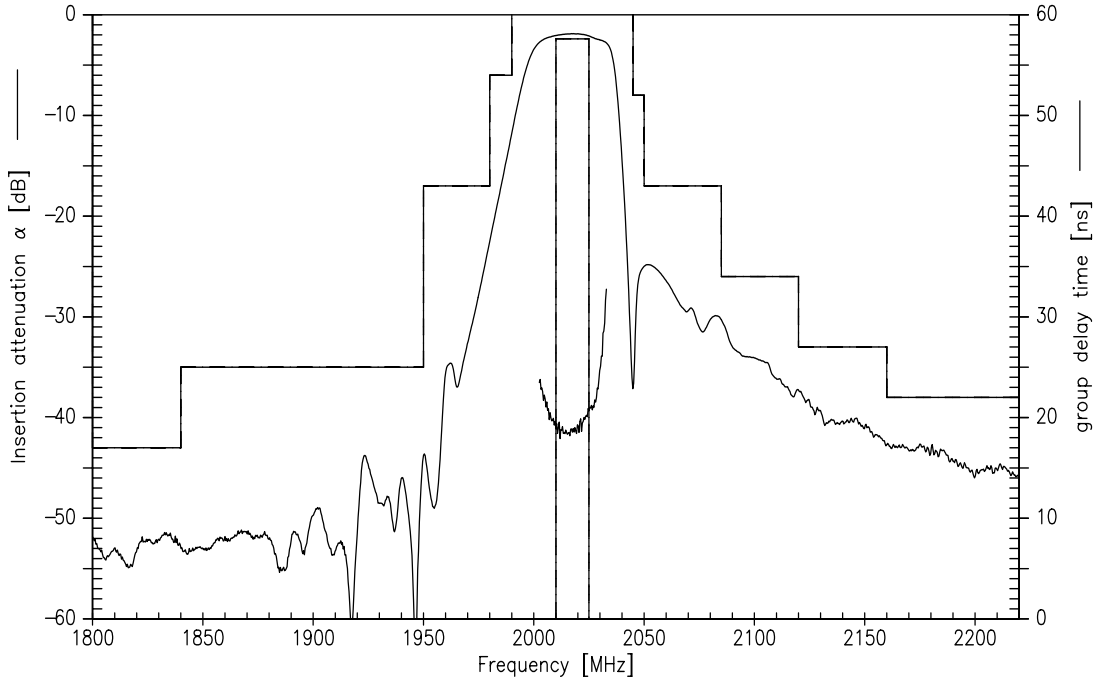
[1] 2.3 dB at 25 ˚C
[2] 0.6 dB at 25 ˚C
[3] 17 dB attenuation at 25 ˚C
[4] 6 dB attenuation at 25 ˚C
[5] 8 dB attenuation at -25 ˚C ... +85 ˚C

Maximum ratings

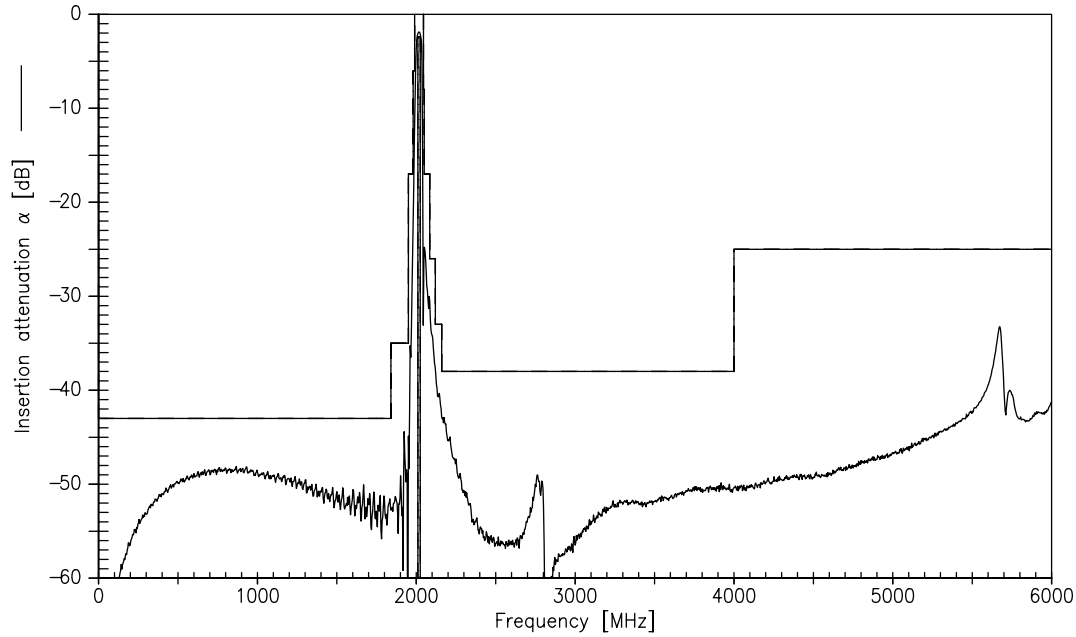
Operable temperature range	T	–40/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	50[1)]	V	machine model, 10 pulses
Input power at				
2010.0... 2025.0 MHz	P_{IN}	7	dBm	continuous wave, 2000 hours, 85 ˚C

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

Transfer function

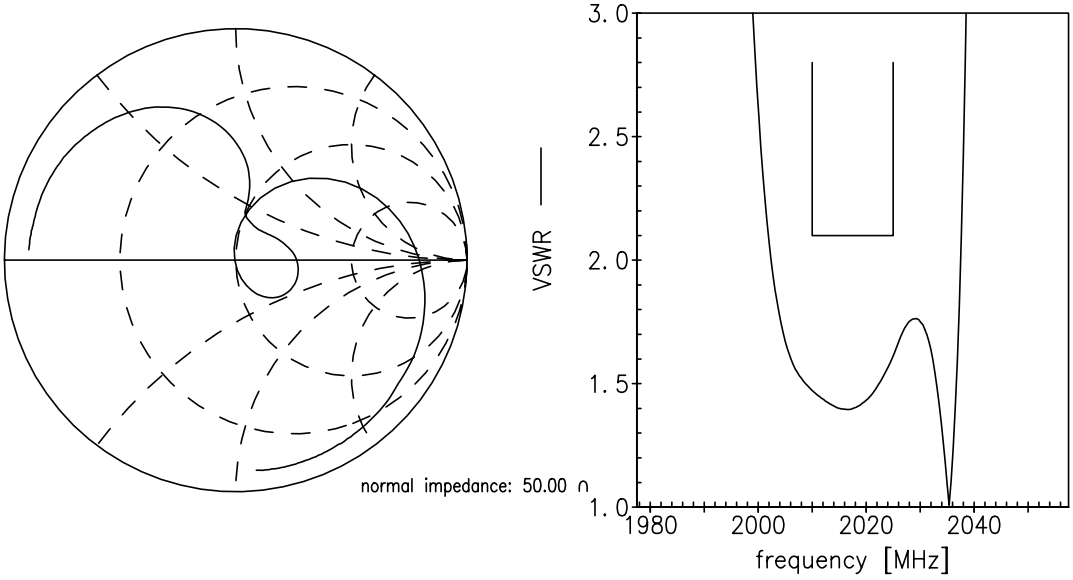


Transfer function (wideband)

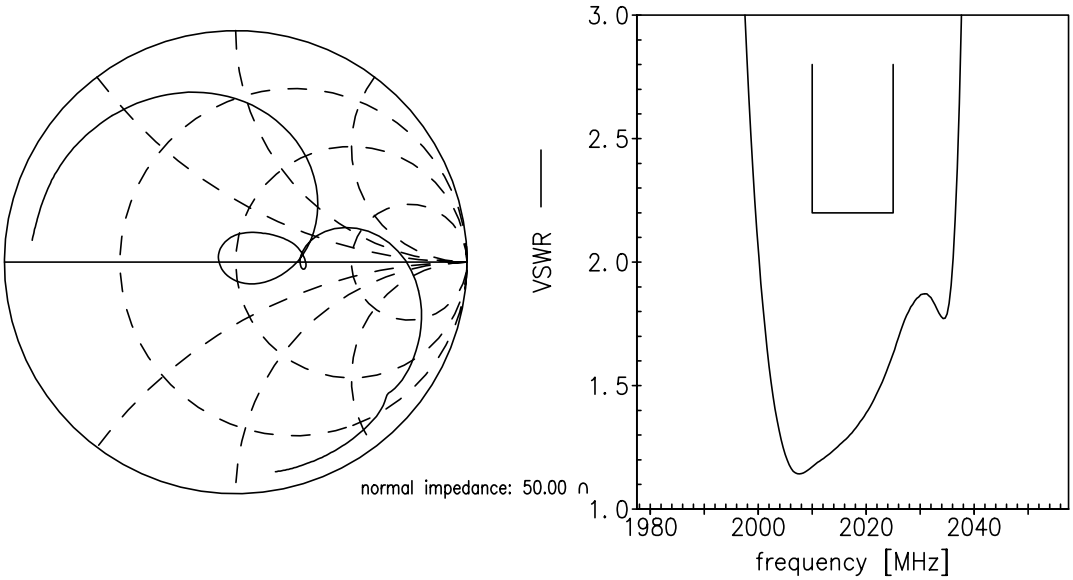


Smith charts

S_{11} function



S_{22} function



References

Type	B7853
Ordering code	B39202B7853C710
Marking and package	C61157-A7-A111
Packaging	F61074-V8151-Z000
Date codes	L_1126
S-parameters	B7853_NB.s2p B7853_WB.s2p
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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