SAW Components

SAW Tx 2in1 Filter

CDMA Cellular / CDMA PCS

Series/type:	**Preliminary Data**
Ordering code:	**B39192B9314N410**
Date:	January 09, 2007
Version:	1.2

Preliminary Data

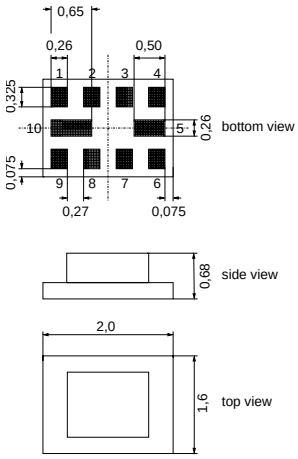
SMD

Application

- Low-loss RF filter for mobile telephone CDMA Cellular/PCS systems, transmit path (Tx)
- Usable passband:
  Filter 1 (Cellular): 25 MHz
  Filter 2 (PCS): 60 MHz
- 50 Ω/50 Ω unbalanced operation for both filters
- Input & Output can be exchanged, B9314 is bidirectional type.

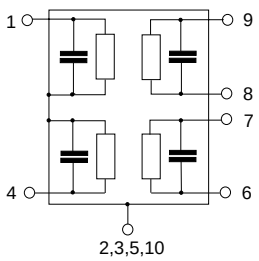
Features

- Package size 2.0 x1.6 x 0.68 mm^3
- Package code QCS10I
- RoHS compatible
- Approximate weight 0.008 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)



Pin configuration

- 1 Output/Input [Filter 1: Cellular band]
- 4 Output/Input [Filter 2: PCS band]
- 6 Input/Output [Filter 2: PCS band]
- 9 Input/Output [Filter 1: Cellular band]
- 2,3,5,7,8,10 Ground



Preliminary Data

SMD

Characteristics filter 1 (CDMA Cellular band)

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)

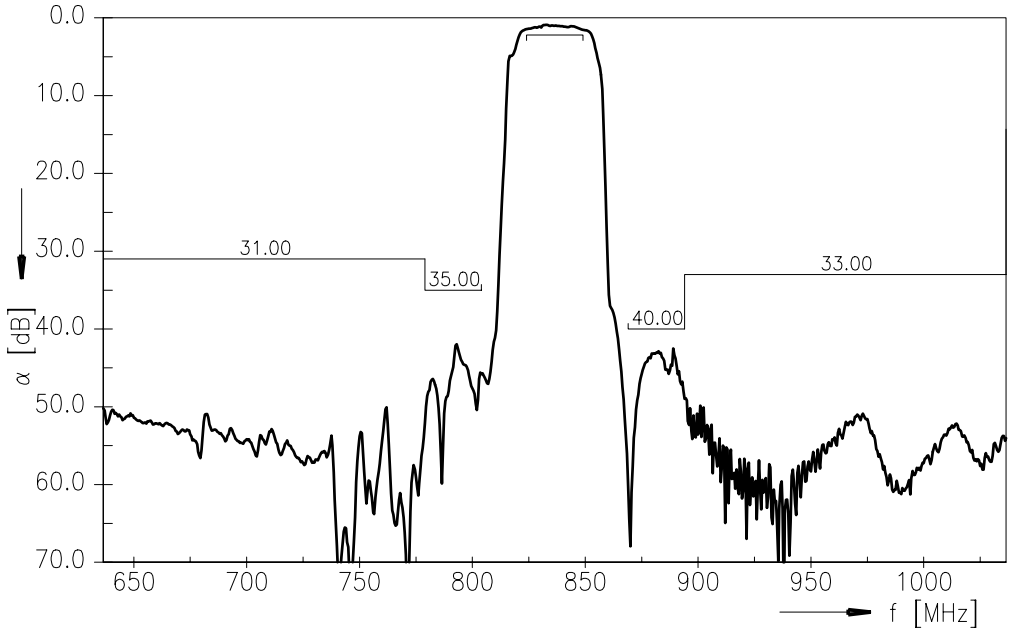
		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	836.5	—	MHz
Maximum insertion attenuation	α_{max}				
824.0 ... 849.0 MHz		—	1.7	2.2	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
824.0 ... 849.0 MHz		—	0.7	1.3	dB
Input return loss					
824.0 ... 849.0 MHz		9.5	11.5	—	dB
Output return loss					
824.0 ... 849.0 MHz		9.5	11.5	—	dB
Attenuation	α				
0.0 ... 779.0 MHz		31.0	50.0	—	dB
779.0 ... 804.0 MHz		35.0	42.0	—	dB
869.0 ... 894.0 MHz		40.0	43.0	—	dB
894.0 ... 2547.0 MHz		33.0	38.0	—	dB
2547.0 ... 6000.0 MHz		15.0	29.0	—	dB

Maximum ratings

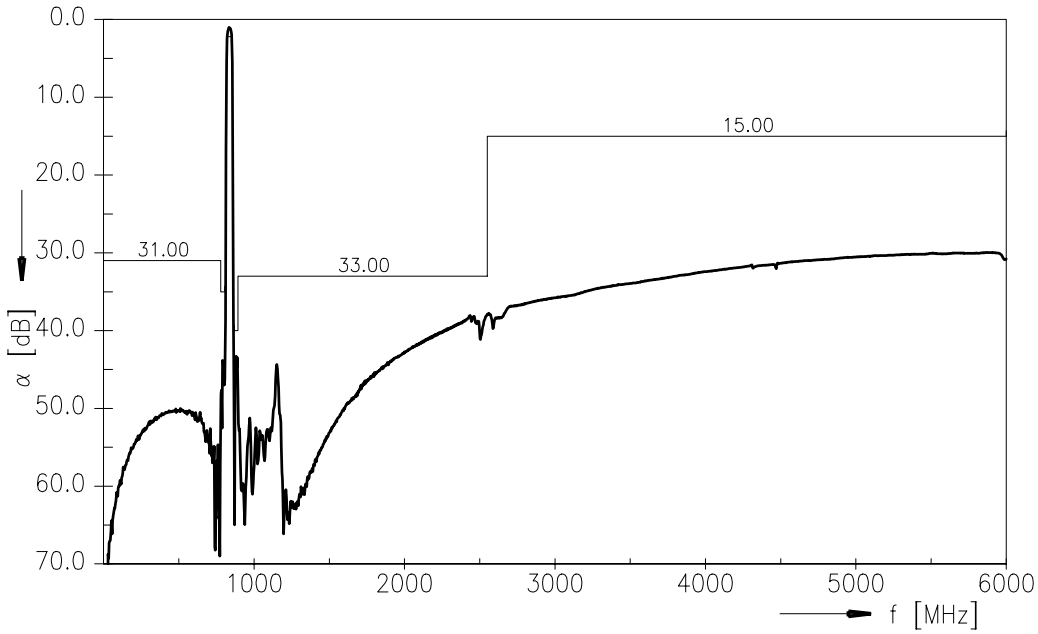
Operable temperature range	T	–30/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	100[1)]	V	machine model, 10 pulses
Input power at CDMA Cellular Tx band	P_{IN}	12	dBm	continuous wave @ +55˚C ambient

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

Transfer function filter 1 (CDMA Cellular band)

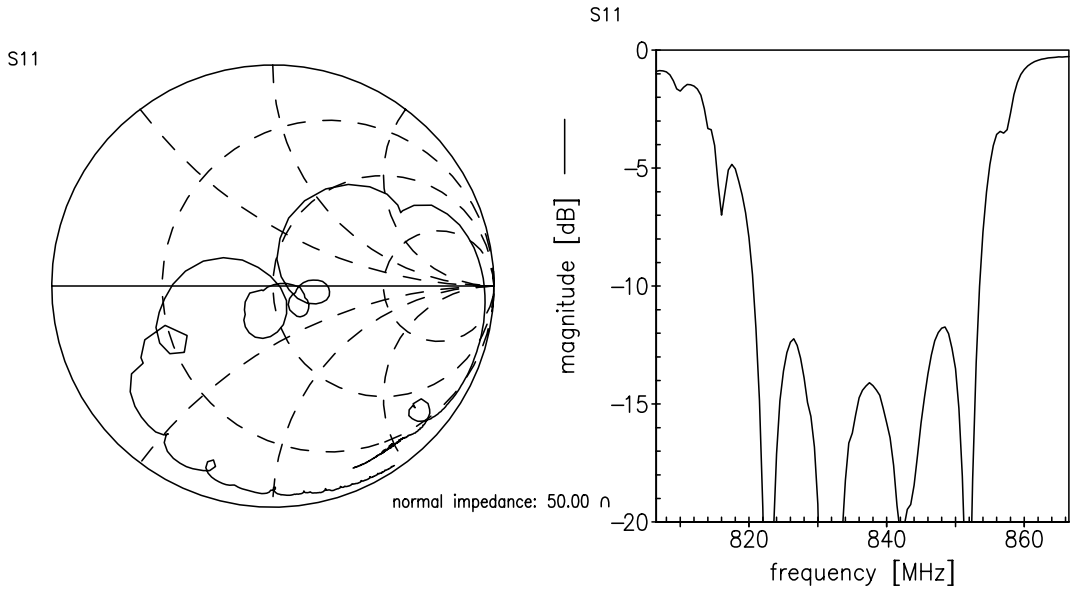


Transfer function filter 1 (CDMA Cellular band) - wideband

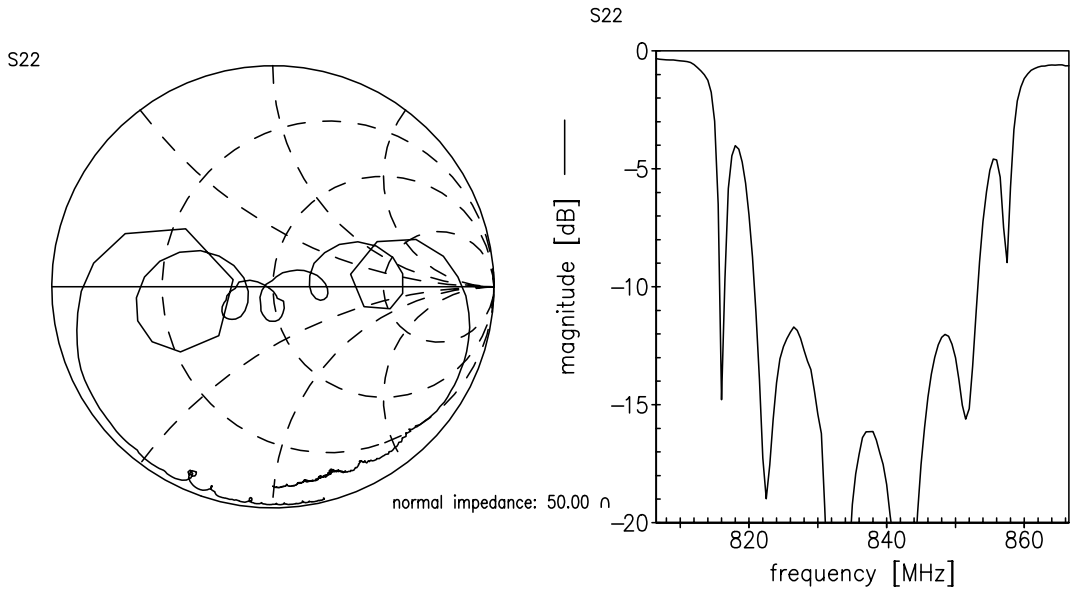


Smith charts filter 1 (CDMA Cellular band)

S_{11} function (Input at pin 1)



S_{22} function (Output at pin 9)



Characteristics filter 2 (CDMA PCS band)

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)

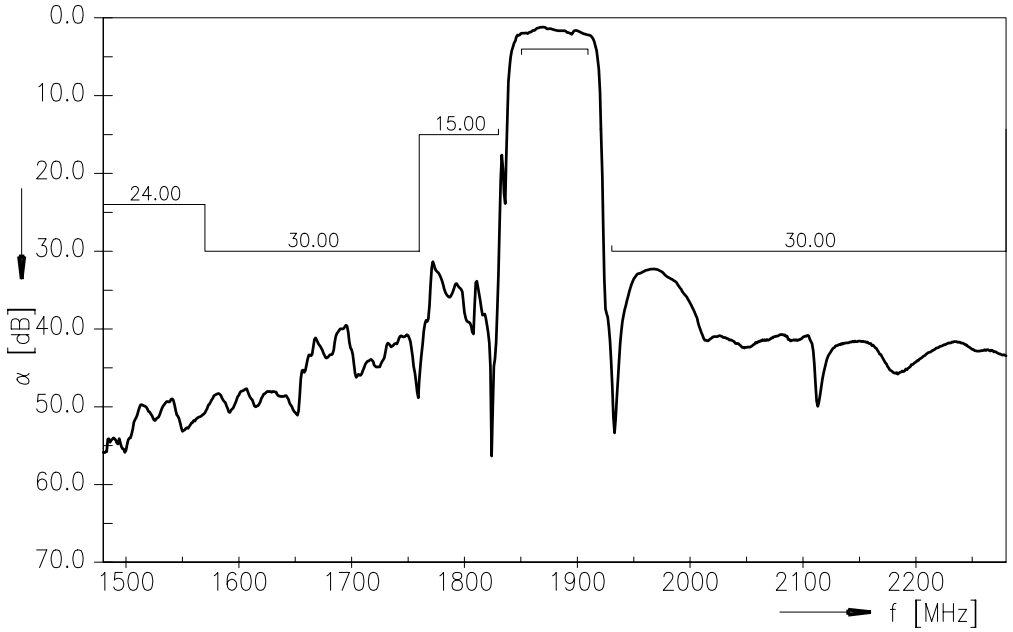
		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	1880.0	—	MHz
Maximum insertion attenuation	α_{max}				
1850.625... 1909.375MHz		—	2.4	4.0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1850.625... 1909.375MHz		—	1.2	2.8	dB
Input return loss					
1850.625... 1909.375MHz		8.0	10.0	—	dB
Output return loss					
1850.625... 1909.375MHz		8.0	10.0	—	dB
Attenuation	α				
0.0 ... 1570.0 MHz		24.0	50.0	—	dB
1570.0 ... 1760.0 MHz		30.0	40.0	—	dB
1760.0 ... 1830.0 MHz		15.0	18.5	—	dB
1930.625... 1989.4 MHz		30.0	32.5	—	dB
1989.4 ... 2500.0 MHz		30.0	34.0	—	dB
2500.0 ... 6000.0 MHz		15.0	28.0	—	dB

Maximum ratings

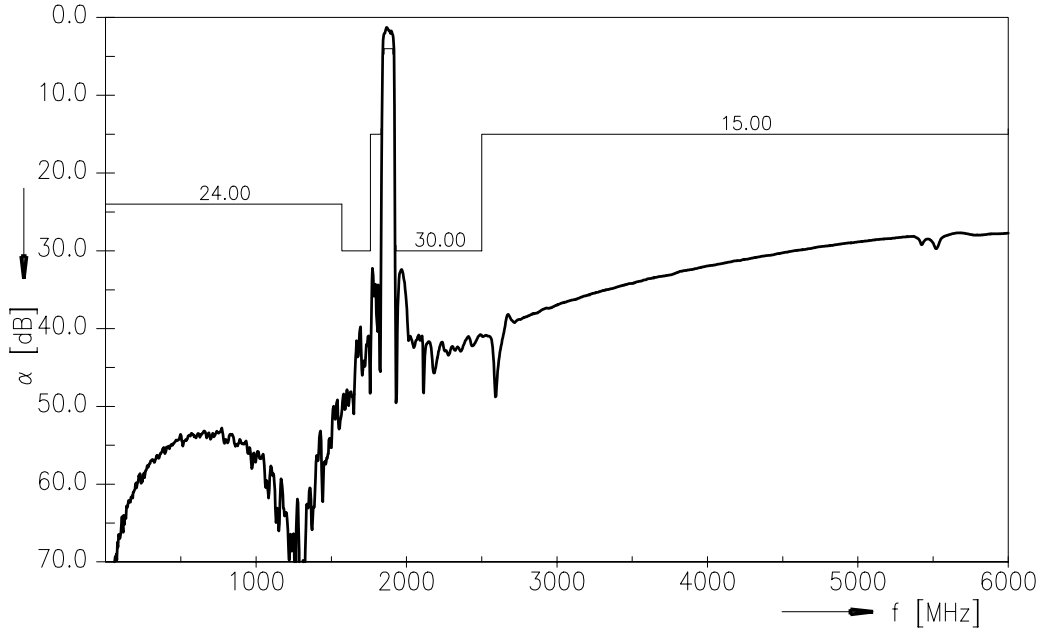
Operable temperature range	T	–30/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	50[1)]	V	machine model, 10 pulses
Input power at CDMA PCS Tx band	P_{IN}	12	dBm	continuous wave @ +55˚C ambient

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

Transfer function filter 2 (CDMA PCS band)

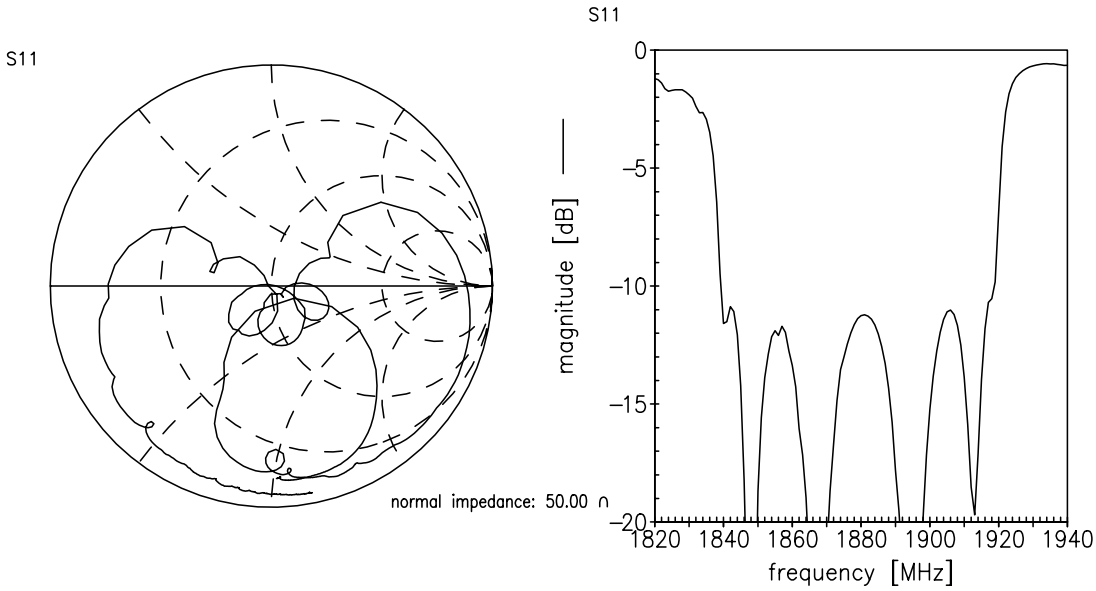


Transfer function filter 2 (CDMA PCS band) - wideband

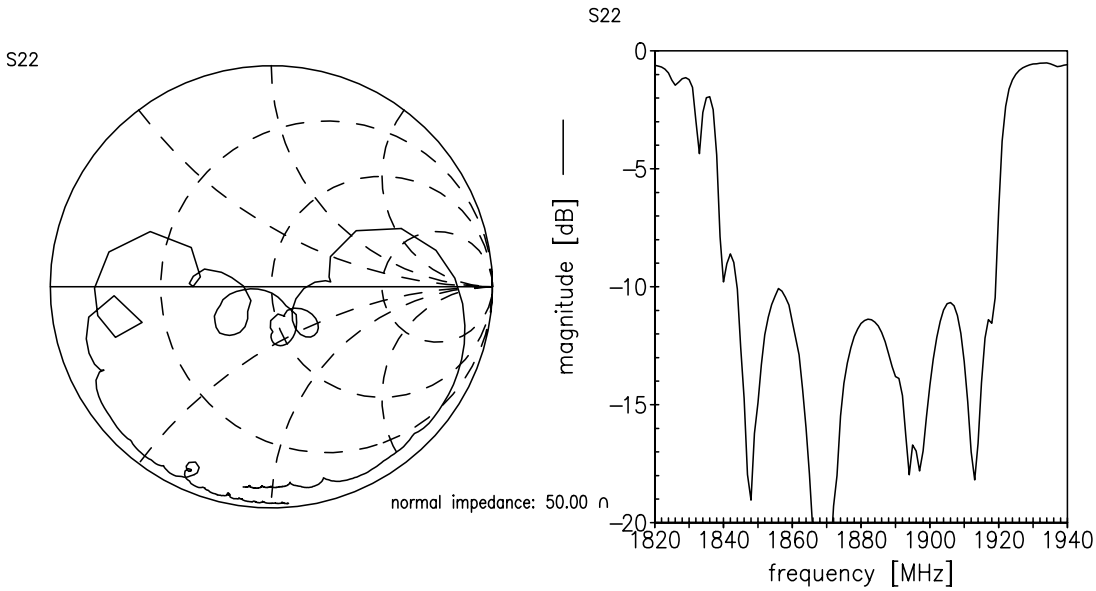


Smith charts filter 2 (CDMA PCS band)

S_{11} function (Input at pin 4)



S_{22} function (Output at pin 6)



References

Type	B9314
Ordering code	B39192B9314N410
Marking and package	C61157-A7-A146
Packaging	F61074-V8152-Z000
Date codes	L_1126
S-parameters	B9314_LB_NB.s2p, B9314_LB_WB.s2p B9314_UB_NB.s2p, B9314_UB_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."
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.

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