SAW Components

SAW Duplexer for femtocell

Band 5 (3G/LTE)

Series/type:	**B7925**
Ordering code:	**B39881B7925P810**
Date:	April 12, 2013
Version:	2.1

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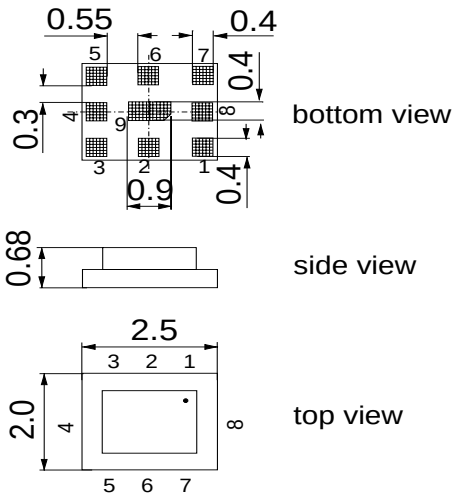
Application

- Low-loss SAW duplexer for WCDMA femtocell systems
- Low insertion attenuation
- Usable passband 25 MHz
- High power durability

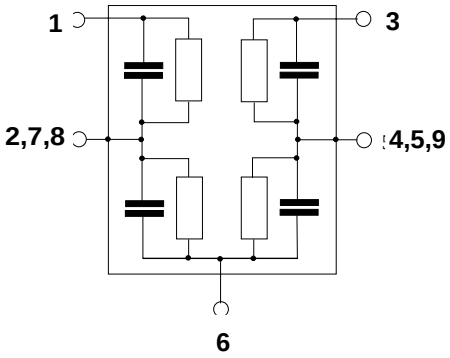
Features

- Package size 2.5 * 2.0 * 0.68 mm³
- RoHS compatible
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, Au-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- **M**oisture **S**ensitivity **L**evel 3
- Rx =UPLINK = 824-849 MHz
- Tx = DOWNLINK = 869-894 MHz



Pin configuration

■	3	Rx output
■	1	Tx input
■	6	Antenna
■	2, 4, 5, 7, 8, 9	To be grounded



DataSheet SMD

Characteristics

Temperature range for specification: T = –30 ˚C to +85 ˚C
TX terminating impedance: Z_{Tx} = 50 Ω
ANT terminating impedance: Z_{Ant} = 50 Ω || 8.7 nH
RX teminating impedance: Z_{Rx} = 50 Ω

Characteristics ANT-Rx				min.	typ. @ 25 ˚C	max.	
Center frequency		f_c		-	836.5	-	MHz
Maximum insertion attenuation		α					
824 ... 849	MHz			-	2.6	3.0	dB
Amplitude ripple (p-p)		Δα					
824 ... 849	MHz			-	1.2	1.8	dB
Input VSWR (Rx port)							
824 ... 849	MHz			-	1.7	2.1	
Output VSWR (Ant Port)							
824 ... 849	MHz			-	1.7	2.0	
Attenuation		α					
869.0 ... 894.0	MHz			50	54	-	dB
1840.0 ... 1870.0	MHz			25	37	-	dB
1930.0 ... 1990.0	MHz			25	36	-	dB
2110.0 ... 2170.0	MHz			25	35	-	dB
2400.0 ... 2484.0	MHz			25	34	-	dB
1648.0 ... 1698.0	MHz			25	39	-	dB
2472.0 ... 2547.0	MHz			25	34	-	dB
3296.0 ... 3396.0	MHz			20	31	-	dB

DataSheet SMD

Characteristics

Temperature range for specification: T = –30 ˚C to +85 ˚C
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ANT terminating impedance: Z_{Ant} = 50 Ω || 8.7 nH
RX teminating impedance: Z_{Rx} = 50 Ω

Characteristics Tx-ANT		min.	typ. @ 25 ˚C	max.	
Center frequency	f_c	-	881.5	-	MHz
Maximum insertion attenuation	α				
869.0 ... 894.0 MHz		-	1.7	2.5	dB
Amplitude ripple (p-p)	Δα				
869.0 ... 894.0 MHz		-	0.8	1.3	dB
Input VSWR (Tx port)					
869.0 ... 894.0 MHz		-	1.7	2.0	
Output VSWR (Ant Port)					
869.0 ... 894.0 MHz		-	1.8	2.1	
Attenuation	α				
824.0 ... 849.0 MHz		48	51	-	dB
1574.4 ... 1576.4 MHz		45	50	-	dB
1602.5 ... 1615.5 MHz		35	49	-	dB
1738.0 ... 1788.0 MHz		30	47	-	dB
1850.0 ... 1910.0 MHz		40	45	-	dB
1920.0 ... 1980.0 MHz		40	45	-	dB
2400.0 ... 2484.0 MHz		21	42	-	dB
2607.0 ... 2682.0 MHz		21	39	-	dB
3476.0 ... 3576.0 MHz		15	29	-	dB

Characteristics

Temperature range for specification: T = –30 ˚C to +85 ˚C
TX terminating impedance: Z_{Tx} = 50 Ω
ANT terminating impedance: Z_{Ant} = 50 Ω || 8.7 nH
RX teminating impedance: Z_{Rx} = 50 Ω

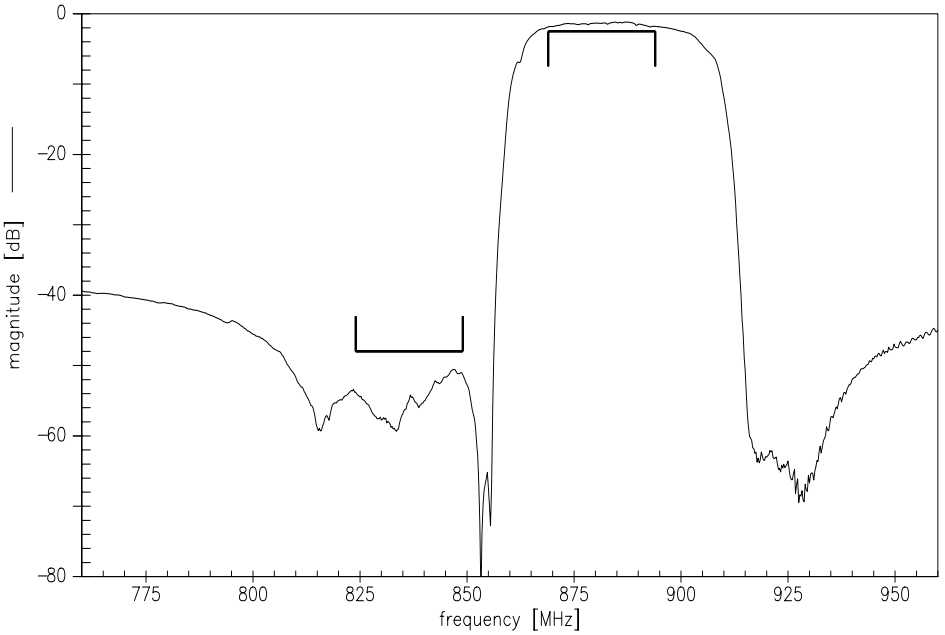
Characteristics Tx-Rx				min.	typ. @ 25 ˚C	max.	
Attenuation			α				
869.0	...	894.0	MHz	53	57	-	dB
824.0	...	849.0	MHz	49	53	-	dB

Maximum Ratings

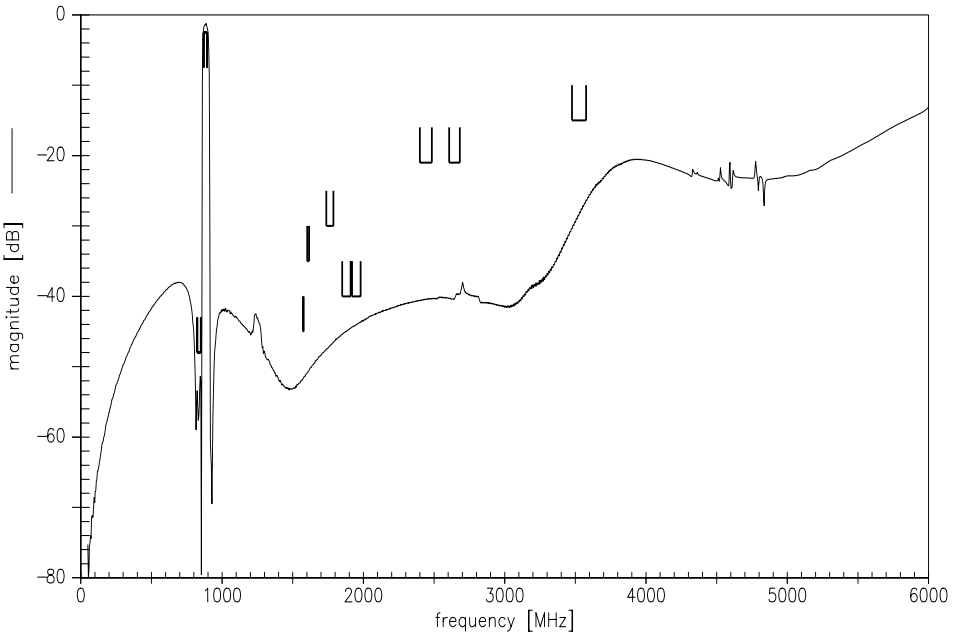
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	50[1)]	V	machine model, 1 pulse
Input power at pin 1				source and load impedance 50 Ω
871.5 ...891.5 MHz	P_{in}	30	dBm	} LTE 5 MHz downlink average power T = 55˚C, 50.000 h
elsewhere	P_{in}	10	dBm	

1) According to JESD22-A115A (machine model), 1 negative and 1 positive pulses.

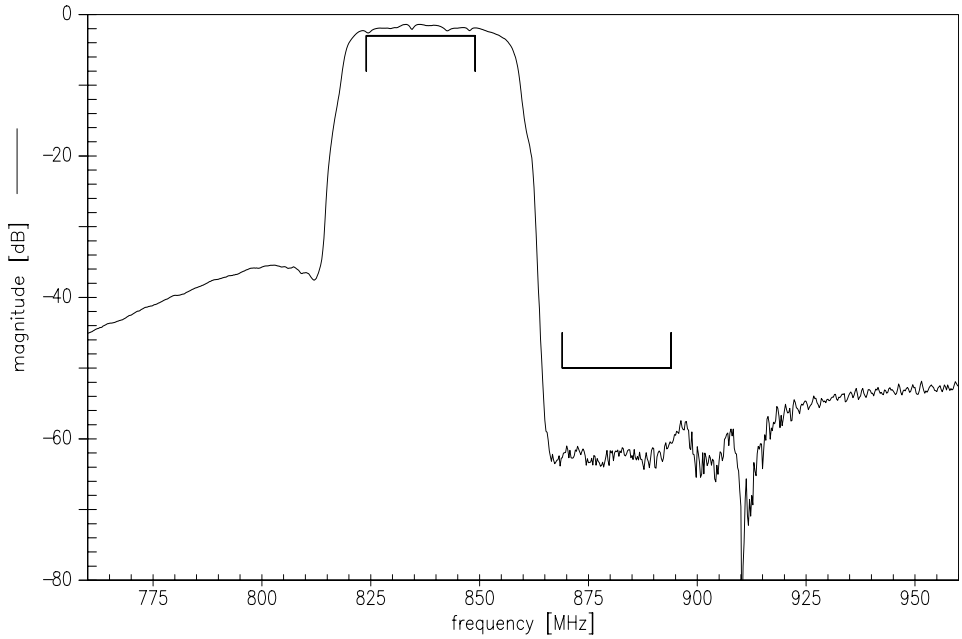
Frequency Response TX-ANT



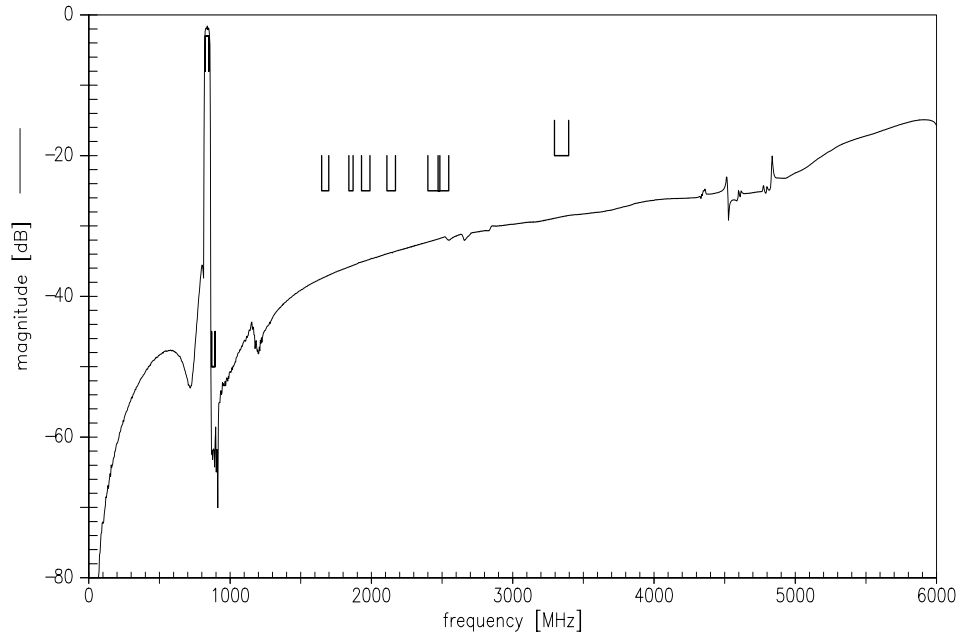
Frequency Response TX-ANT



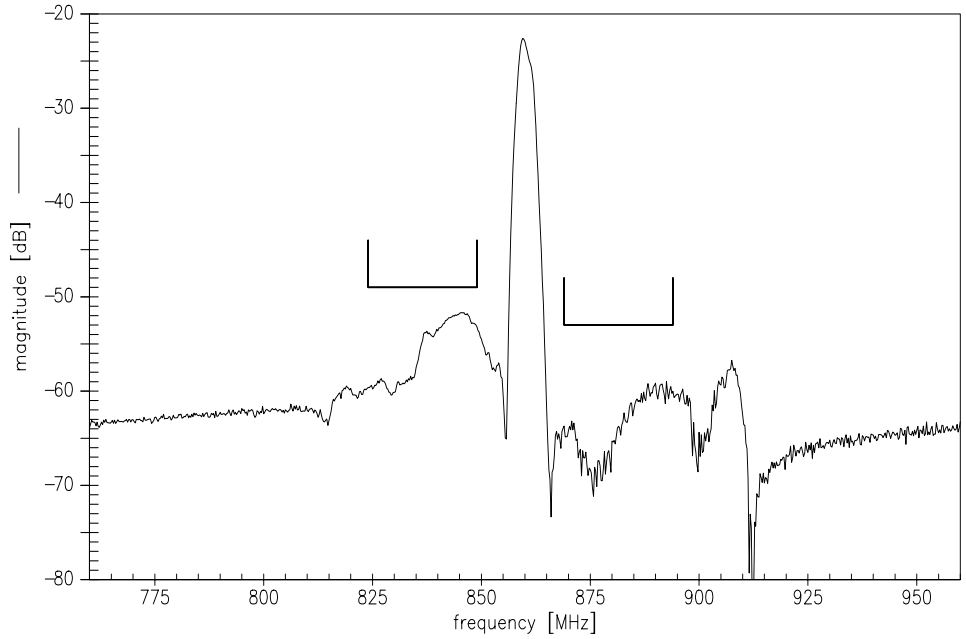
Frequency Response ANT-RX



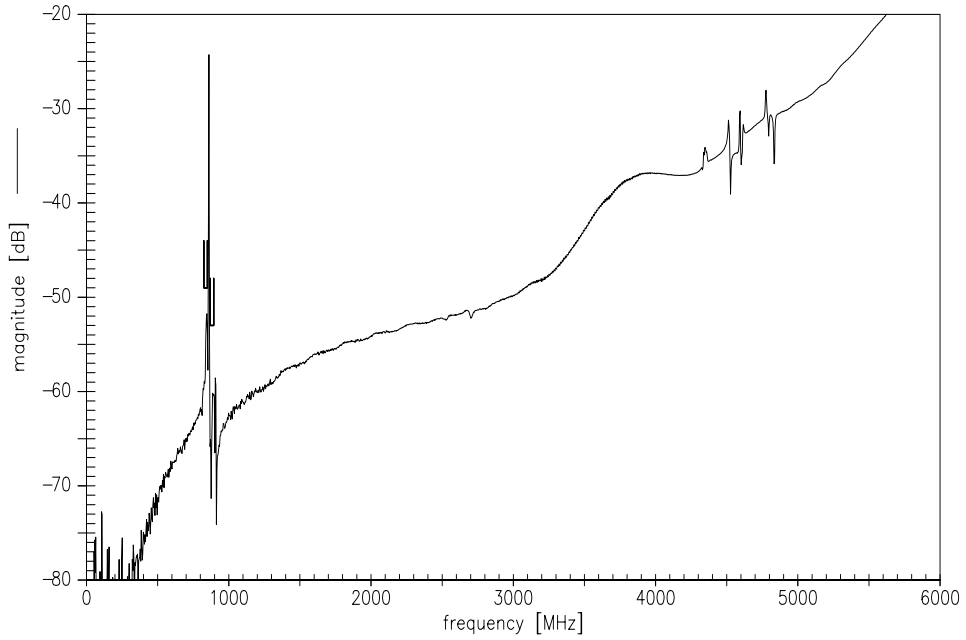
Frequency Response ANT-RX



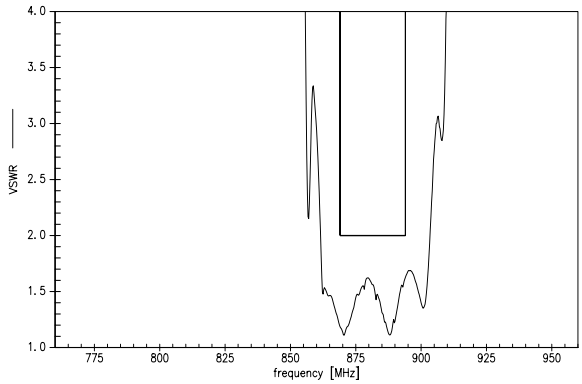
Frequency Response TX-RX

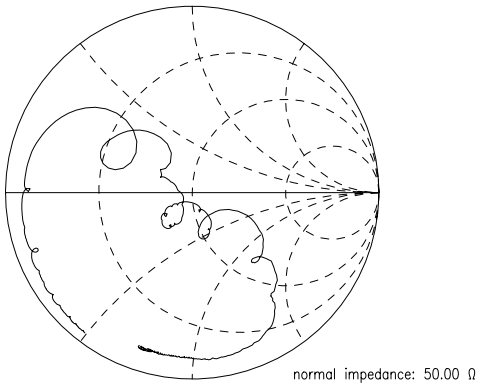


Frequency Response TX-RX

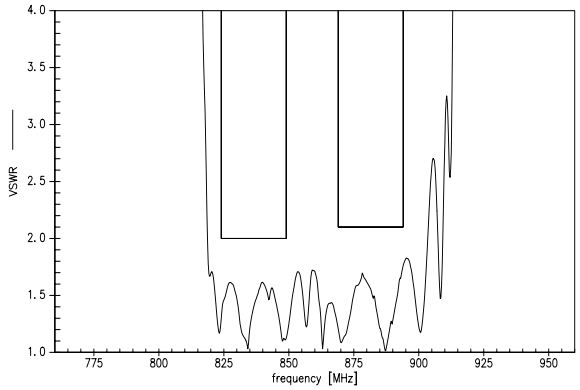


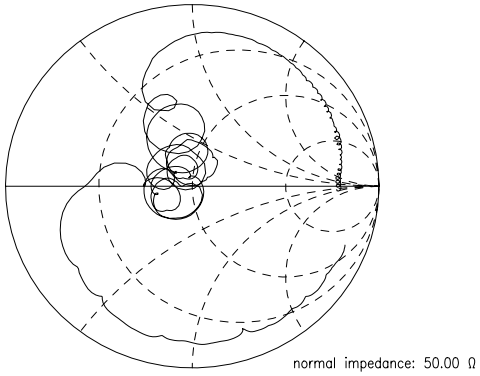
S11 VSWR (TX)



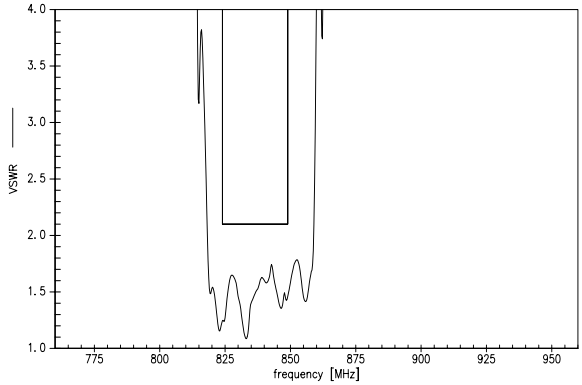


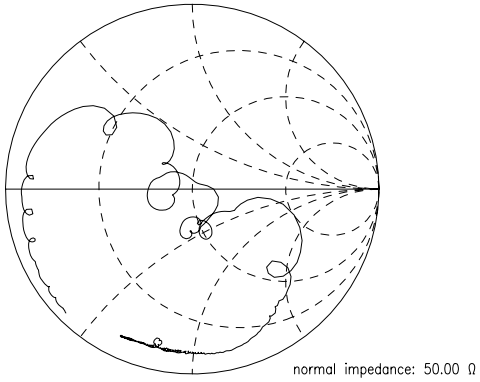
S22 VSWR (ANT)





S33 VSWR (RX)





References

Type	B7925
Ordering code	B39881B7925P810
Marking and package	C61157-A3-A54
Packaging	F61074-V8153-Z000
Date codes	L_1126
S-parameters	B7925_NB.s3p B7925_WB.s3p See file header for port/pin assignment table.
Soldering profile	S_6001
RoHS compatible	RoHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8th, 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases.
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Matching coils	See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm

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Published by EPCOS AG
Systems, Acoustics, Waves Business Group
P.O. Box 80 17 09, 81617 Munich, GERMANY

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