# Qualcom

RF360 Europe GmbH

### **SAW Components**

SAW Duplexer for Femtocell Band 1 (3G/LTE)

### Series/type: Ordering code:

### B8637 B39212B8637P810

Date: Version: December 05, 2014 2.0

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**B8637** 

1950.0 / 2140.0 MHz

#### **SAW Components**

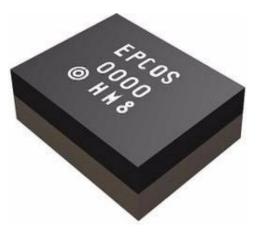
#### **SAW Duplexer for Femtocell**

**Data Sheet** 

SMD

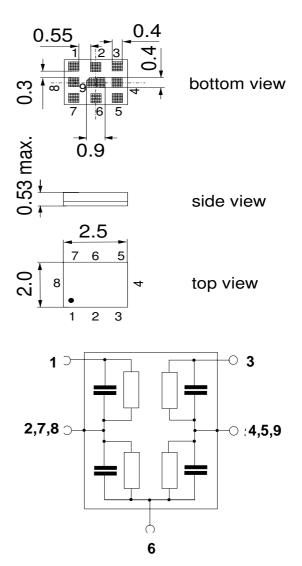
#### Application

- Low-loss SAW duplexer for 3G/LTE femtocell systems (Band 1)
- Low insertion attenuation
- Low amplitude ripple
- Usable passband 60 MHz
- High power durability
- Rx = Uplink = *1920-1980 MHz*
- Tx = Downlink = *2110-2170 MHz*



#### Features

- Package size 2.5 \* 2.0 mm<sup>2</sup>
- max. Package height 0.53 mm
- RoHS compatible
- Package for Surface Mount Technology (SMT)
- Ni, Au-plated terminals
- Electrostatic Sensitive Device (ESD)
- Moisture Sensitivity Level 3



#### Pin configuration

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

**SAW Components** 

#### SAW Duplexer for Femtocell

**Data Sheet** 

#### **Characteristics**

Temperature range for specification:	$T = -10 \degree C \text{ to } +85 \degree C$	;
Antenna terminating impedance:	Z <sub>ANT</sub> = 50 Ω // 3.0 nH	
RX terminating impedance:	$Z_{RX} = 50 \Omega$	
TX terminating impedance:	$Z_{TX} = 50 \Omega$	

SMD

Characterisitcs TX - ANT	min.	typ. @ 25 °C	max.	
Center frequency f <sub>C</sub>		2140.0		MHz
Maximum insertion attenuation $\alpha_{max}$				
2110.0 2170.0 MHz	-	2.0	2.4	dB
Amplitude ripple (p-p)Δα				
2110.0 2170.0 MHz	-	0.8	1.6	dB
Error Vector Magnitude EVM1				
2112.5 2167.5 MHz	-	0.5	1.5	%
Input VSWR (TX port)				
2110.0 2170.0 MHz	-	1.7	2.2	
Output VSWR (ANT port)				
2110.0 2170.0 MHz	-	1.5	2.0	
Attenuation α				
10.0 1574.0 MHz	30	35	-	dB
843.0 894.0 MHz	30	40	-	dB
1574.0 1606.0 MHz	30	34	-	dB
1606.0 1880.0 MHz	30	34	-	dB
1805.0 1880.0 MHz	30	40 51	-	dB
1920.0 1980.0 MHz 2250.0 2400.0 MHz	45 30	42	-	dB dB
2400.0 2400.0 MHz	30	42	-	dB
2500.0 2700.0 MHz	23	43	-	dB
2700.0 3000.0 MHz	23	42	_	dB
2620.0 2690.0 MHz	23	42	_	dB
3000.0 3800.0 MHz	10	27	-	dB
3800.0 4220.0 MHz	8	20	-	dB
4220.0 4340.0 MHz	5	15	-	dB
4340.0 5000.0 MHz	3	10	-	dB
5000.0 6000.0 MHz	3	9	-	dB

<sup>1)</sup> Error Vector Magnitude (EVM) based on definition given in 3GPP TS 25.141

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**SAW Duplexer for Femtocell** 

Data Sheet

#### Characteristics

Temperature range for specification:	T = ·	–10 °C to +85 °C
Antenna terminating impedance:	Z <sub>ANT</sub> =	50 Ω // 3.0 nH
RX terminating impedance:	Z <sub>RX</sub> =	50 Ω
TX terminating impedance:	Z <sub>TX</sub> =	50 Ω

SMD

Characterisitcs ANT - RX		min.	typ. @ 25 °C	max.	
Center frequency	f <sub>C</sub>		1950.0		MHz
Maximum insertion attenuation 1920.0 1980.0 MHz	α <sub>max</sub>	-	2.0	3.5	dB
<b>Amplitude ripple</b> (p-p) 1920.0 1980.0 MHz	Δα	-	0.9	2.2	dB
Error Vector Magnitude 1922.5 1977.5 MHz	EVM <sup>1)</sup>	-	1.5	3.0	%
Input VSWR (ANT port) 1920.0 1980.0 MHz	Z	-	1.5	2.0	
Output VSWR (RX port) 1920.0 1980.0 MHz	2	-	1.8	2.2	
Attenuation	α				
10.0 1785.0 MHz	2	30	40	-	dB
1785.0 1880.0 MHz	Z	20	44	-	dB
1880.0 1900.0 MHz	Z	4	8	-	dB
2000.0 2110.0 MHz		2.5	12	-	dB
2110.0 2170.0 MHz		43	47	-	dB
2255.0 2400.0 MHz		25	33	-	dB
2400.0 2500.0 MHz		35	48	-	dB
2500.0 3840.0 MHz		15	25	-	dB
3840.0 3960.0 MHz		17	24	-	dB
3960.0 5000.0 MHz		17	22	-	dB
5000.0 5760.0 MHz		15	26	-	dB
5760.0 5940.0 MHz	2	15	26	-	dB

<sup>1)</sup> Error Vector Magnitude (EVM) based on definition given in 3GPP TS 25.141

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1950.0 / 2140.0 MHz

SAW Components					B8637
SAW Duplexer for Femtocell				1950.0	) / 2140.0 MHz
Data Sheet	SM				
Characteristics					
Temperature range for specification: ANT terminating impedance: RX teminating impedance: TX terminating impedance:	Z <sub>Ant</sub> =	-10 °C to 50 Ω // 50 Ω 50 Ω			
Characteristics TX-RX		min.	typ. @ 25 °C	max.	
Attenuation	α				
	MHz	47	54	-	dB
2110.0 2170.0	MHz	50	55	-	dB
Maximum Ratings					1
Storage temperature range T <sub>stg</sub>	-40/+85	°C			
DC voltage V <sub>DC</sub>	0	V			
ESD voltage V <sub>ESD</sub>	50 <sup>1)</sup>	V	machine	model,	1 pulse

De ronage	·DC	Ũ		
ESD voltage	$V_{ESD}$	50 <sup>1)</sup>	V	machine model, 1 pulse
Input power at pin 1				source and load impedance 50 $\Omega$
				LTE 5 MHz downlink
2110.02170.0 MHz	P <sub>in</sub>	28	dBm	<pre>} average power</pre>
				T = 55°C, 50.000 h
elsewhere	P <sub>in</sub>	10	dBm	

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

**B8637** 

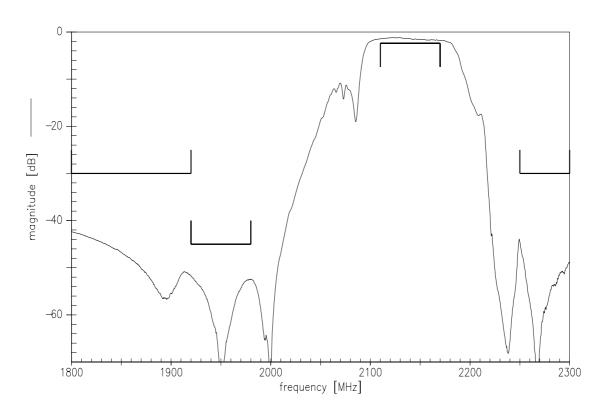
### SAW Components

#### SAW Duplexer for Femtocell

1950.0 / 2140.0 MHz

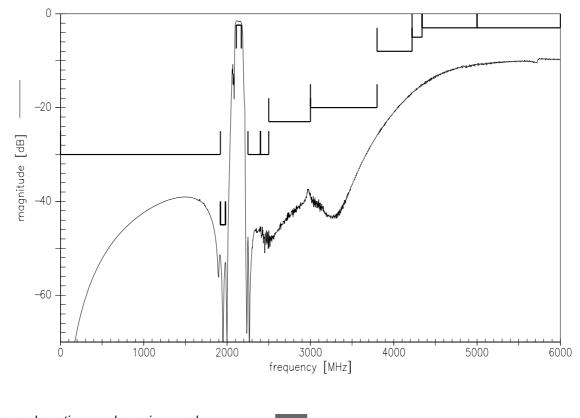
**Data Sheet** 

Frequency Response TX-ANT



SMD

### Frequency Response TX-ANT



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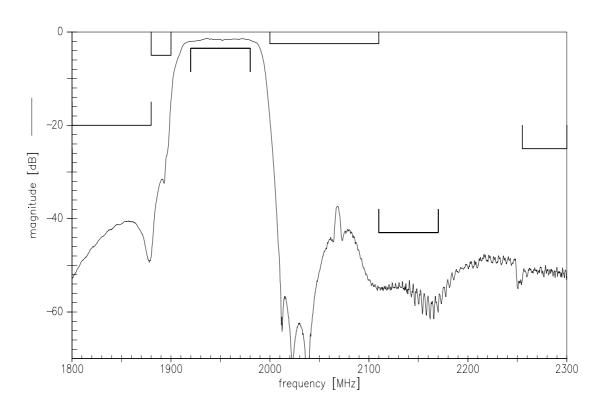
### SAW Components

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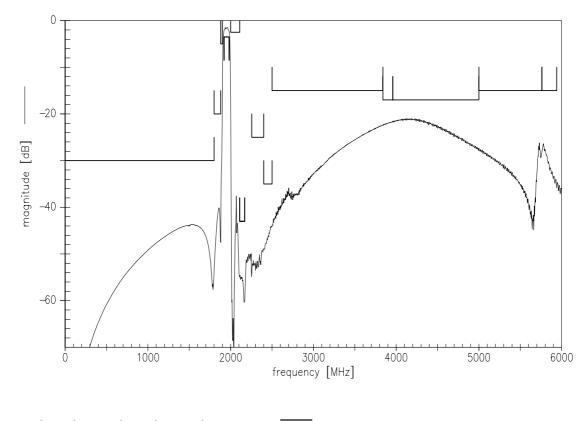
**Data Sheet** 

Frequency Response ANT-RX



SMD

### Frequency Response ANT-RX



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### **②TDK**

**B8637** 

1950.0 / 2140.0 MHz

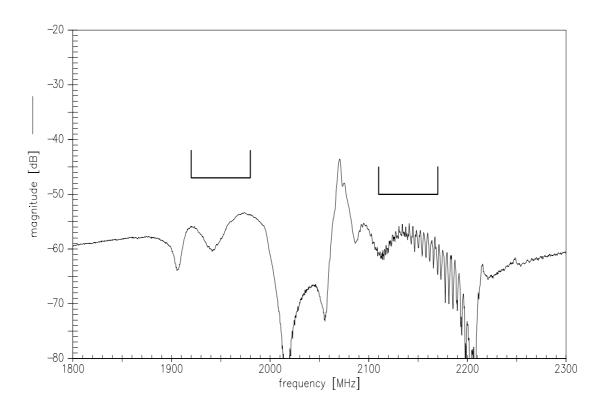
### SAW Components

**Data Sheet** 

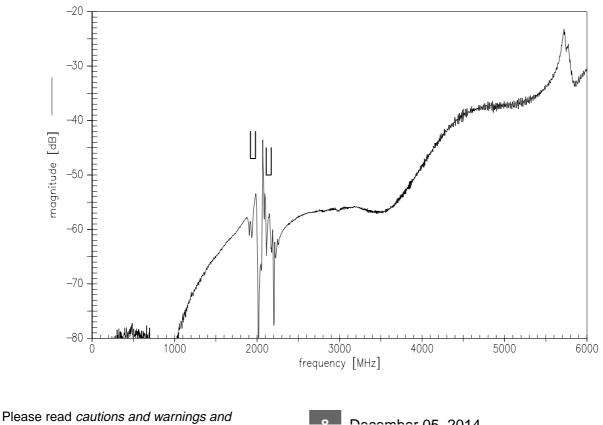
SAW Duplexer for Femtocell

SMD

#### Frequency Response TX-RX

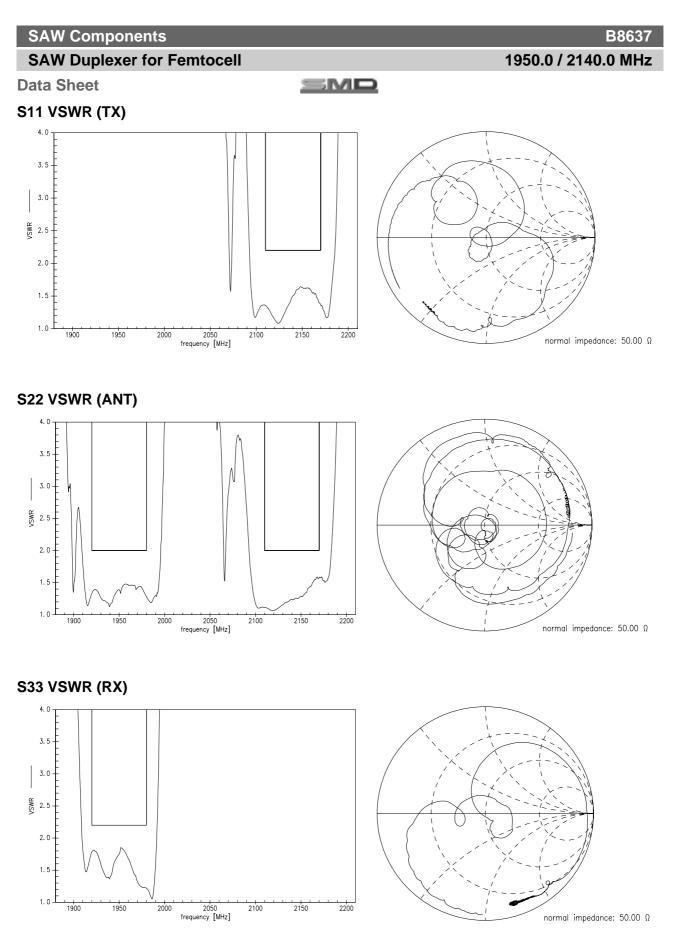


Frequency Response TX-RX



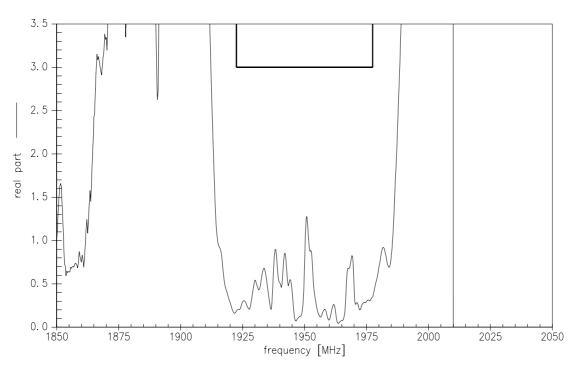
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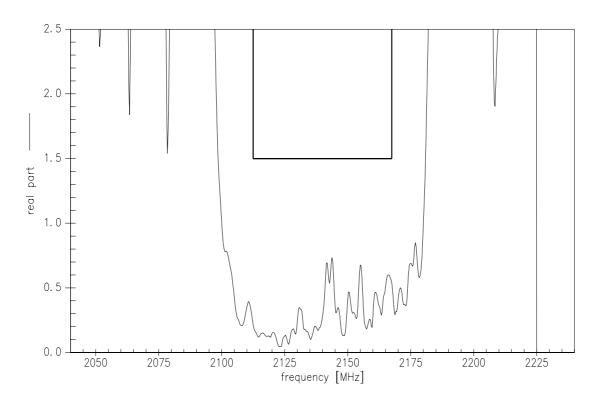


# **⇔TDK**









#### **SAW Components**

#### SAW Duplexer for Femtocell

**Data Sheet** 

#### References

Туре	B8637	
Ordering code	B39212B8637P810	
Marking and package	C61157-A8-A158	
Packaging	F61074-V8232-Z000	
Date codes	L_1126	
S-parameters	B8637_NB.s3p, B8637_WB.s3p see file header for port/pin assignement 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 8 <sup>th</sup> , 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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1950.0 / 2140.0 MHz



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