



# SAW Components

## SAW Duplexer

Automotive telematics

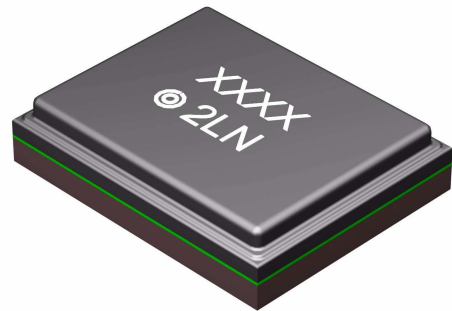
<b>Series/type:</b>	<b>B4411</b>
<b>Ordering code:</b>	<b>B39182B4411P810</b>
<b>Date:</b>	<b>June 24, 2014</b>
<b>Version:</b>	<b>2.0</b>

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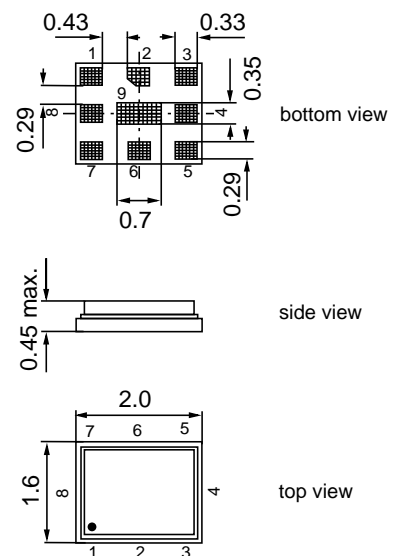
EPCOS AG is a TDK Group Company.

**Application**

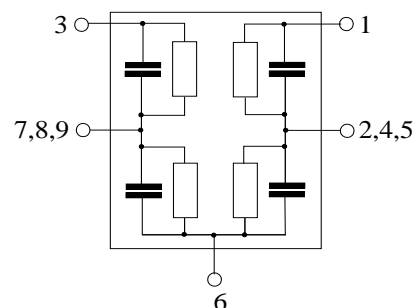
- SAW duplexer for LTE Band III systems
- High Rx-Tx isolation
- Low amplitude ripple
- Usable passband 75 MHz


**Features**

- Package size 2.0 \* 1.6 mm<sup>2</sup>
- Package height max. 0.45 mm
- RoHS compatible
- Approx. weight 0.005 g
- Package for **Surface Mount Technology (SMT)**
- Ni terminals, Au-plated
- **Electrostatic Sensitive Device (ESD)**
- AEC-Q200 qualified component family (operable temperature range -40°C to +85°C)


**Pin configuration**

- 3 TX Input
- 1 RX Output
- 6 Antenna
- 7, 8, 9 To be grounded
- 2, 4, 5 To be grounded



Data sheet


**Characteristics**

Temperature range for specification:	T = -40 °C to +85 °C
ANT terminating impedance:	Z <sub>ANT</sub> = 50 Ω    3.4 nH
RX terminating impedance:	Z <sub>RX</sub> = 50 Ω    8.0 nH
TX terminating impedance:	Z <sub>TX</sub> = 50 Ω

Characteristics TX - ANT		min.	typ. @ 25°C	max.	
<b>Center frequency</b>	f <sub>C</sub>	—	1747.5	—	MHz
<b>Maximum insertion attenuation</b> 1710.0 ... 1785.0 MHz	α <sub>max</sub>	—	2.8	5.0	dB
<b>Amplitude ripple (p-p)</b> 1710.0 ... 1785.0 MHz	Δα 1)	—	0.8	2.5	dB
<b>Error Vector Magnitude</b> @f <sub>Carrier</sub> 1712.4 ... 1782.6 MHz	EVM 2)	—	1.5	6.0	%
<b>VSWR</b>					
TX port 1710.0 ... 1785.0 MHz		—	1.7	2.1	
ANT port 1710.0 ... 1785.0 MHz		—	1.6	2.0	
<b>Attenuation</b>	α				
100.0 ... 1565.42 MHz		27	30	—	dB
1565.42 ... 1605.886MHz		31	34	—	dB
1605.886... 1680.0 MHz		17	28	—	dB
1805.0 ... 1880.0 MHz		41	44	—	dB
1920.0 ... 1980.0 MHz		18	23	—	dB
2110.0 ... 2170.0 MHz		30	34	—	dB
2400.0 ... 2500.0 MHz		24	27	—	dB
2620.0 ... 2690.0 MHz		20	24	—	dB
3420.0 ... 3570.0 MHz		10	15	—	dB

1) Over any 5 MHz

2) Error Vector Magnitude (EVM) based on definition given in 3GPP TS 25.141.

Data sheet


**Characteristics**

Temperature range for specification:	T = -40 °C to +85 °C
ANT terminating impedance:	Z <sub>ANT</sub> = 50 Ω    3.4 nH
RX terminating impedance:	Z <sub>RX</sub> = 50 Ω    8.0 nH
TX terminating impedance:	Z <sub>TX</sub> = 50 Ω

Characteristics RX - ANT				min.	typ. @ 25°C	max.	
<b>Center frequency</b>		f <sub>C</sub>		—	1842.5	—	MHz
<b>Maximum insertion attenuation</b>	1805.0 ... 1880.0 MHz	α <sub>max</sub>		—	3.1	5.0	dB
<b>Amplitude ripple (p-p)</b>	1805.0 ... 1880.0 MHz	Δα	1)	—	1.1	2.5	dB
<b>Error Vector Magnitude</b>	@f <sub>Carrier</sub> 1807.4 ... 1877.6 MHz	EVM	2)	—	2.4	5.0	%
<b>VSWR</b>							
RX port	1805.0 ... 1880.0 MHz			—	1.6	2.0	
ANT port	1805.0 ... 1880.0 MHz			—	1.5	2.0	
<b>Attenuation</b>		α					
	100.0 ... 915.0 MHz			50	57	—	dB
	915.0 ... 1710.0 MHz			39	42	—	dB
	1710.0 ... 1780.0 MHz			42	46	—	dB
	1785.0 ... 1790.0 MHz			9	40	—	dB
	1920.0 ... 1940.0 MHz			30	35	—	dB
	1940.0 ... 2400.0 MHz			37	43	—	dB
	2400.0 ... 2500.0 MHz			39	43	—	dB
	2500.0 ... 2570.0 MHz			38	41	—	dB
	2570.0 ... 3300.0 MHz			34	37	—	dB

1) Over any 5 MHz

2) Error Vector Magnitude (EVM) based on definition given in 3GPP TS 25.141.

Data sheet


**Characteristics**

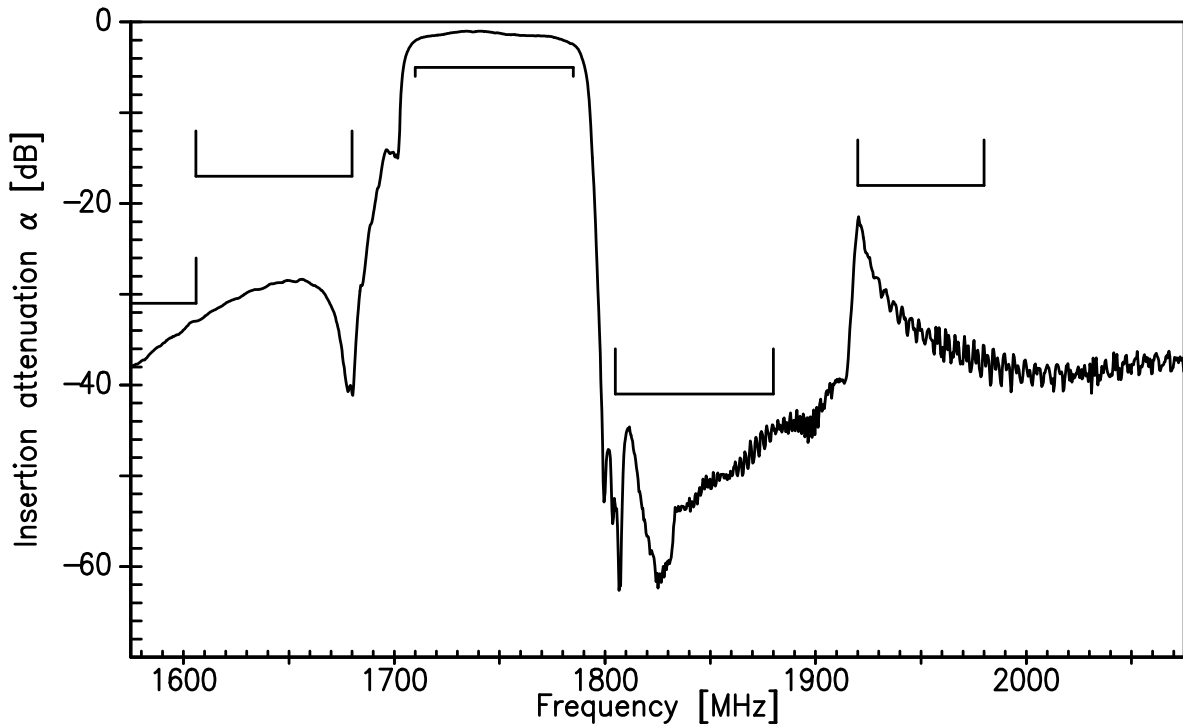
Temperature range for specification:	T = -40 °C to +85 °C
ANT terminating impedance:	Z <sub>ANT</sub> = 50 Ω    3.4 nH
RX terminating impedance:	Z <sub>RX</sub> = 50 Ω    8.0 nH
TX terminating impedance:	Z <sub>TX</sub> = 50 Ω

				min.	typ. @ 25°C	max.	
<b>Isolation between RX and TX</b>							
			α				
	1710.0 ... 1785.0	MHz		40	43	—	dB
	1785.0 ... 1805.0	MHz		35	40	—	dB
	1805.0 ... 1880.0	MHz		41	44	—	dB

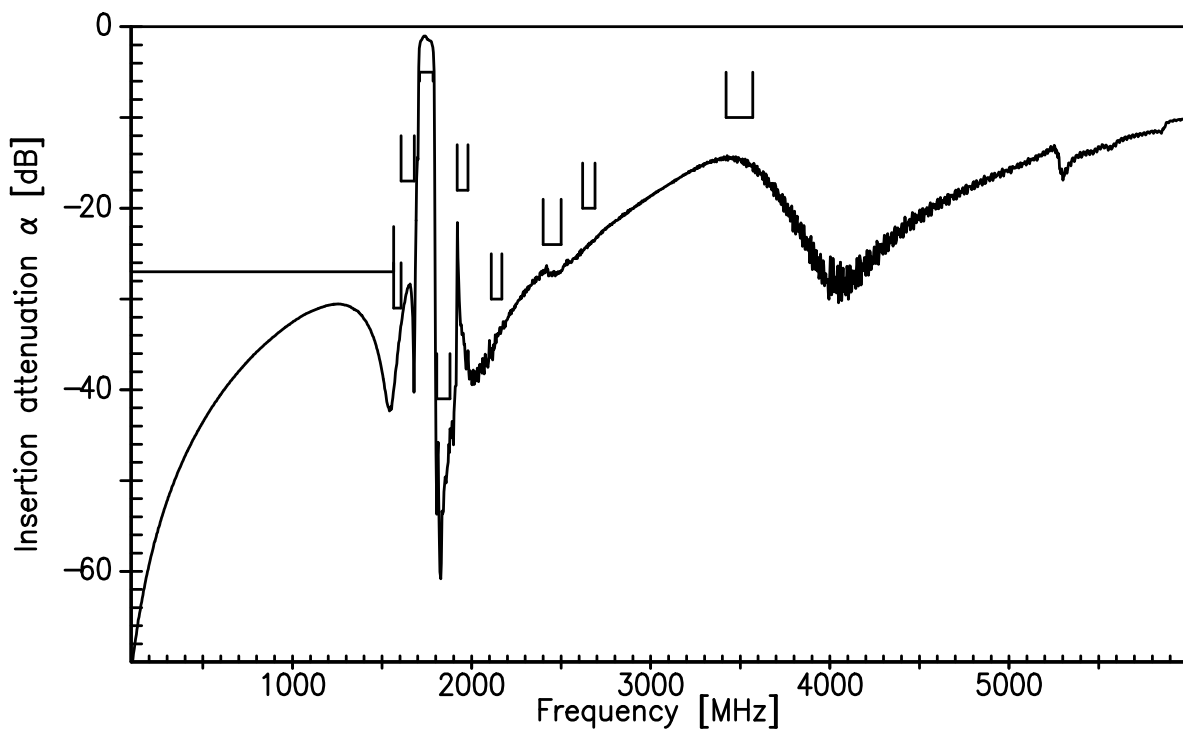
**Maximum ratings**

Operable temperature range	T	-40/+85	°C	source and load impedance 50 Ω } continuous wave T = 50°C, 5000 h
Storage temperature range	T <sub>stg</sub>	-40 +85	°C	
DC voltage	V <sub>DC</sub>	0	V	
Input power at	P <sub>IN</sub>			
1710.0 ... 1785.0 MHz		29	dBm	
elsewhere		10	dBm	

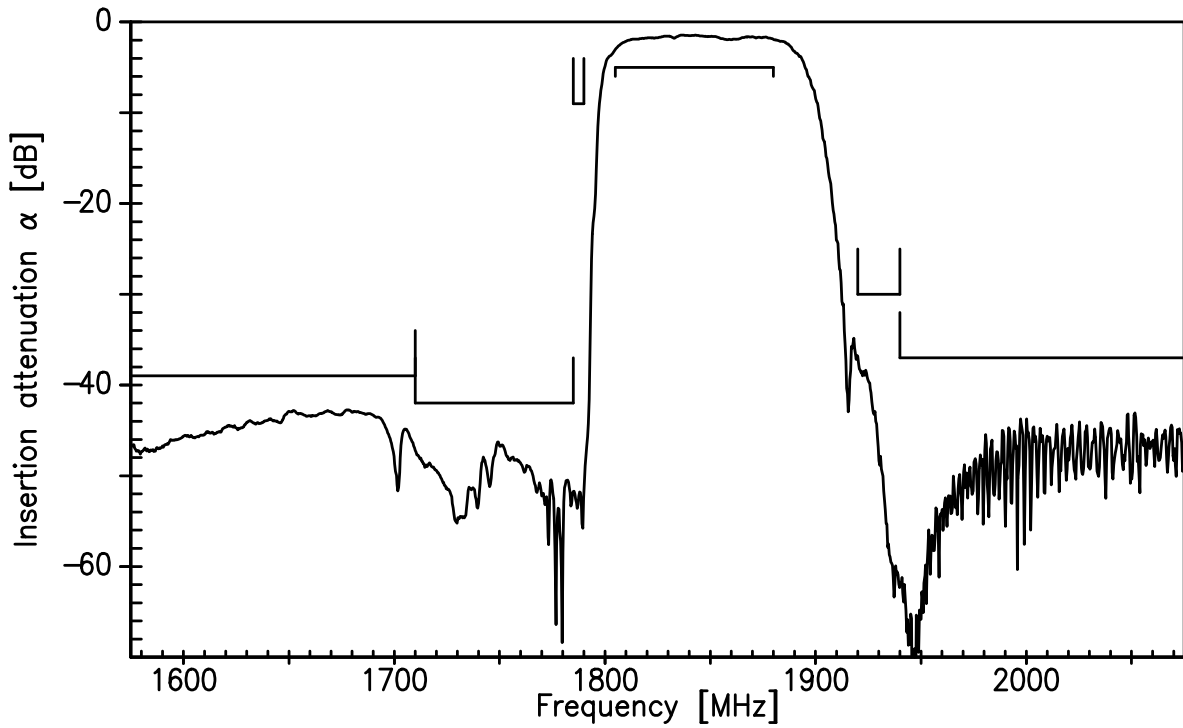
Frequency Response TX-ANT



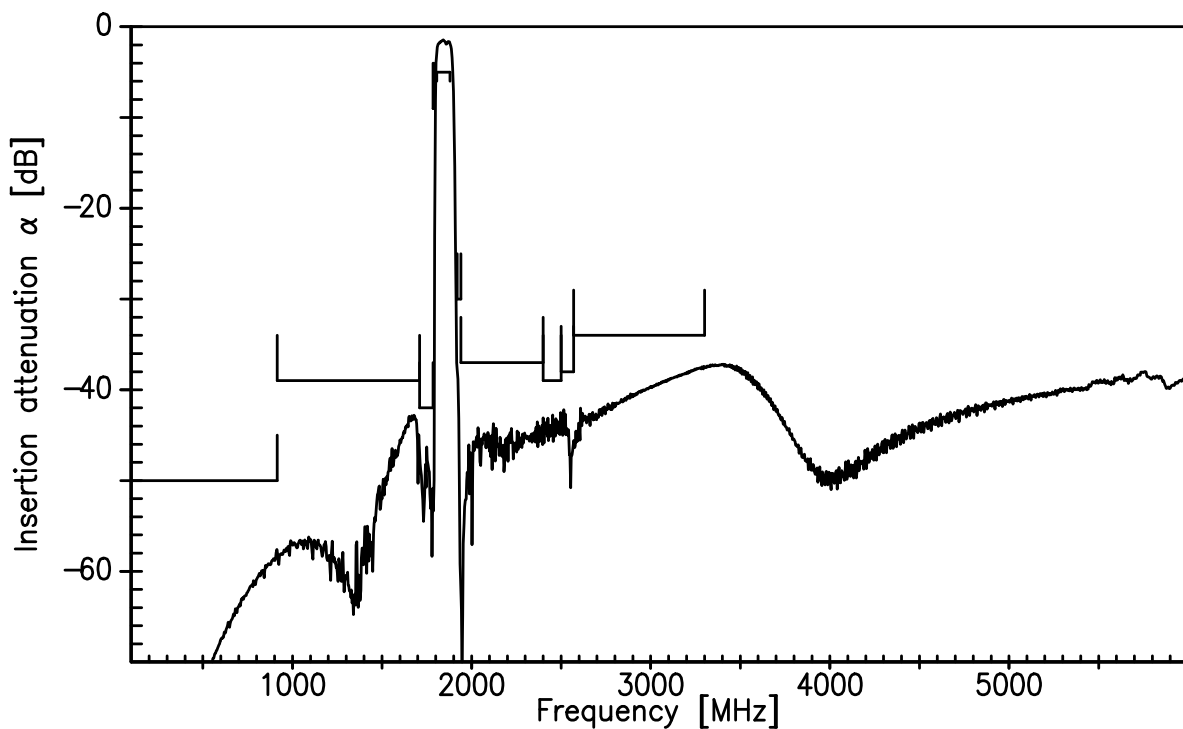
Frequency Response TX-ANT (wideband)



Frequency Response RX-ANT



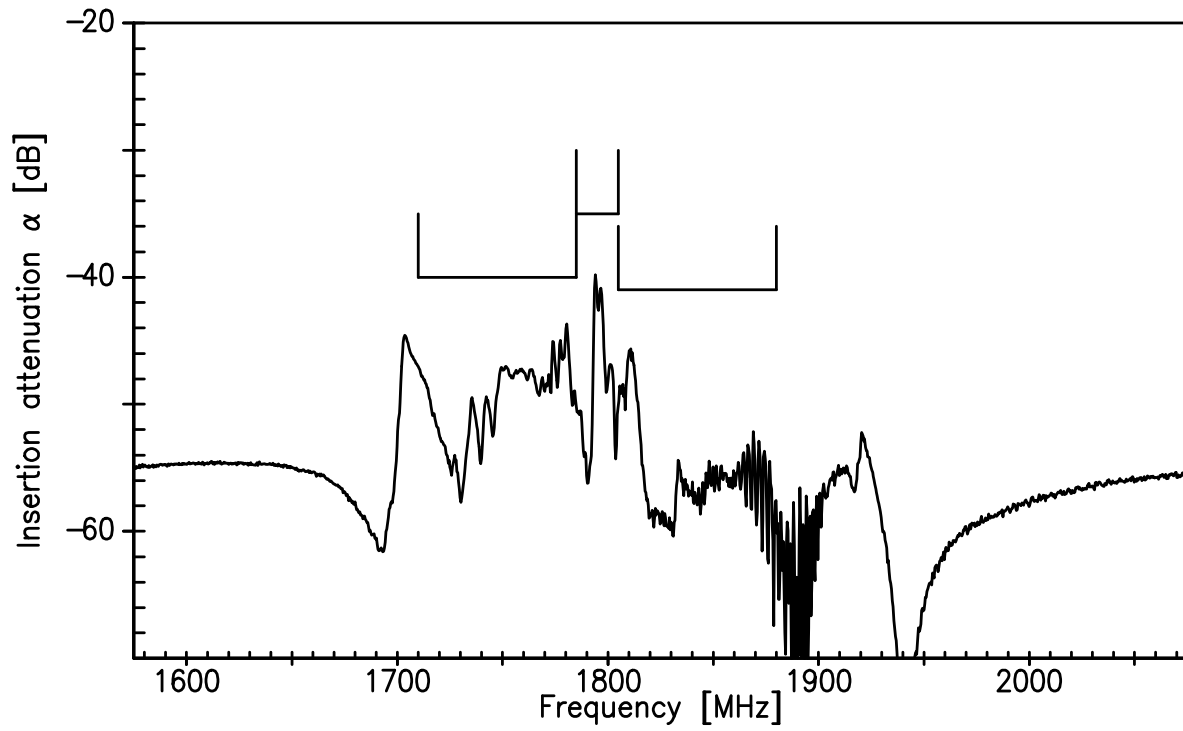
Frequency Response RX-ANT (wideband)



Data sheet



**Frequency Response TX-RX**





**References**

<b>Type</b>	B4411
<b>Ordering code</b>	B39182B4411P810
<b>Marking and package</b>	C61157-A8-A64
<b>Packaging</b>	F61074-V8247-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B4411_NB_UN.s3p, B4411_WB_UN.s3p See file header for port/pin assignment table.
<b>Soldering profile</b>	S_6001
<b>RoHS compatible</b>	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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