



SAW Components

SAW Duplexer

Automotive telematics

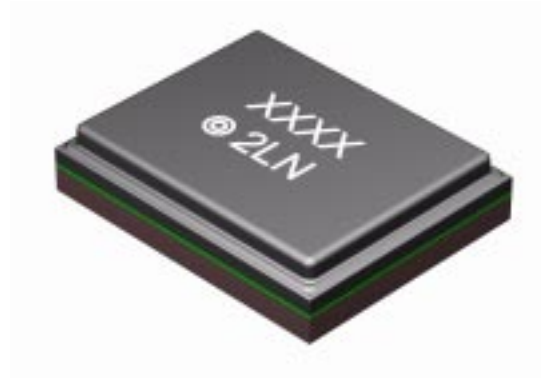
Series/type:	B4406
Ordering code:	B39182B4406P810
Date:	June 13, 2014
Version:	2.3

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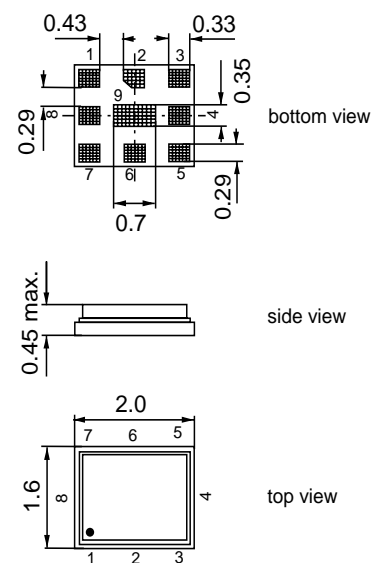
Application

- Low-loss SAW duplexer for Band III systems
- Low insertion attenuation
- Low amplitude ripple
- Usable passband 75 MHz
- Single ended to balanced transformation in Antenna - Rx path
- Impedance transformation 50Ω to 100Ω in Antenna - Rx path
- high Tx - Rx isolation



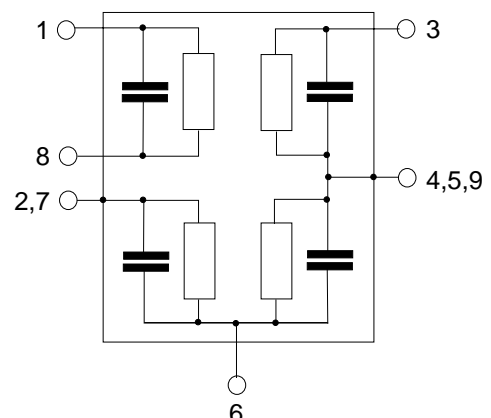
Features

- Package size 2.0 * 1.6 mm²
- 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, 8 Rx output (balanced)
- 6 Antenna
- 2, 4, 5, 7, 9 To be grounded



SAW Components
B4406
SAW Duplexer
1747.5 / 1842.5 MHz
Data sheet

Characteristics

Temperature range for specification:	$T = -30\text{ }^{\circ}\text{C to } +85\text{ }^{\circ}\text{C}$
ANT terminating impedance:	$Z_{\text{ANT}} = 50\text{ }\Omega \parallel 3.9\text{ nH}$
Rx terminating impedance:	$Z_{\text{RX}} = 100\text{ }\Omega \text{ (balanced)} \parallel 12\text{ nH}$
Tx terminating impedance:	$Z_{\text{TX}} = 50\text{ }\Omega$

Characteristics Tx-ANT		min.	typ. @ 25°C	max.	
Center frequency	f_C	–	1747.5	–	MHz
Maximum insertion attenuation	α_{max}				
1714.00 ... 1781.00 MHz		–	2.0	3.1	dB
1710.00 ... 1785.00 MHz		–	2.5	4.1	dB
Amplitude ripple per 5MHz channel	$\Delta\alpha$				
1710.00 ... 1785.00 MHz		–	0.6	1.4	dB
VSWR					
Tx port 1710.00 ... 1785.00 MHz		–	1.5	2.0	
ANT port 1710.00 ... 1785.00 MHz		–	1.5	2.0	
Attenuation	α				
100.00 ... 1565.42 MHz		30	33	–	dB
1565.42 ... 1573.38 MHz		40	46	–	dB
1573.38 ... 1577.46 MHz		42	47	–	dB
1577.46 ... 1585.42 MHz		40	44	–	dB
1597.55 ... 1605.88 MHz		35	39	–	dB
1605.88 ... 1680.00 MHz		20	30	–	dB
1805.00 ... 1880.00 MHz		43	46	–	dB
1920.00 ... 1980.00 MHz		20	30	–	dB
2110.00 ... 2170.00 MHz		27	40	–	dB
2400.00 ... 2500.00 MHz		30	34	–	dB
2620.00 ... 2690.00 MHz		27	31	–	dB

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Tx terminating impedance:	$Z_{\text{TX}} = 50\text{ }\Omega$

Characteristics ANT-Rx		min.	typ. @ 25°C	max.	
Center frequency	f_C	—	1842.5	—	MHz
Maximum insertion attenuation 1805.00 ... 1880.00 MHz	α_{max}	—	3.2	4.4	dB
Amplitude ripple per 5MHz channel 1805.00 ... 1880.00 MHz	$\Delta\alpha$	—	0.7	1.8	dB
Common mode rejection ratio 1805.00 ... 1880.00 MHz		20 ¹⁾	25	—	dB
VSWR					
Rx port 1805.00 ... 1880.00 MHz		—	1.6	2.0	
ANT port 1805.00 ... 1880.00 MHz		—	1.6	2.0	
Attenuation	α				
100.00 ... 1710.00 MHz		35	55	—	dB
1710.00 ... 1785.00 MHz		43	50	—	dB
1965.00 ... 2690.00 MHz		30	52	—	dB

¹⁾ A combination of 10° phase balance and 1 dB amplitude balance corresponds to 19.6 dB CMRR

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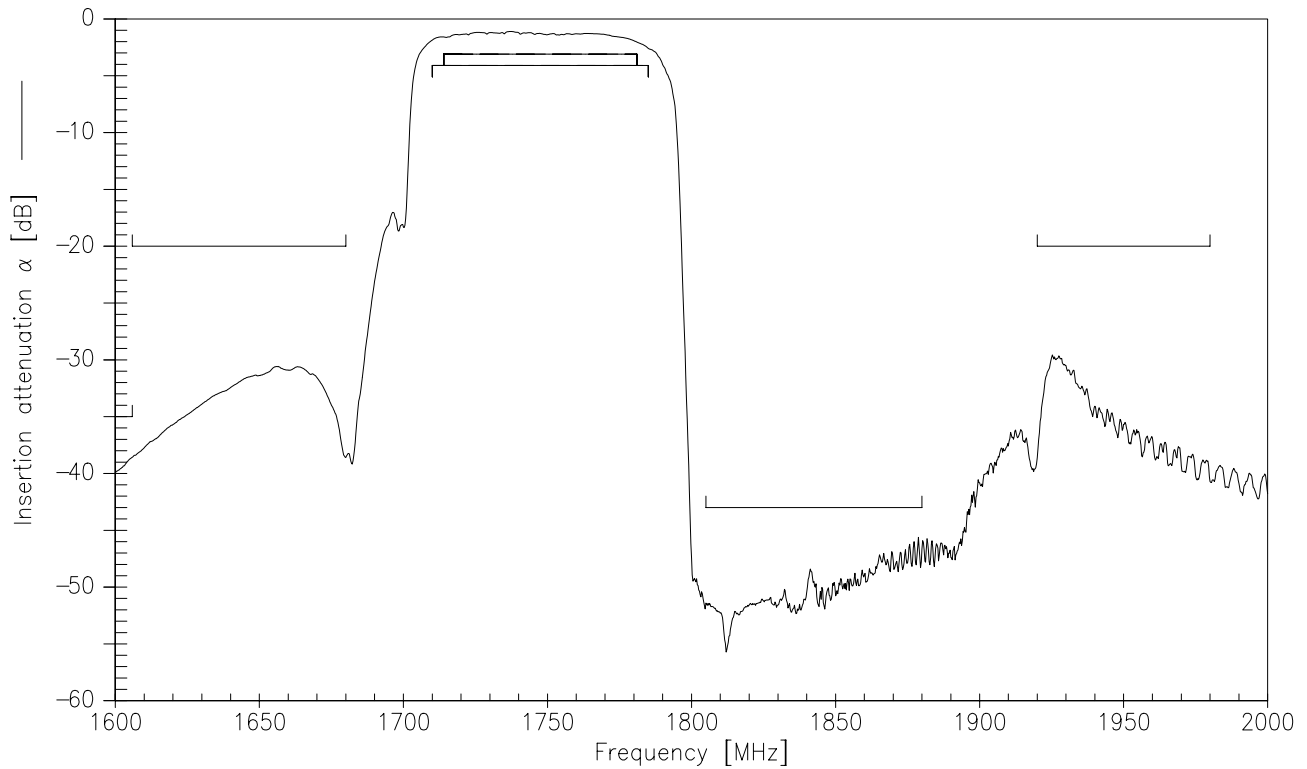
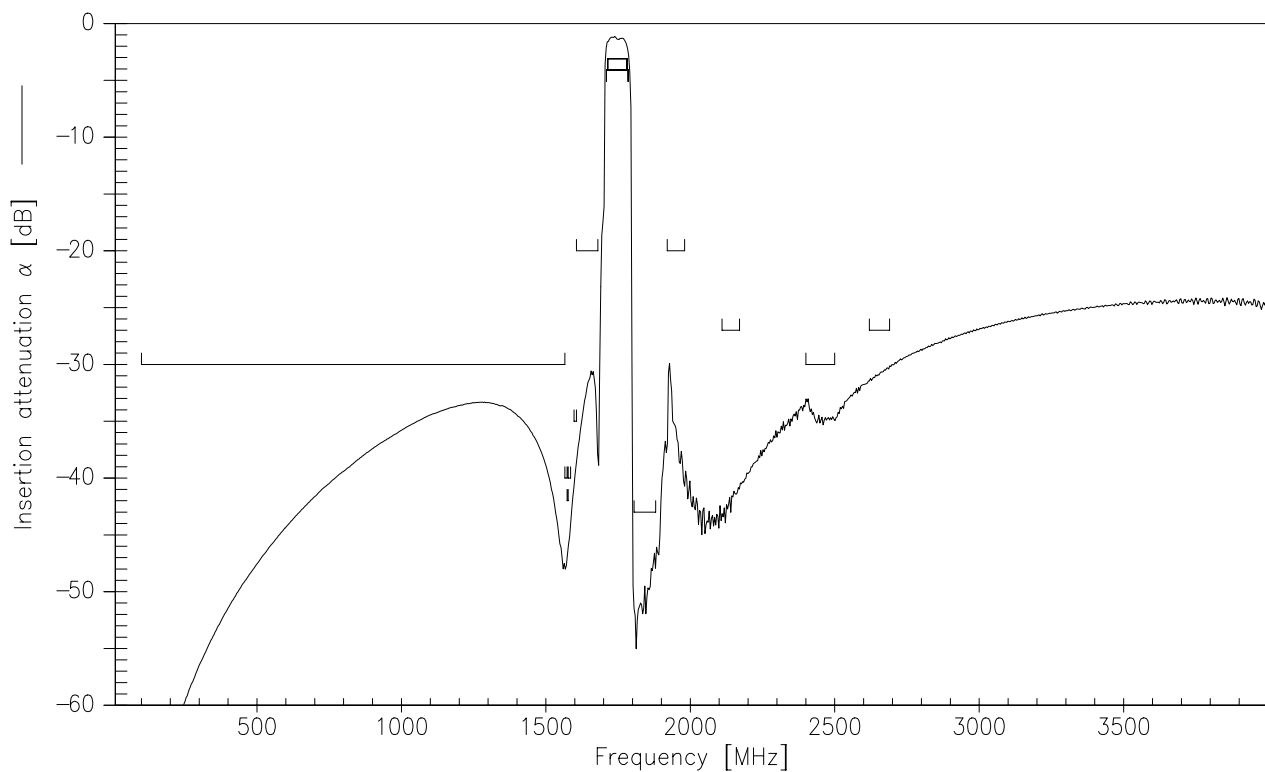
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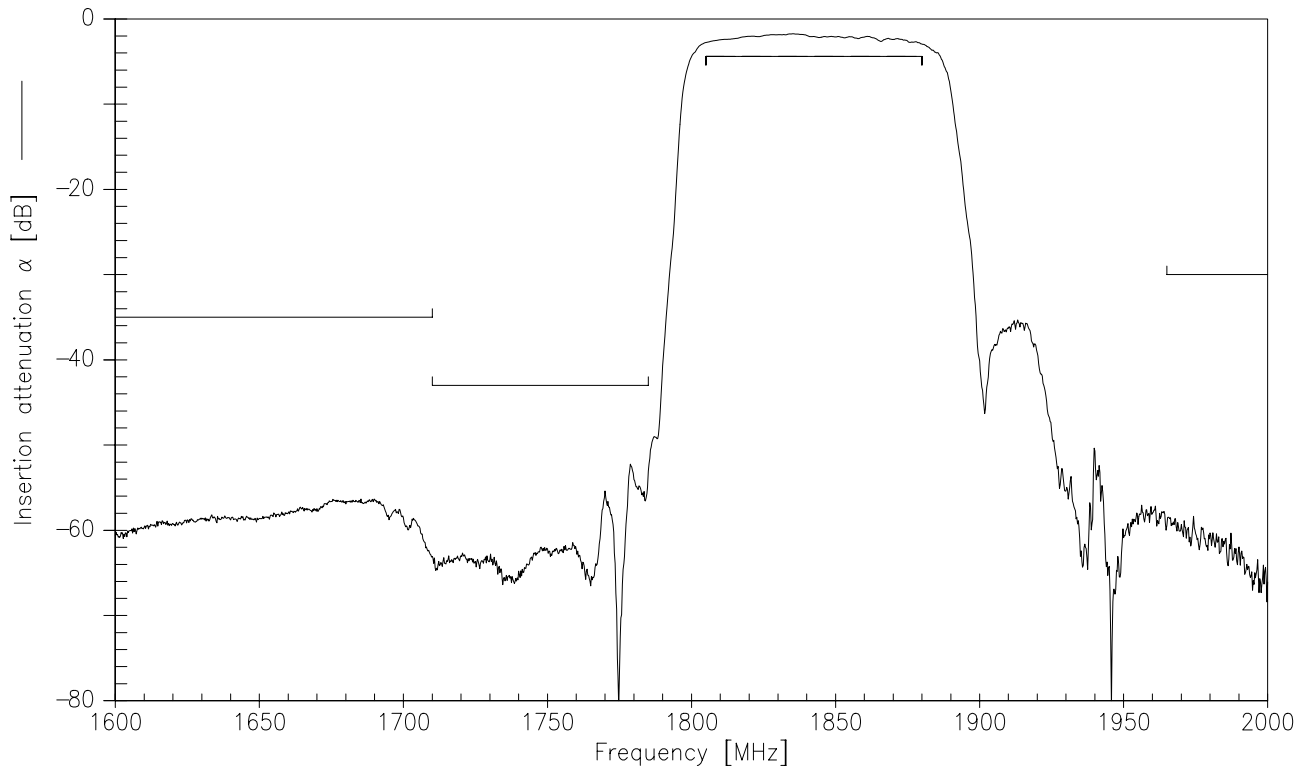
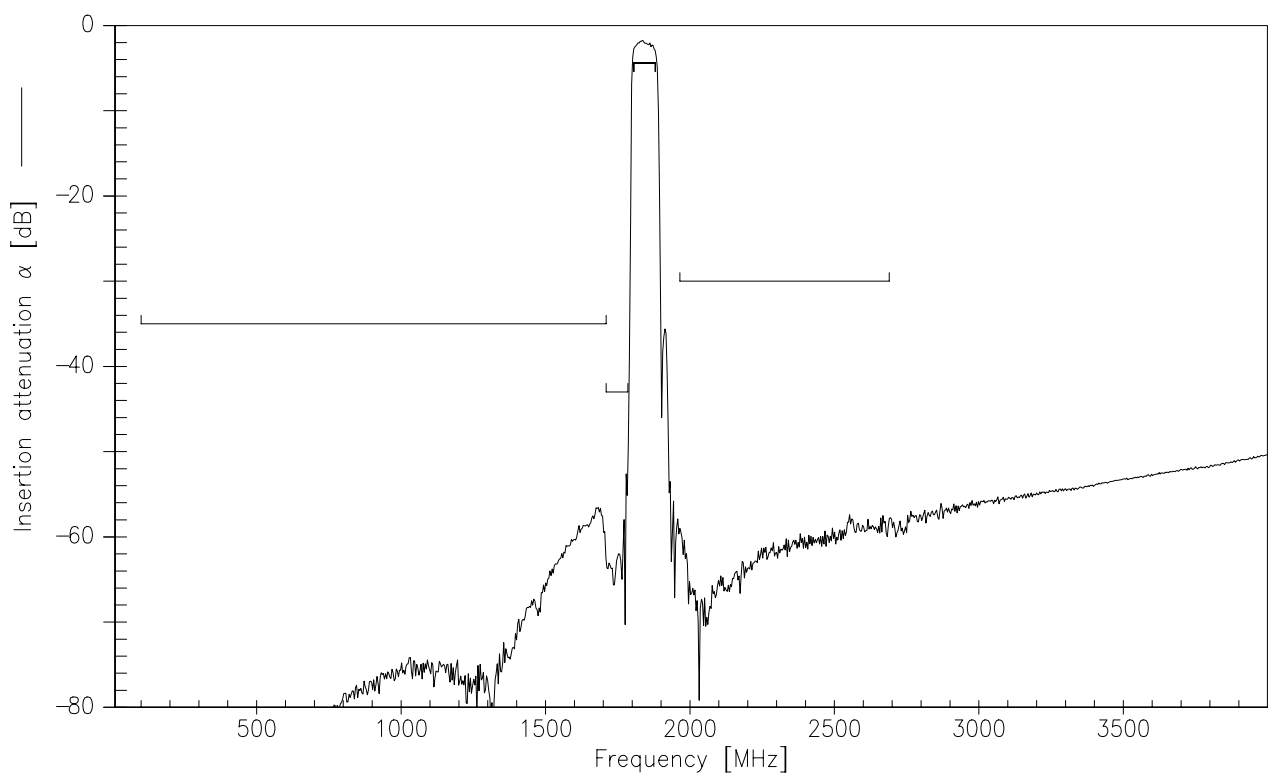
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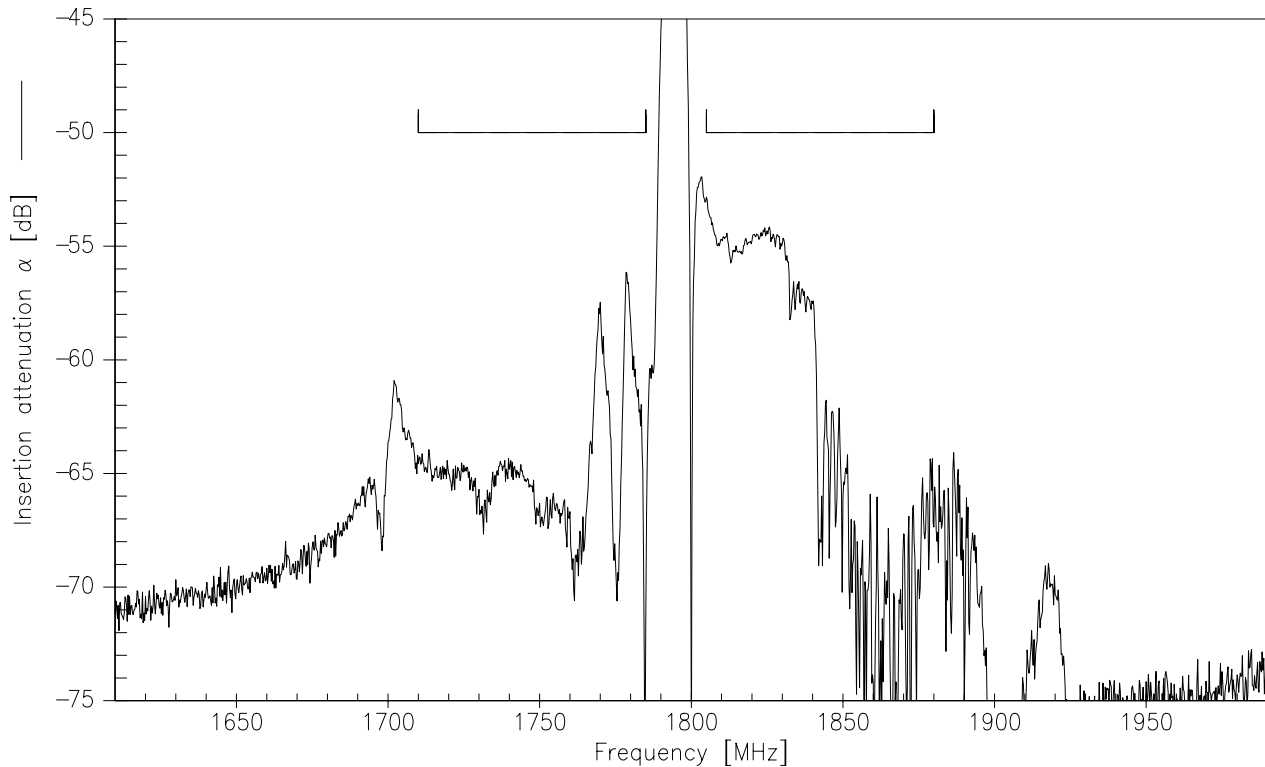
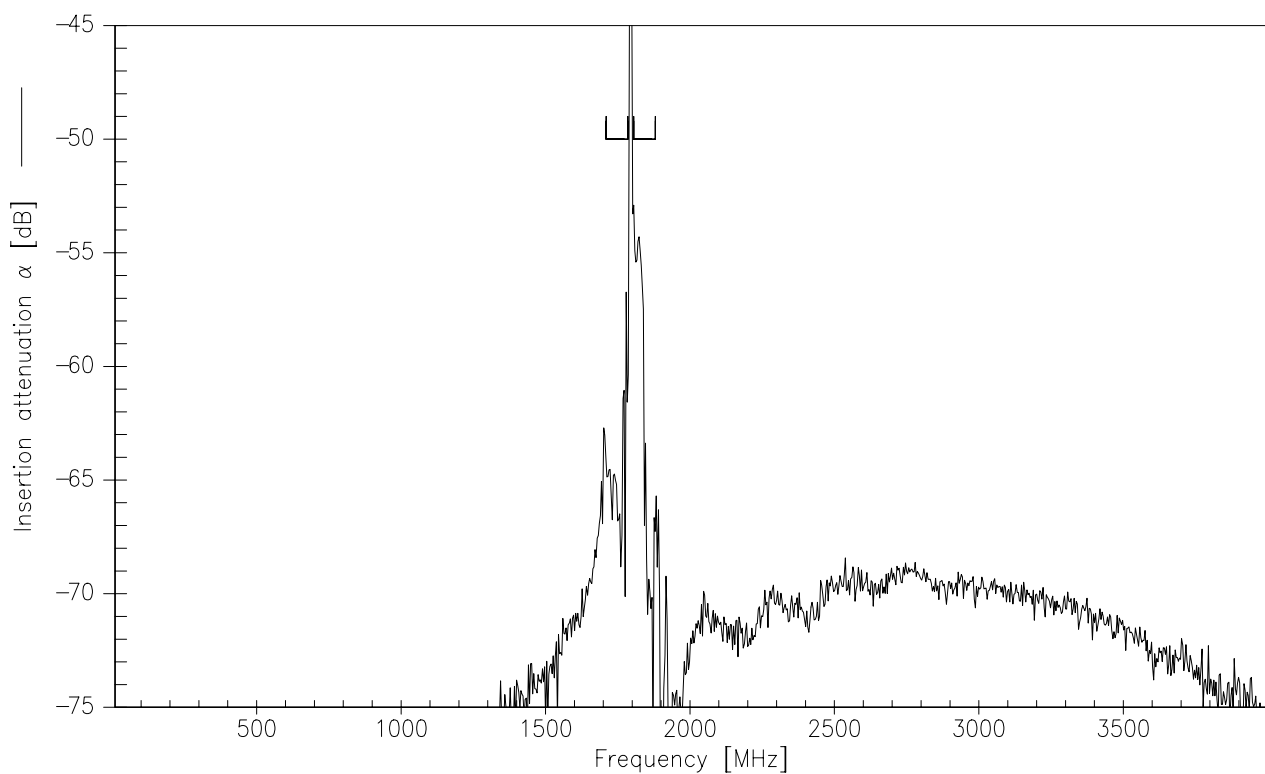
Characteristics Tx-Rx		min.	typ. @ 25°C	max.	
Differential Mode Isolation	α				
	1710.00 ... 1785.00 MHz	50	55	–	dB
	1805.00 ... 1880.00 MHz	50	53	–	dB
Common Mode Isolation					
	1710.00 ... 1785.00 MHz	50	55	–	dB

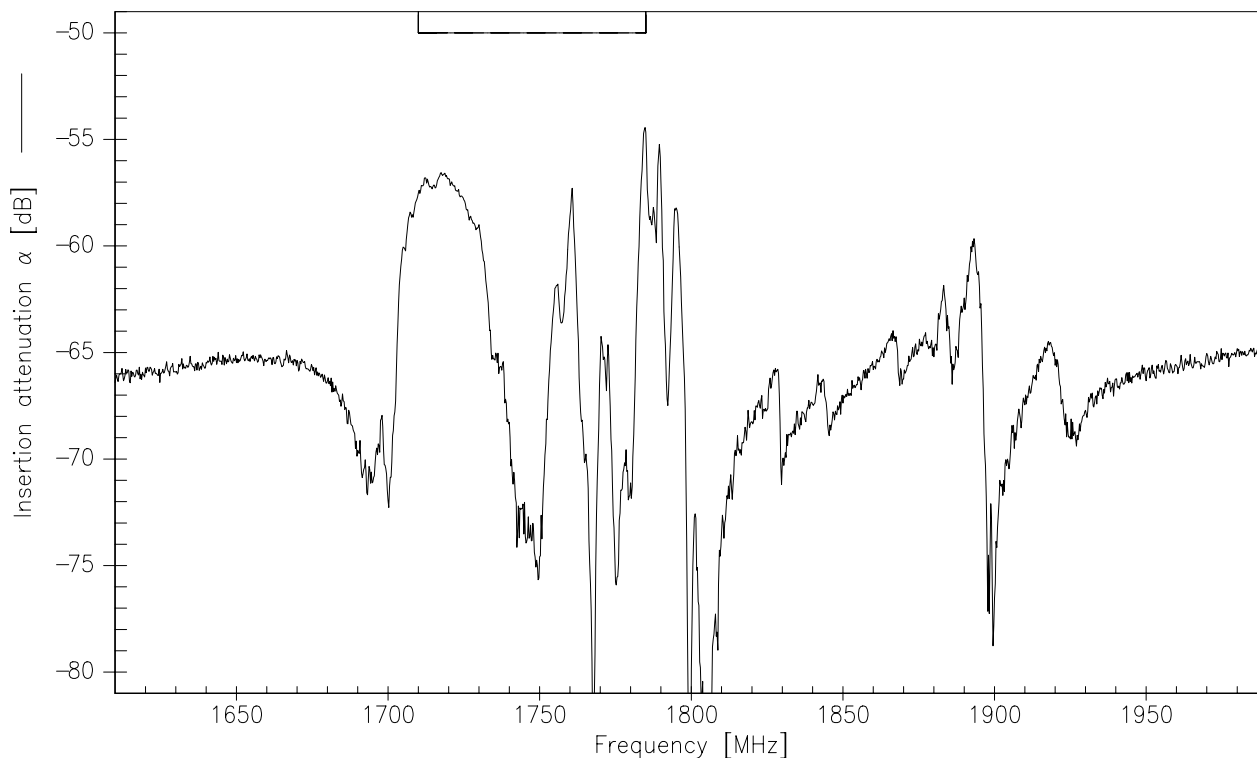
Maximum ratings

Operable temperature range	T	–40/+85	°C	
Storage temperature range	T_{stg}	–40/+85	°C	
DC voltage	V_{DC}	0	V	
Input Power at 1710.0 ... 1785.0 MHz	P_{IN}	29	dBm	} continuous wave $T = 55\text{ }^{\circ}\text{C}, 5000\text{ h}$
elsewhere		10	dBm	


Frequency Response Tx-ANT

Frequency Response Tx-ANT (wideband)



Frequency Response Rx-ANT

Frequency Response Rx-ANT (wideband)



Frequency Response Tx-Rx (differential mode)

Frequency Response Tx-Rx (differential mode, wideband)



Frequency Response Tx-Rx (common mode)

Frequency Response Common Mode Rejection Ratio


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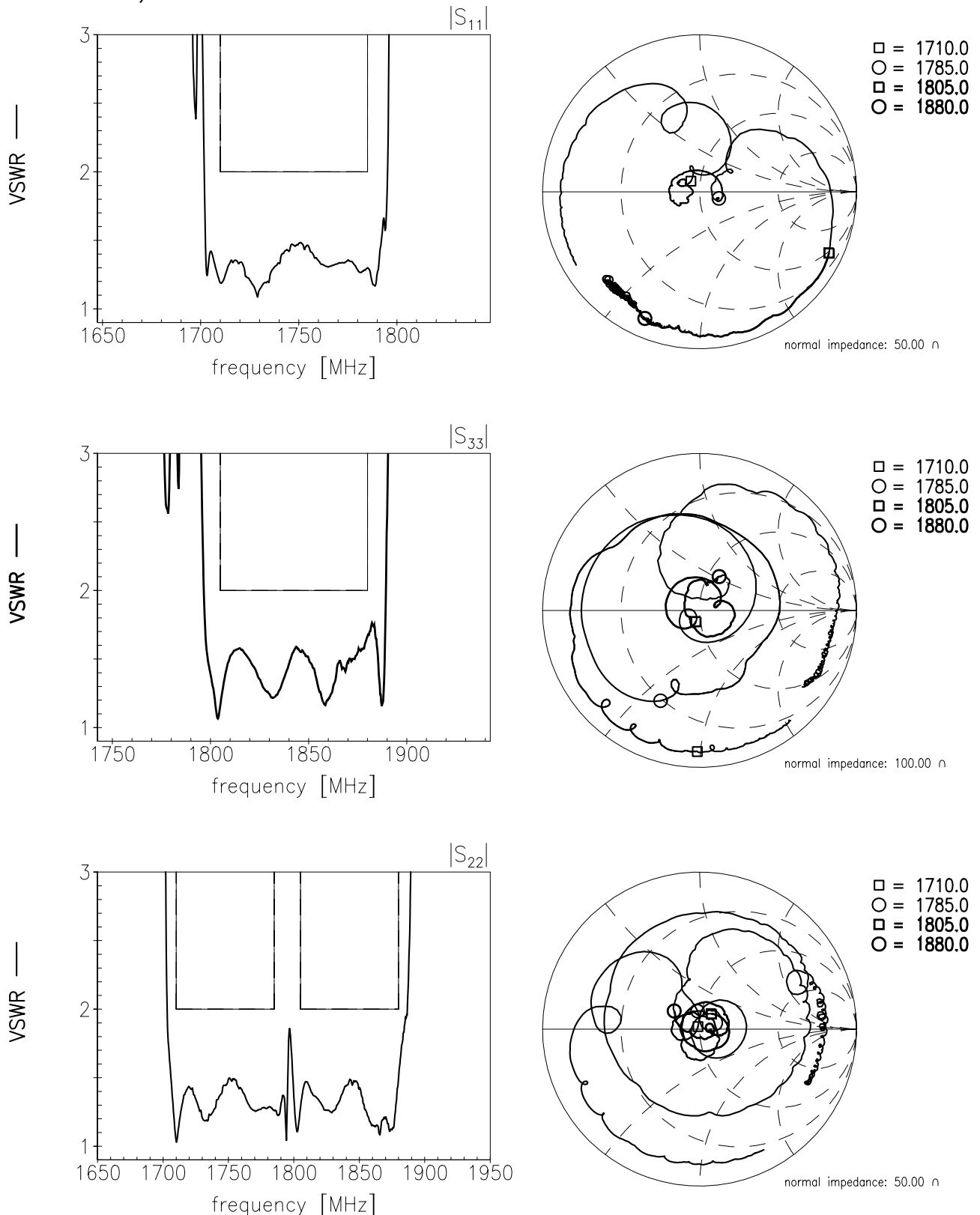
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VSWR at Tx-, Rx- and Antenna



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References

Type	B4406
Ordering code	B39182B4406P810
Marking and Package	C61157-A8-A64
Packaging	F61074-V8247-Z000
Date Codes	L_1126
S-Parameters	B4406_NB_UN.s4p, B4406_WB_UN.s4p See file header for pin/port 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 8 th , 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.
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.
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