



RF360  
Europe GmbH

## SAW Components

### SAW Tx 2in1 Input/Output Diplex Filter

Band 34 + 39 Post PA

Series/type: B9919  
Ordering code: B39202B9919P810

Date: July 29, 2015  
Version: 2.5

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<b>Series/type:</b>	<b>B9919</b>
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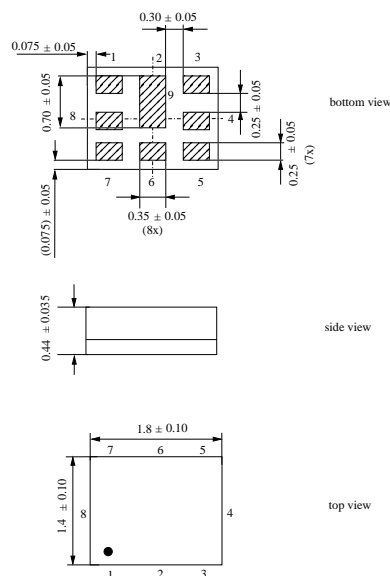
Data sheet

**Application**

- Band 34 + 39 2in1 Post PA Tx filter
- Low-loss 2in1 RF filter for mobile telephone Band 34 + 39 systems
- Usable passband:
  - Band 39 (1900.0): 40 MHz
  - Band 34 (2017.5): 15 MHz
- Unbalanced to unbalanced operation for both filters
- Low amplitude ripple


**Features**

- Package size 1.8 x 1.4 mm<sup>2</sup>
- Max. package height 0.475 mm
- RoHS compatible
- Package for **Surface Mount Technology (SMT)**
- Ni, Au-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitivity Level 3**


**Pin configuration**

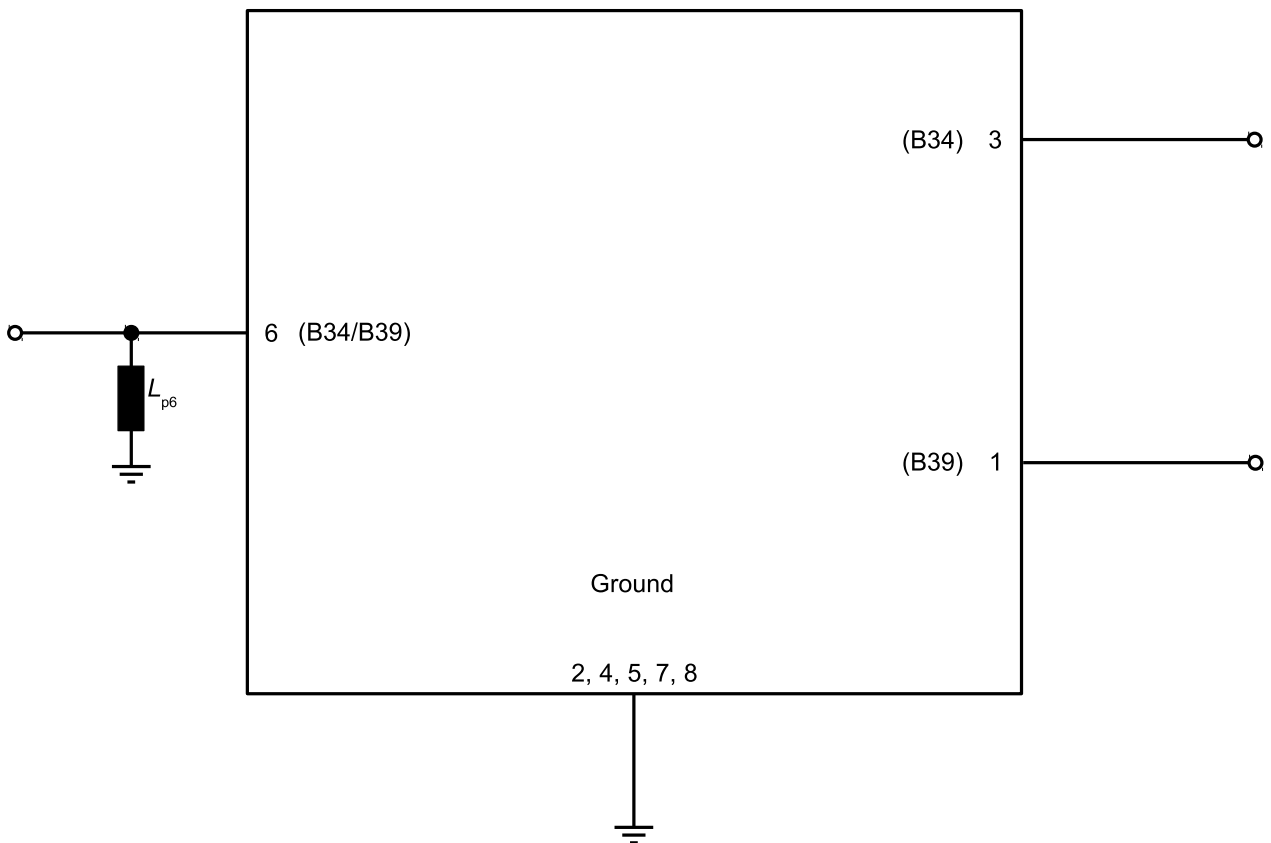
- 6 Band 34 / 39 Input/Output
- 1 Band 39 Output/Input
- 3 Band 34 Output/Input
- 2, 4, 5, 7,8 To be grounded

Data sheet



Matching Circuit

$L_{p6} = 6.2 \text{ nH}$



Data sheet


**Characteristics (Band 39)**

Temperature range for specification:	T	=	-30 °C to +90 °C
Terminating impedance pin 6:	Z <sub>6</sub>	=	50 Ω    6.2nH
Terminating impedance pin 1:	Z <sub>1</sub>	=	50 Ω
Terminating impedance pin 3:	Z <sub>3</sub>	=	50 Ω

Characterisitcs	min.	typ. @ 25 °C	max.	
<b>Center frequency</b> $f_C$	—	1900.0	—	MHz
<b>Maximum insertion attenuation</b> $\alpha_{max}$ 1880.0 ... 1920.0 MHz	—	1.3	2.0	dB
<b>Amplitude ripple (p-p)</b> $\Delta\alpha$ 1880.0 ... 1920.0 MHz	—	0.4	1.1	dB
<b>VSWR Common - Pin 6 port</b> 1880.0 ... 1920.0 MHz	—	1.4	1.7	
<b>VSWR Band 39 - Pin 1 port</b> 1880.0 ... 1920.0 MHz	—	1.4	1.7	
<b>Attenuation</b> $\alpha$				
10.0 ... 869.0 MHz	35	42	—	dB
869.0 ... 894.0 MHz	38	41	—	dB
925.0 ... 960.0 MHz	38	40	—	dB
1805.0 ... 1830.0 MHz	47	51	—	dB
1830.0 ... 1850.0 MHz	35	47	—	dB
2110.0 ... 2170.0 MHz	35	38	—	dB
2400.0 ... 2500.0 MHz	35	39	—	dB
2496.0 ... 2690.0 MHz	35	40	—	dB
3760.0 ... 3840.0 MHz	35	55	—	dB
5640.0 ... 5760.0 MHz	30	37	—	dB

Data sheet


**Characteristics (Band 34)**

Temperature range for specification:	T	=	-30 °C to +90 °C
Terminating impedance pin 6:	Z <sub>6</sub>	=	50 Ω    6.2nH
Terminating impedance pin 1:	Z <sub>1</sub>	=	50 Ω
Terminating impedance pin 3:	Z <sub>3</sub>	=	50 Ω

Characterisitcs		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	f <sub>C</sub>	—	2017.5	—	MHz
<b>Maximum insertion attenuation</b>	α <sub>max</sub>	—	1.4	1.9	dB
2010.0 ... 2025.0 MHz					
<b>Amplitude ripple (p-p)</b>	Δα	—	0.3	0.8	
2010.0 ... 2025.0 MHz					
<b>VSWR Common - Pin 6 port</b>		—	1.2	1.7	
2010.0 ... 2025.0 MHz					
<b>VSWR Band 34 - Pin 3 port</b>		—	1.2	1.7	
2010.0 ... 2025.0 MHz					
<b>Attenuation</b>	α				
10.0 ... 869.0 MHz		35	44	—	dB
869.0 ... 894.0 MHz		40	44	—	dB
925.0 ... 960.0 MHz		40	43	—	dB
1805.0 ... 1850.0 MHz		35	48	—	dB
2110.0 ... 2170.0 MHz		40	47	—	dB
2400.0 ... 2500.0 MHz		35	49	—	dB
4020.0 ... 4050.0 MHz		30	34	—	dB
6030.0 ... 6075.0 MHz		20	30	—	dB

Data sheet


**Maximum ratings**

Storage temperature range	$T_{stg}$	-40/+85	°C	
DC voltage	$V_{DC}$	5 <sup>1)</sup>	V	
ESD voltage	$V_{ESD}$	50 <sup>2)</sup>	V	Machine Model
		300 <sup>3)</sup>	V	Human Body Model
		600 <sup>4)</sup>	V	Charged Device Model
				source and load impedance 50 $\Omega$
Input power applied on any pin 1,3 or 6	$P_{IN}$			} LTE TDD 5MHz uplink signal } $T = 55^{\circ}\text{C}$ , 5000 h
		1880.0 - 1920.0 MHz	29 dBm	
		2010.0 - 2025.0 MHz	29 dBm	
		elsewhere	10 dBm	

1) 168h Damp Heat Steady State acc. to IEC 60068-2-67 Cy.

2) acc. to JESD22-A115B (MM - Machine Model), 10 negative and 10 positive pulses.

3) acc. to JESD22-A114F (HBM - Human Body Model) , 1 negative &amp; 1 positive pulses.

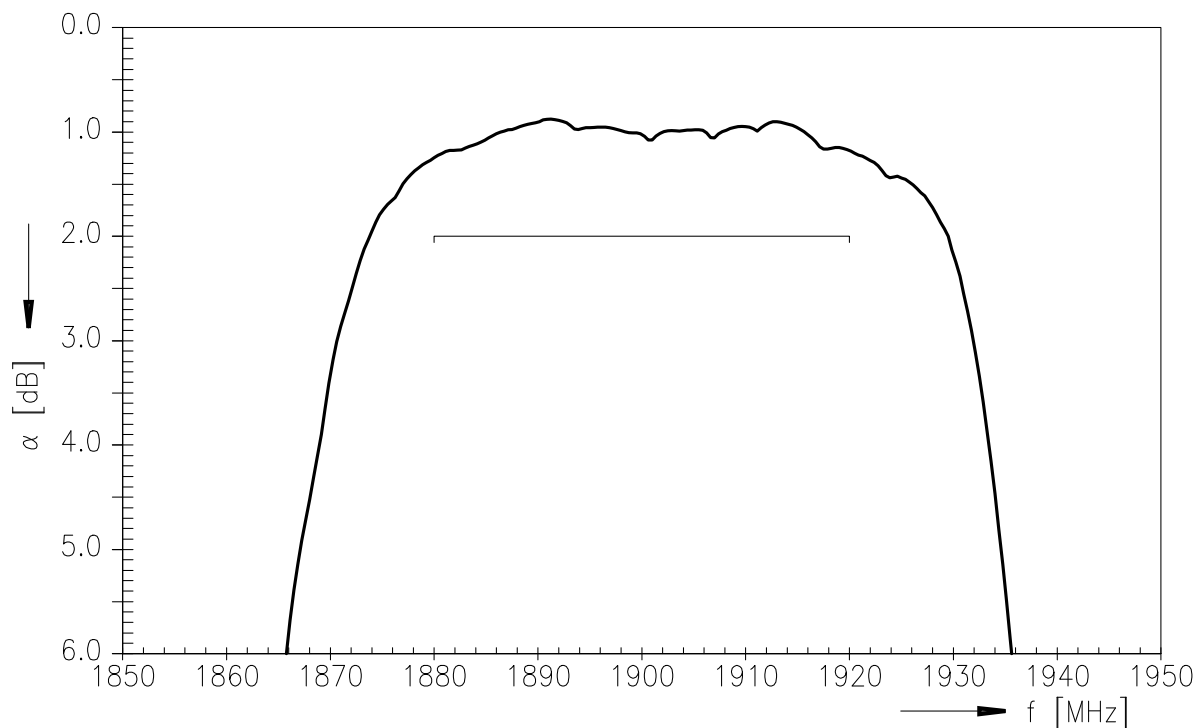
4) acc. to JESD22-C101C (CDM-Field Induced Charged Device Model) , 3 negative &amp; 3 positive pulses.



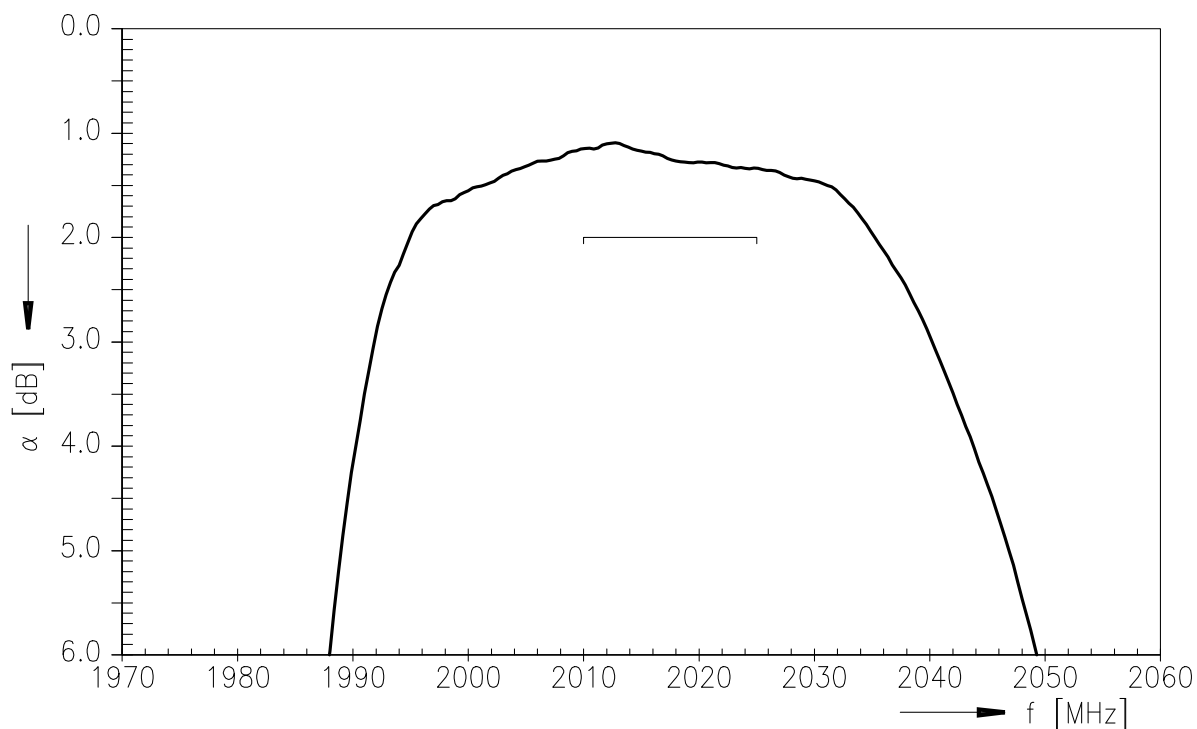
Data sheet



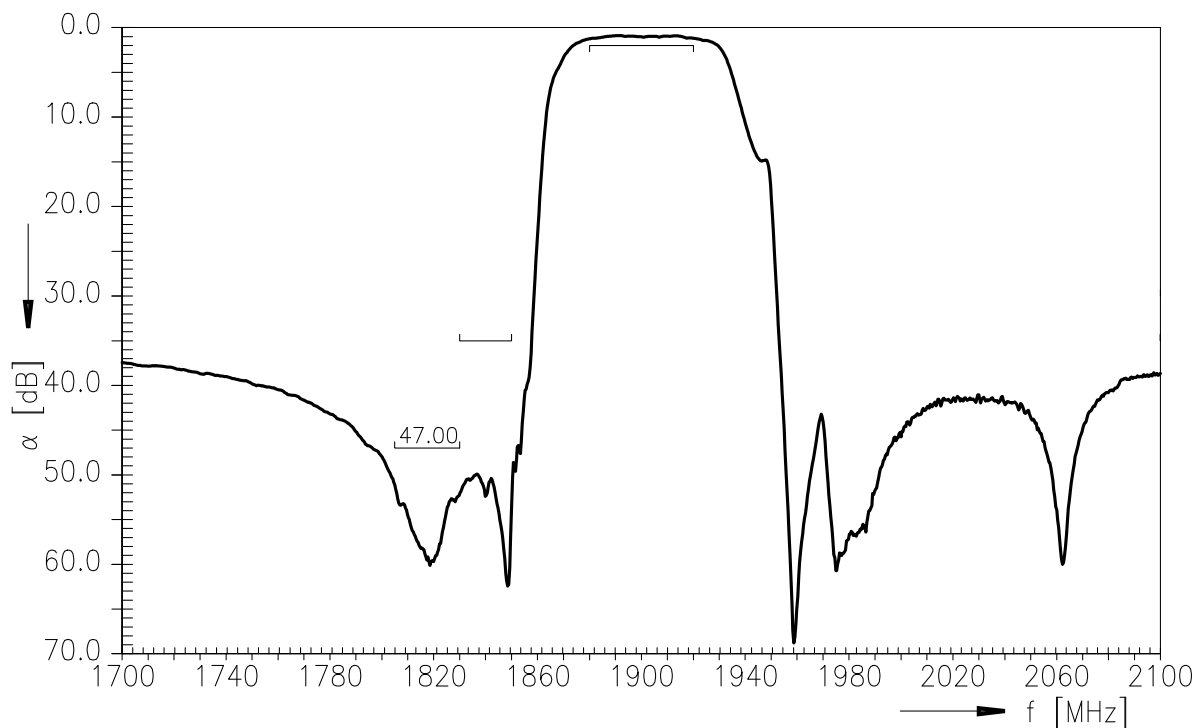
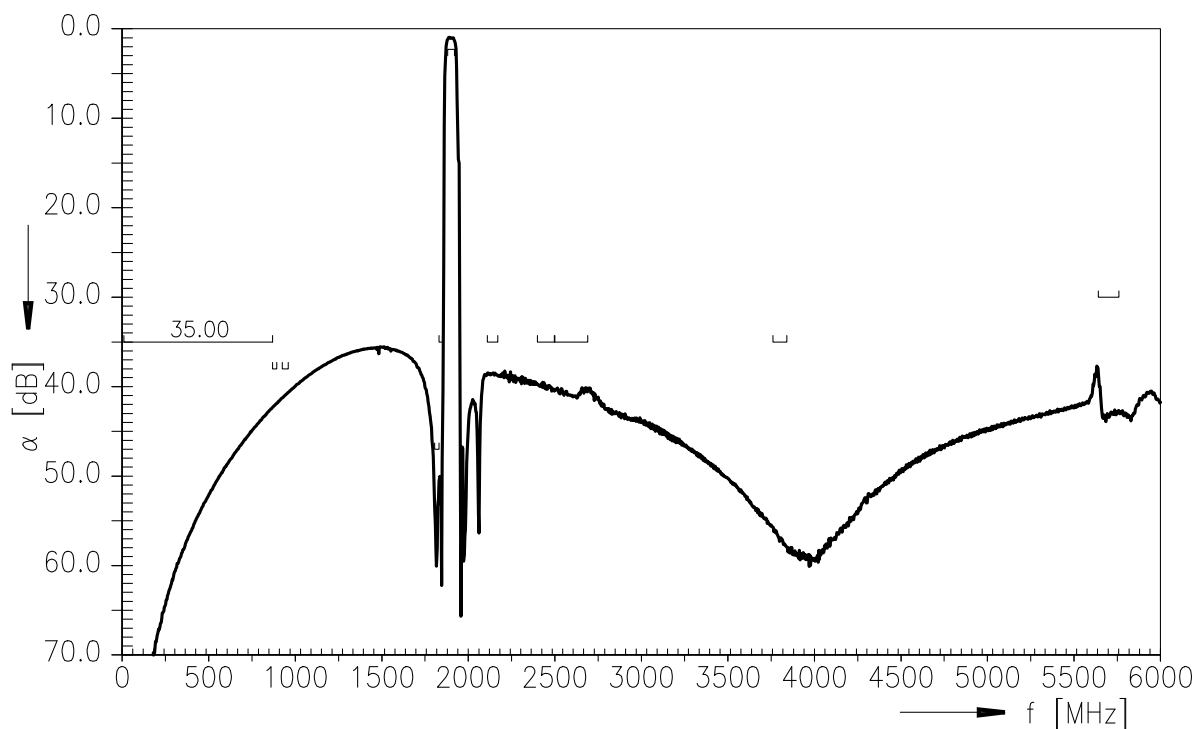
Frequency response Band 39 (passband)



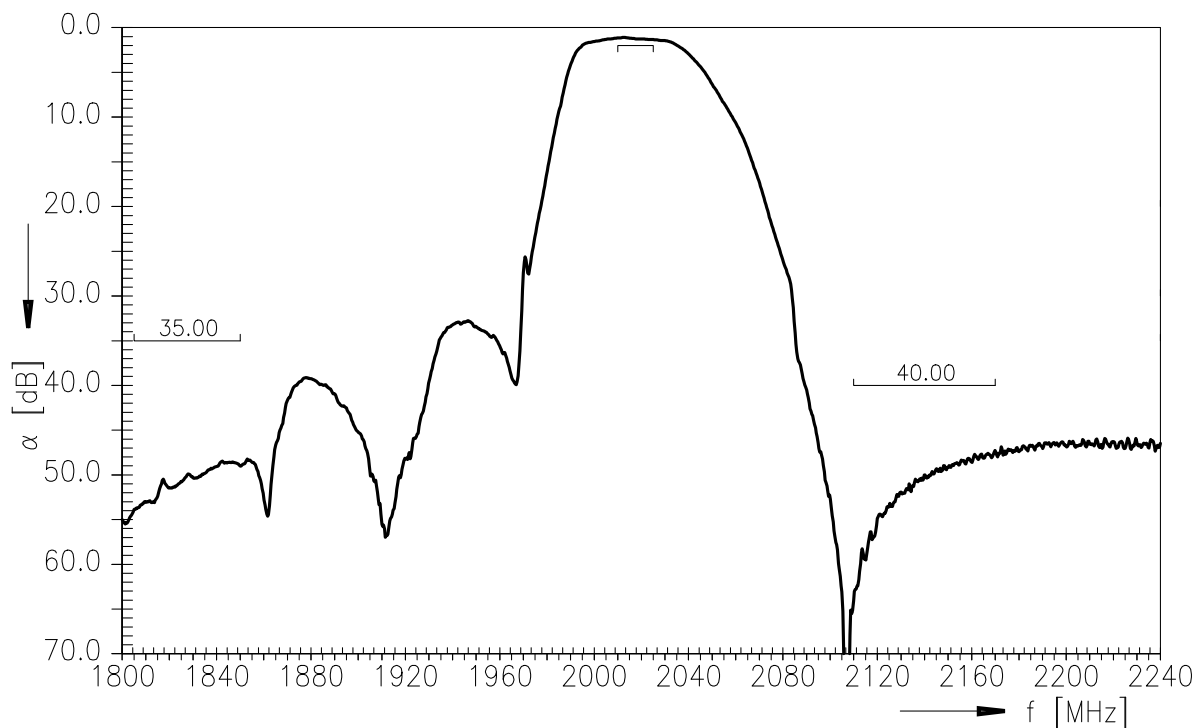
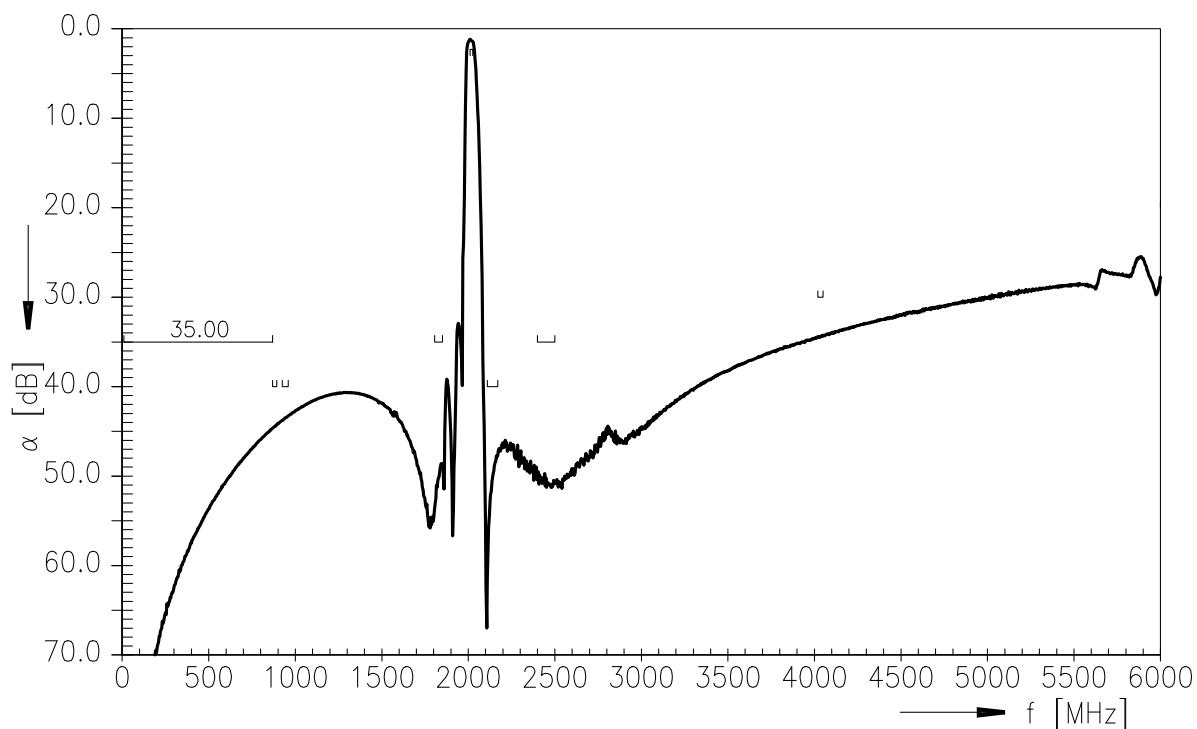
Frequency response Band 34 (passband)



Data sheet


**Frequency response Band 39**

**Frequency response Band 39 (wideband)**


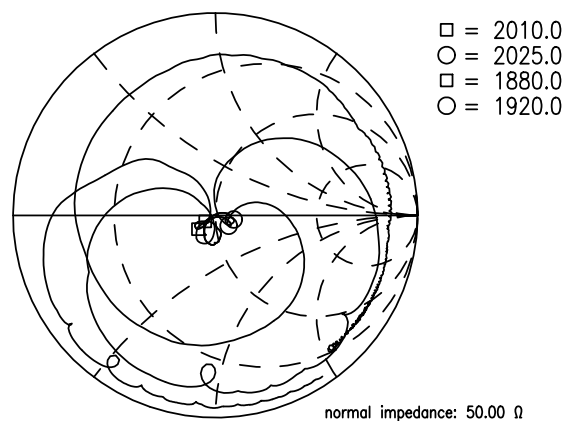
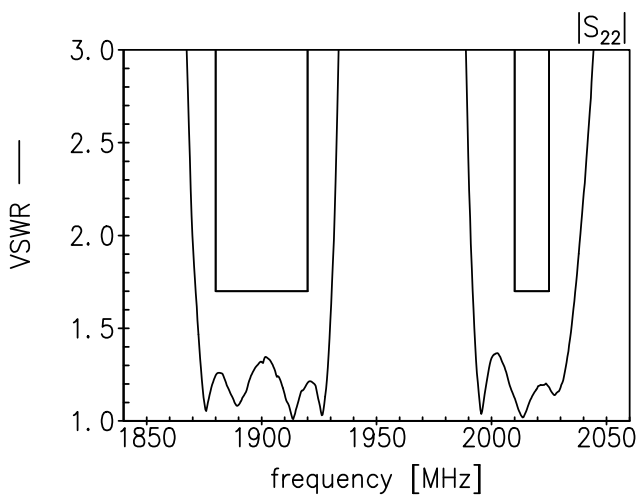
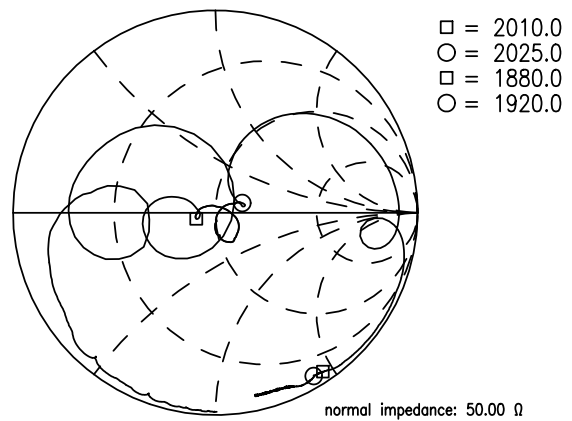
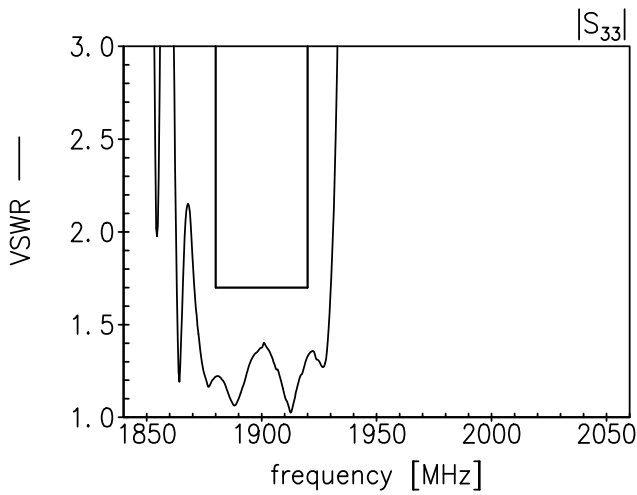
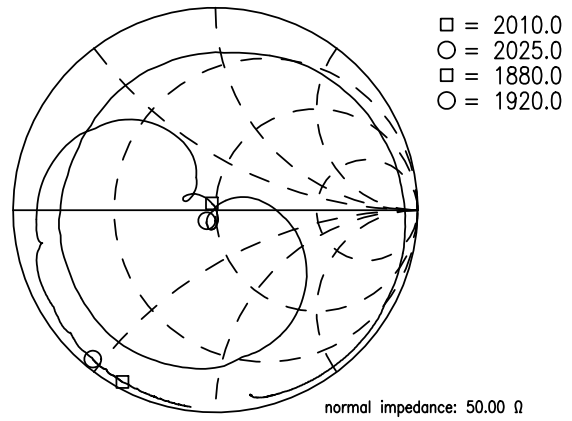
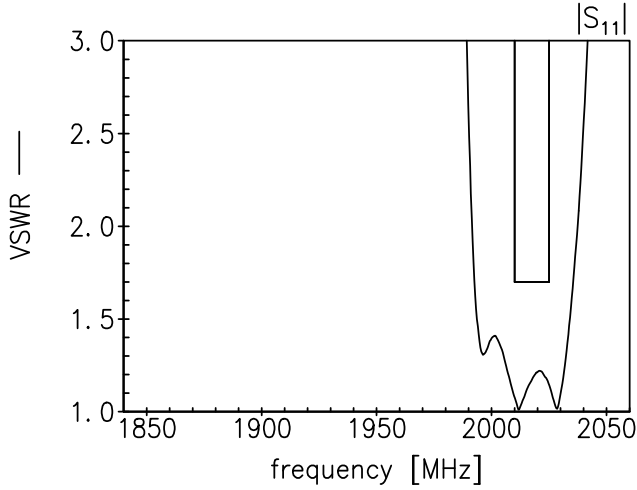
Data sheet


**Frequency response Band 34**

**Frequency response Band 34 (wideband)**


Data sheet



**VSWR      Band 34 - Pin 3 port      Band 39 - Pin 1 port      Common - Pin 6 port**



Data sheet



References

<b>Type</b>	B9919
<b>Ordering code</b>	B39202B9919P810
<b>Marking and package</b>	C61157-A8-A207
<b>Packaging</b>	F61074-V8259-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B9919_NB.s3p, B9919_WB.s3p See file header for pin/port assignment.
<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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