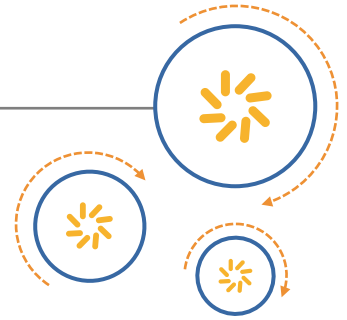




RF360 Europe GmbH

A Qualcomm – TDK Joint Venture



SAW Components

SAW Tx 2in1 Input/Output Diplex Filter

Band 34 + 39 Post PA

Series/type:	B9919
Ordering code:	B39202B9919P810
DCN:	80-PA243-38 Rev. A

Date:	February 3, 2017
Version:	2.5

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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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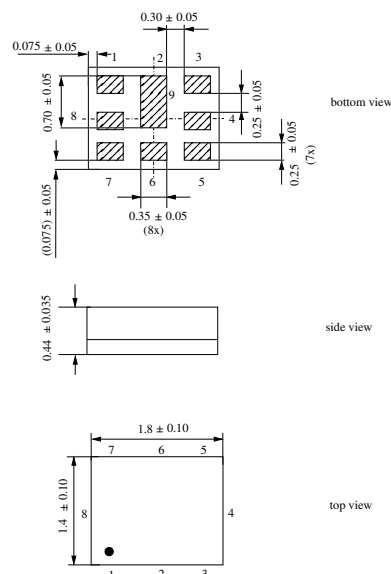
Data sheet

Application

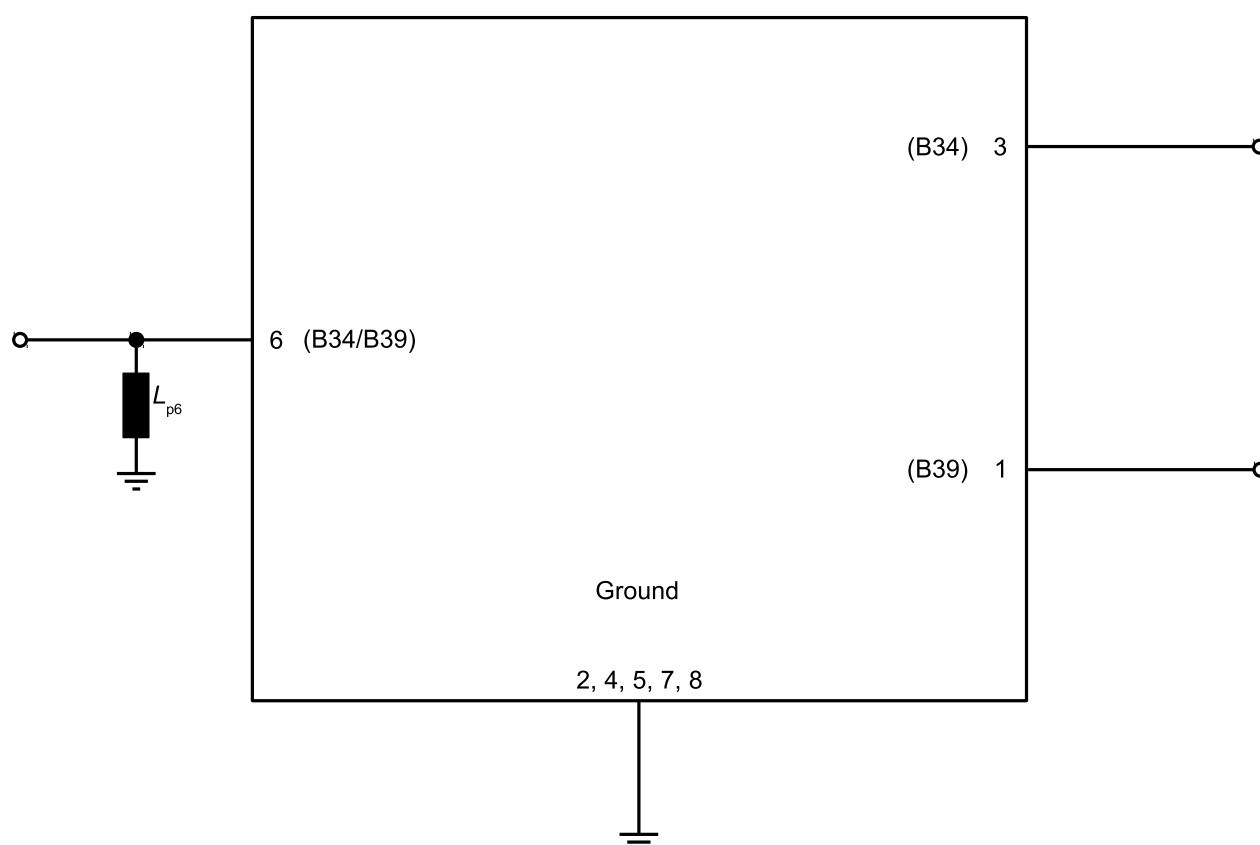
- Band 34 + 39 2in1 Post PA Tx filter
- Low-loss 2in1 RF filter for mobile telephone
Band 34 + 39 systems
- Usable passband:
Band 39 (1900.0): 40 MHz
Band 34 (2017.5): 15 MHz
- Unbalanced to unbalanced operation for both filters
- Low amplitude ripple


Features

- Package size 1.8 x 1.4 mm²
- 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
SMD
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 ₆	=	50 Ω 6.2nH
Terminating impedance pin 1:	Z ₁	=	50 Ω
Terminating impedance pin 3:	Z ₃	=	50 Ω

Characterisitcs	min.	typ. @ 25 °C	max.	
Center frequency f_C	—	1900.0	—	MHz
Maximum insertion attenuation $\alpha_{\max}$ 1880.0 ... 1920.0 MHz	—	1.3	2.0	dB
Amplitude ripple (p-p) $\Delta\alpha$ 1880.0 ... 1920.0 MHz	—	0.4	1.1	dB
VSWR Common - Pin 6 port 1880.0 ... 1920.0 MHz	—	1.4	1.7	
VSWR Band 39 - Pin 1 port 1880.0 ... 1920.0 MHz	—	1.4	1.7	
Attenuation α				
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 ₆	=	50 Ω 6.2nH
Terminating impedance pin 1:	Z ₁	=	50 Ω
Terminating impedance pin 3:	Z ₃	=	50 Ω

Characterisitcs		min.	typ. @ 25 °C	max.	
Center frequency	f _C	—	2017.5	—	MHz
Maximum insertion attenuation	α _{max}				
2010.0 ... 2025.0 MHz		—	1.4	1.9	dB
Amplitude ripple (p-p)	Δα				
2010.0 ... 2025.0 MHz		—	0.3	0.8	dB
VSWR Common - Pin 6 port					
2010.0 ... 2025.0 MHz		—	1.2	1.7	
VSWR Band 34 - Pin 3 port					
2010.0 ... 2025.0 MHz		—	1.2	1.7	
Attenuation	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 ¹⁾	V	
ESD voltage	V_{ESD}	50 ²⁾	V	Machine Model
		300 ³⁾	V	Human Body Model
		600 ⁴⁾	V	Charged Device Model
Input power applied on any pin 1,3 or 6	P_{IN}			source and load impedance 50 Ω
1880.0 - 1920.0 MHz		29	dBm	} LTE TDD 5MHz uplink signal $T = 55^\circ\text{C}$, 5000 h
2010.0 - 2025.0 MHz		29	dBm	
elsewhere		10	dBm	

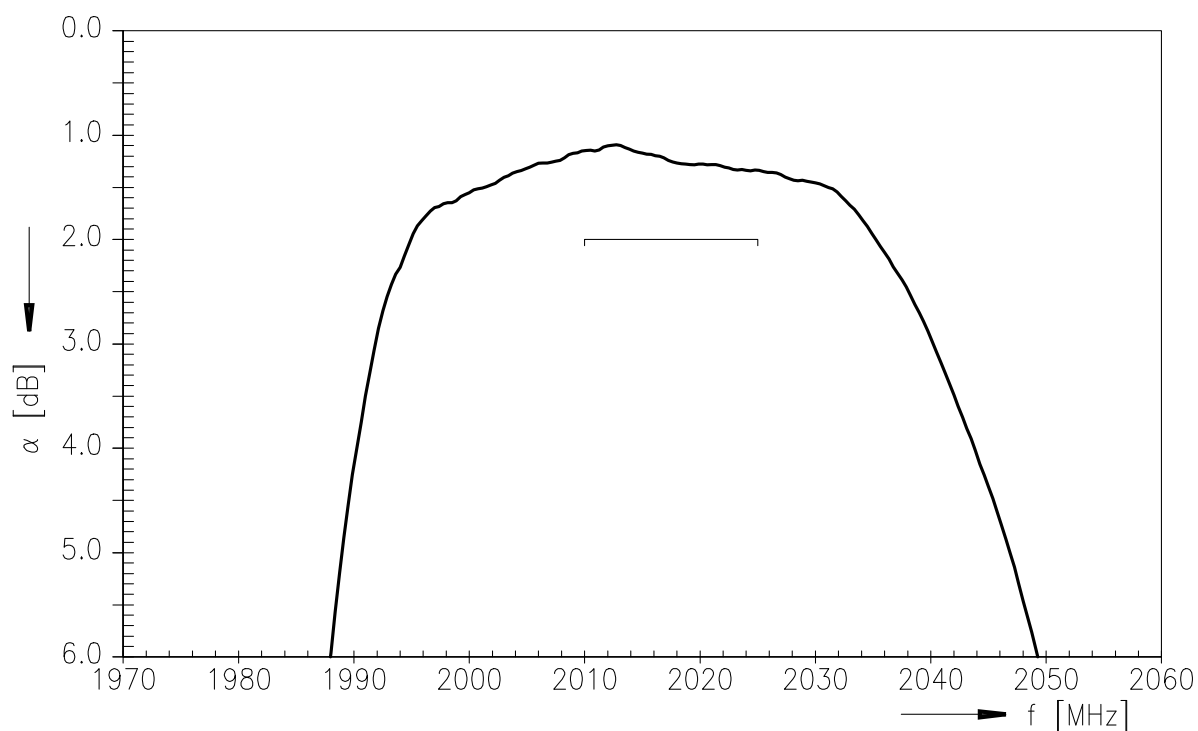
¹⁾ 168h Damp Heat Steady State acc. to IEC 60068-2-67 Cy.

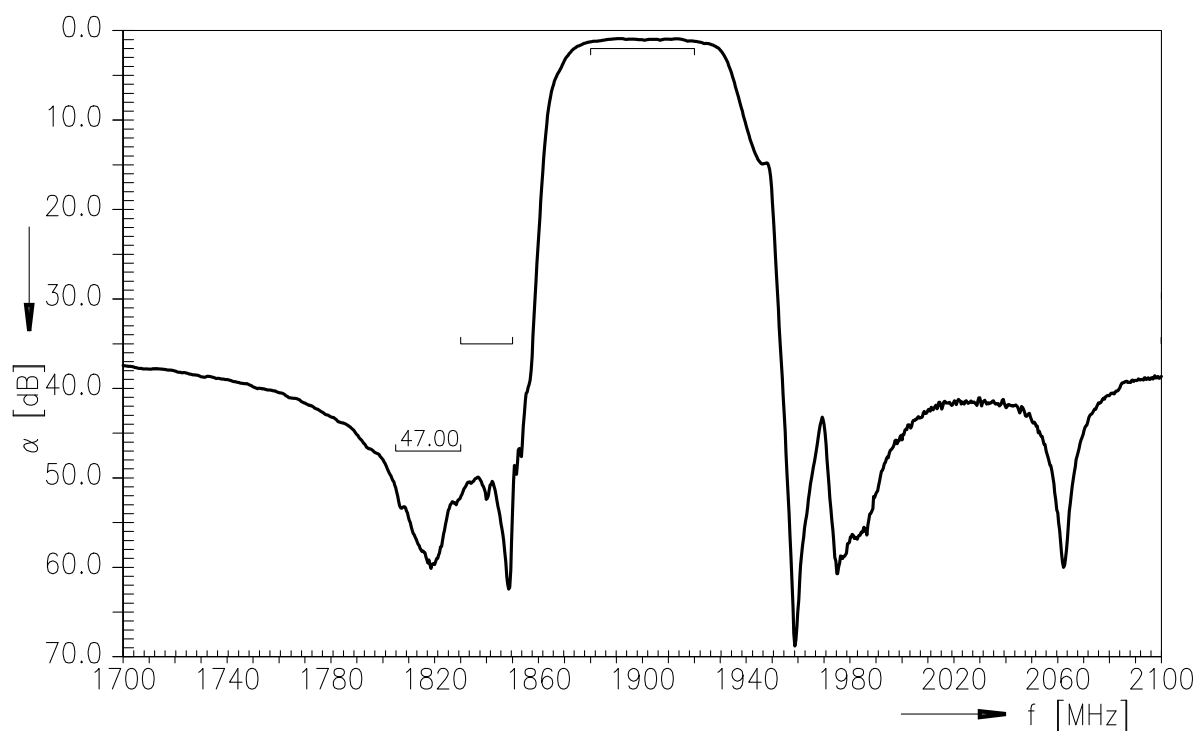
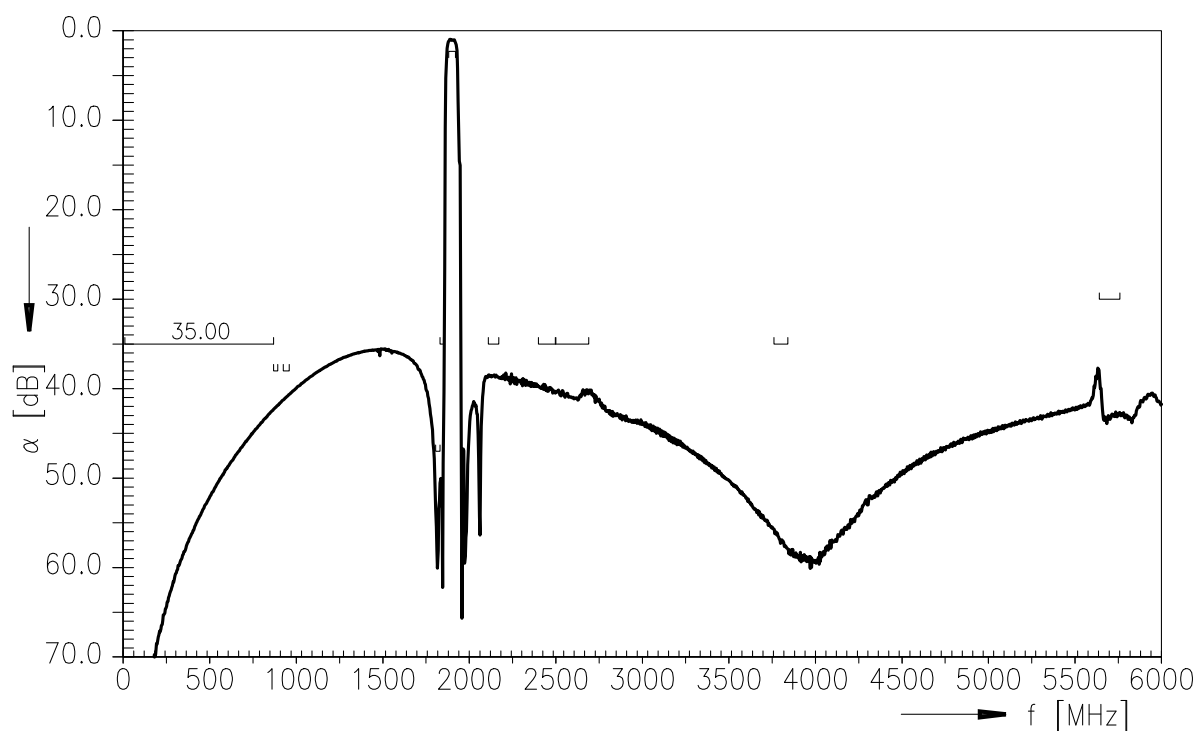
²⁾ acc. to JESD22-A115B (MM - Machine Model), 10 negative and 10 positive pulses.

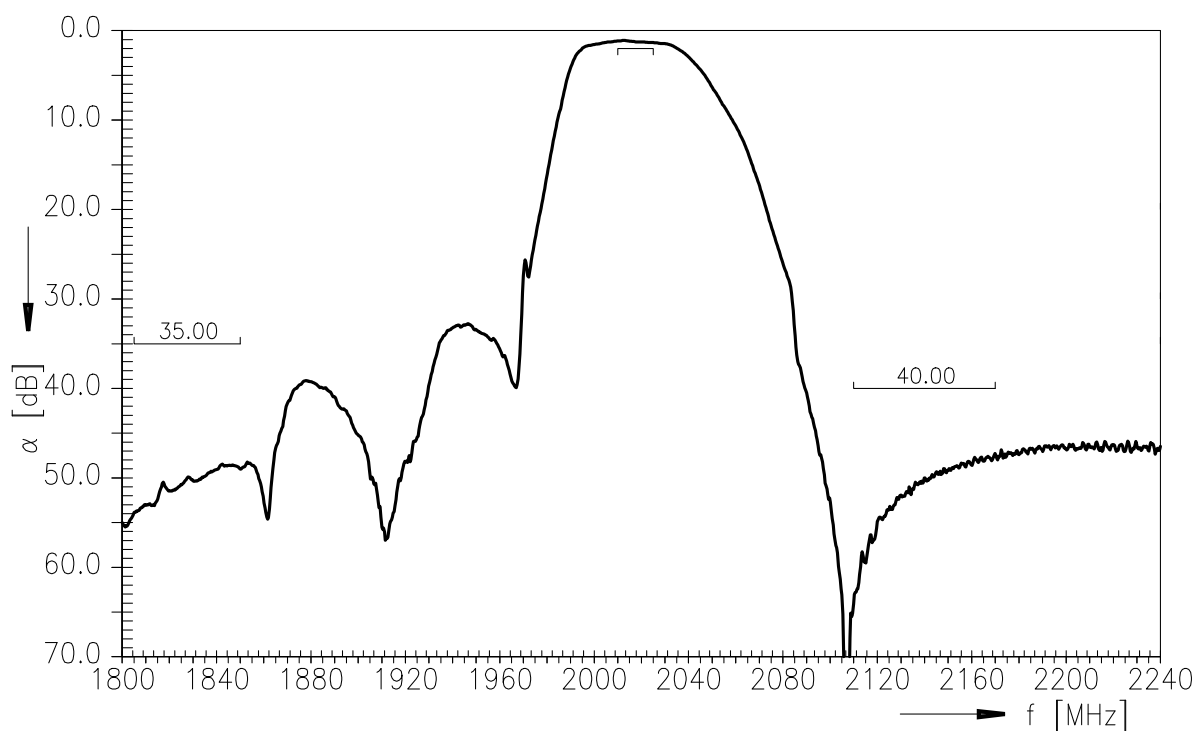
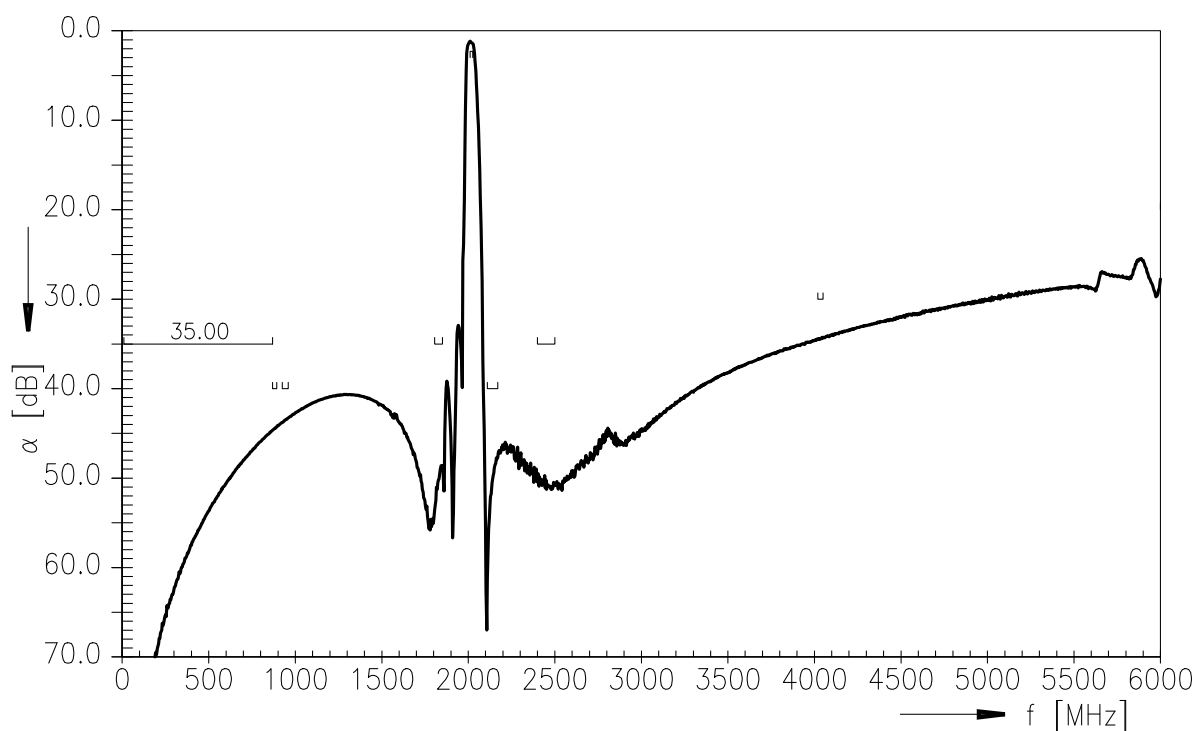
³⁾ acc. to JESD22-A114F (HBM - Human Body Model) , 1 negative & 1 positive pulses.

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

Frequency response Band 39 (passband)

Frequency response Band 34 (passband)


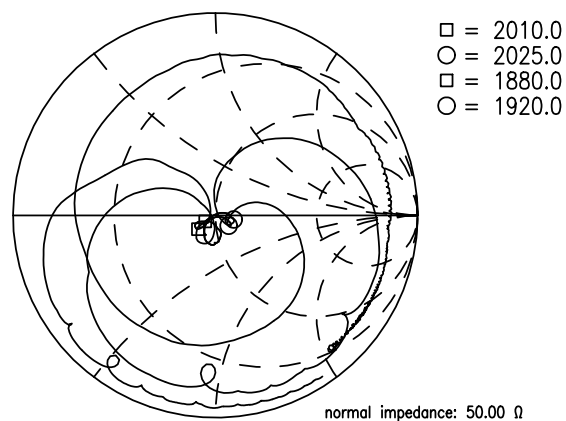
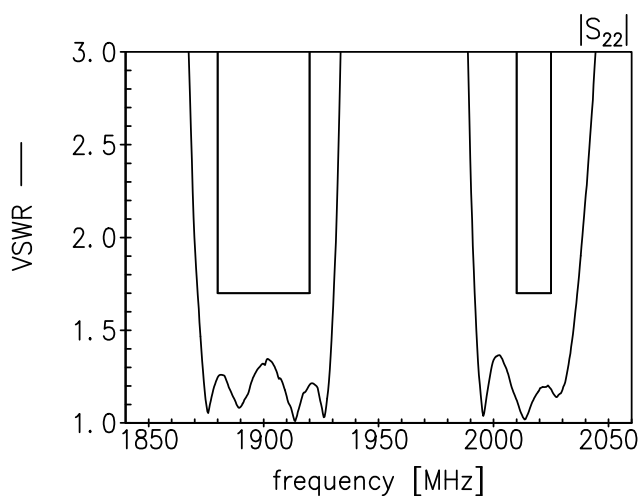
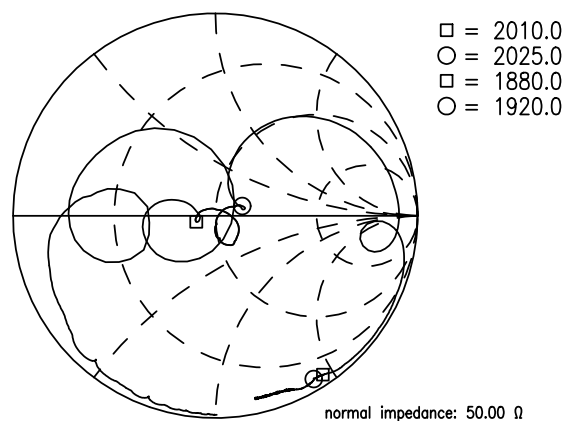
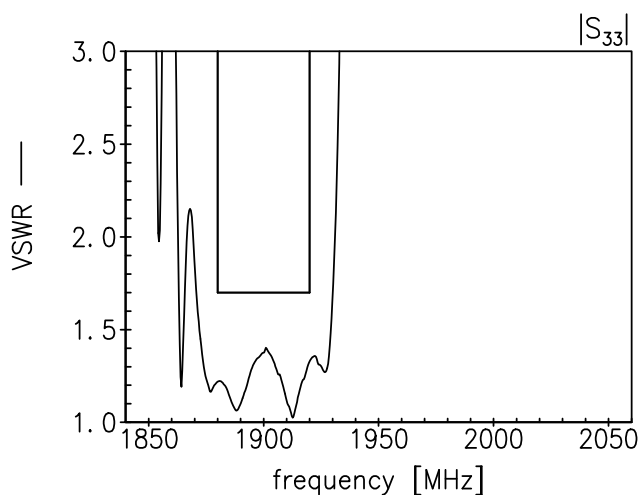
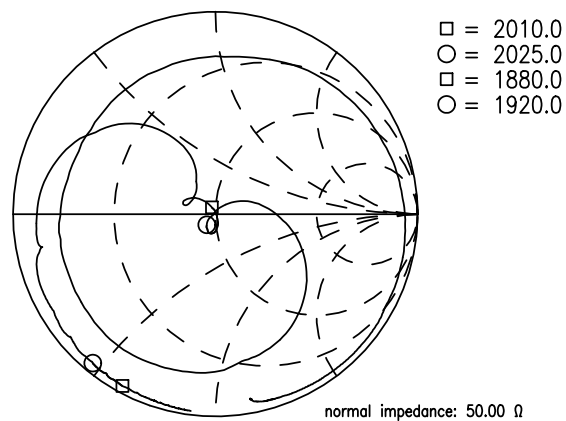
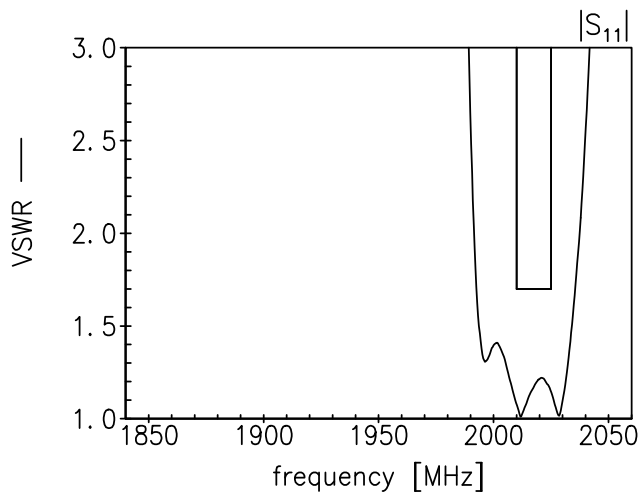
Frequency response Band 39

Frequency response Band 39 (wideband)


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



SAW Components
B9919
SAW Tx 2in1 Input/Output Diplex Filter
1900.0 / 2017.5 MHz

Data sheet



References

Type	B9919
Ordering code	B39202B9919P810
Marking and package	C61157-A8-A207
Packaging	F61074-V8259-Z000
Date codes	L_1126
S-parameters	B9919_NB.s3p, B9919_WB.s3p See file header for pin/port assignment.
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.
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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 for a large variety of matching coils.

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Published by EPCOS AG

Systems, Acoustics, Waves Business Group

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