



SAW Components

SAW 2in1 filter

Band 39 / Band 34

Series/type:	B9918
Ordering code:	B39202B9918P810
Date:	January 23, 2014
Version:	2.0

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Data sheet



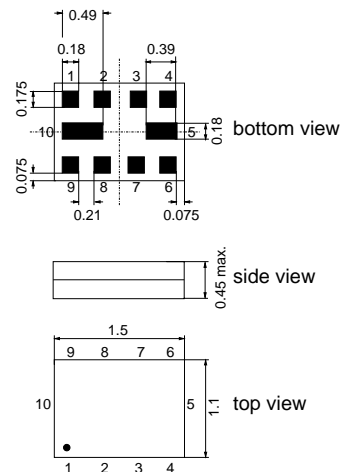
Application

- Low-loss 2in1 RF filter for mobile telephone Band 39 and Band 34 systems
- Usable passband:
Band 39: 40 MHz
Band 34: 15 MHz
- Unbalanced to balanced operation for both filters
- Impedance transformation from 50 Ω to 100 Ω for both filters
- Low amplitude ripple



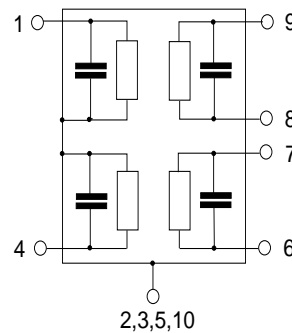
Features

- Package size 1.5 x 1.1 mm²
- Maximum package height 0.45 mm
- RoHS compatible
- Approx. weight 0.003g.
- Package for Surface Mount Technology (SMT)
- Ni, gold-plated terminals
- Electrostatic Sensitive Device (ESD)
- Moisture Sensitive Level 3



Pin configuration

- 1 Input [Band 39]
- 4 Input [Band 34]
- 6,7 Output balanced [Band 34]
- 8,9 Output balanced [Band 39]
- 2,3,5,10 Case ground



Data sheet


Characteristics of Band 39

Temperature range for specification: $T = -20\text{ °C to }+85\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 100\ \Omega \parallel 82\text{ nH}$

		B9918			
		min.	typ. @ 25 °C	max.	
Center frequency	f_C	—	1900.0	—	MHz
Maximum insertion attenuation	α_{\max}	—	1.7	2.2	dB
	1880.0 ... 1920.0MHz				
Amplitude ripple (p-p)	$\Delta\alpha$	—	0.6	1.1	dB
	1880.0 ... 1920.0MHz				
Input VSWR		—	1.6	2.1	
	1880.0 ... 1920.0MHz				
Output VSWR		—	1.6	2.1	
	1880.0 ... 1920.0MHz				
Common mode rejection ratio		19	23	—	dB
	1880.0 ... 1920.0MHz				
Attenuation	α				
	1.0 ... 1840.0MHz	36	41	—	dB
	1960.0 ... 4000.0MHz	34	39	—	dB
	4000.0 ... 5640.0MHz	30	35	—	dB
	5640.0 ... 5760.0MHz	27	36	—	dB
	5760.0 ... 6000.0MHz	27	36	—	dB


Maximum ratings of Band 39

Storage temperature range	T_{stg}	-40/+85 ¹⁾	°C	
DC voltage	V_{DC}	5 ²⁾	V	
ESD voltage	V_{ESD}	50 ³⁾	V	Machine Model
Input Power				
1880.0 ... 1920.0 MHz	P_{IN}	18	dBm	continuous wave

1) extended upperlimit: 96h@125°C acc. to IEC 60068-2-2 Bb

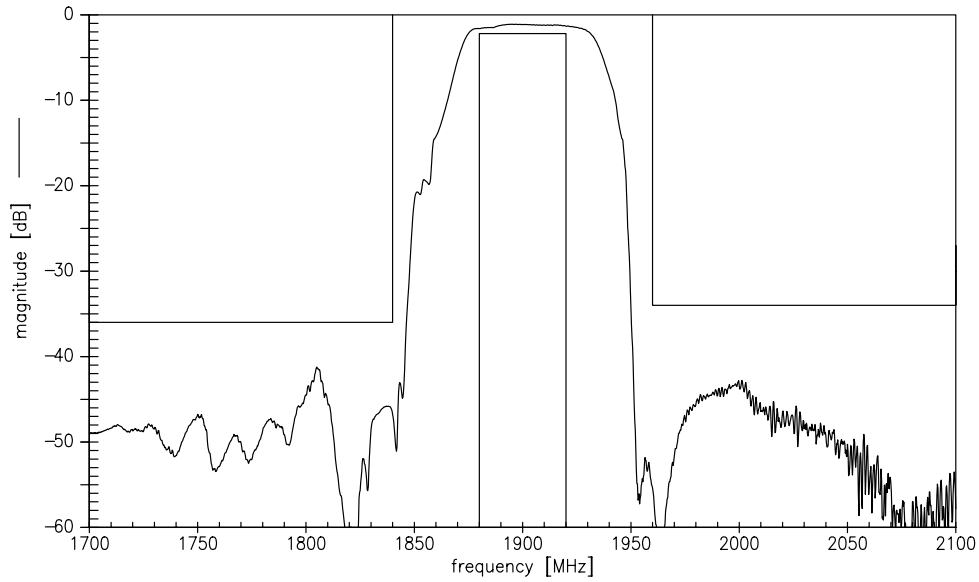
2) 168h Damp Heat Steady State acc. to IEC 60068-2-67 Cy

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

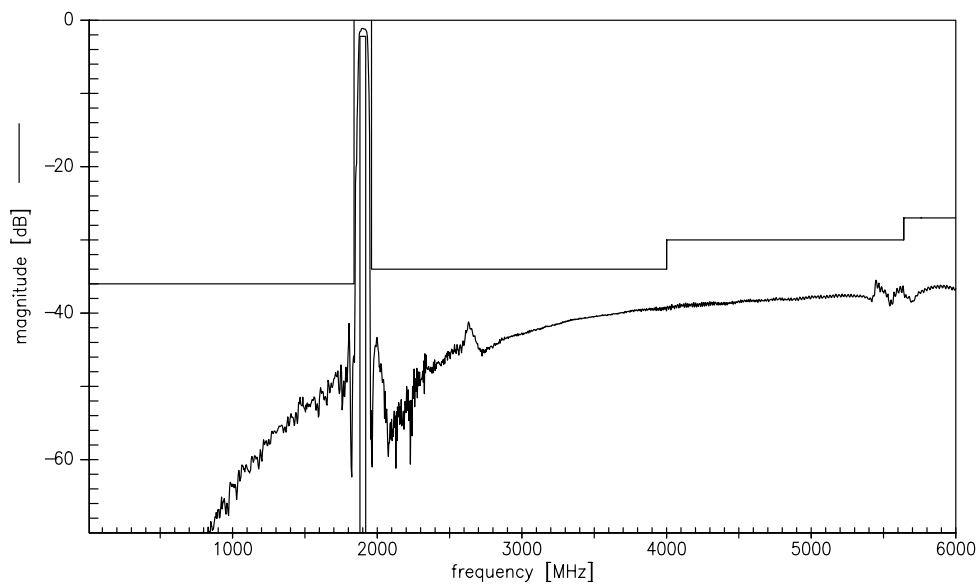
Data sheet



Transfer function of Band 39



Transfer function (wideband) of Band 39

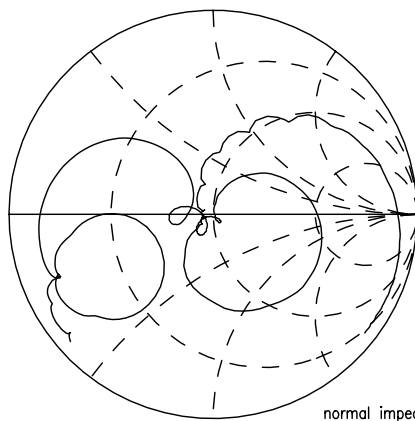


Data sheet

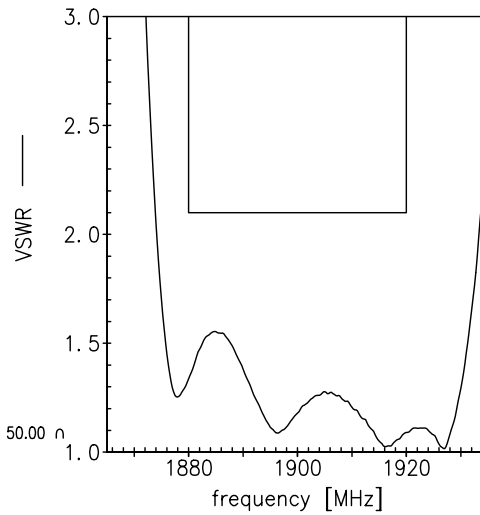


Smith charts of Band 39

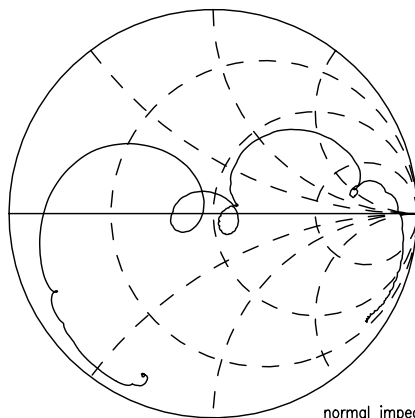
S₁₁ function



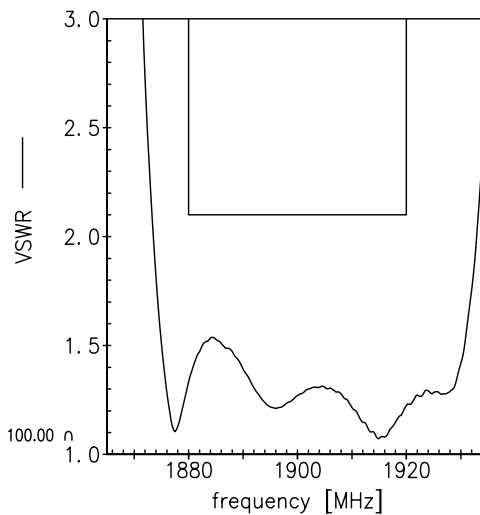
normal impedance: 50.00 Ω



S₂₂ function



normal impedance: 100.00 Ω



Data sheet


Characteristics of Band 34

 Temperature range for specification: $T = -20\text{ °C to }+85\text{ °C}$

 Terminating source impedance: $Z_S = 50\ \Omega$

 Terminating load impedance: $Z_L = 100\ \Omega \parallel 15\text{ nH}$

		B9918			
		min.	typ. @ 25°C	max.	
Center frequency	f_C	—	2017.5	—	MHz
Maximum insertion attenuation	α_{\max}				
2010.0 ... 2025.0	MHz	—	2.0	2.6	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
2010.0 ... 2025.0	MHz	—	0.3	0.9	dB
Input VSWR					
2010.0 ... 2025.0	MHz	—	1.5	2.0	
Output VSWR					
2010.0 ... 2025.0	MHz	—	1.5	2.0	
Common mode rejection ratio					
2010.0 ... 2025.0	MHz	21	24	—	dB
Attenuation	α				
1.0 ... 1970.0	MHz	33	38	—	dB
2070.0 ... 4000.0	MHz	35	40	—	dB
4000.0 ... 5640.0	MHz	31	36	—	dB
5640.0 ... 5760.0	MHz	28	36	—	dB
5760.0 ... 6000.0	MHz	28	36	—	dB


Maximum ratings of Band 34

Storage temperature range	T_{stg}	-40/+85 ¹⁾	°C	
DC voltage	V_{DC}	5 ²⁾	V	
ESD voltage	V_{ESD}	50 ³⁾	V	Machine Model
Input Power				
2010.0 ... 2025.0 MHz	P_{IN}	13	dBm	continuous wave

1) extended upperlimit: 96h@125°C acc. to IEC 60068-2-2 Bb

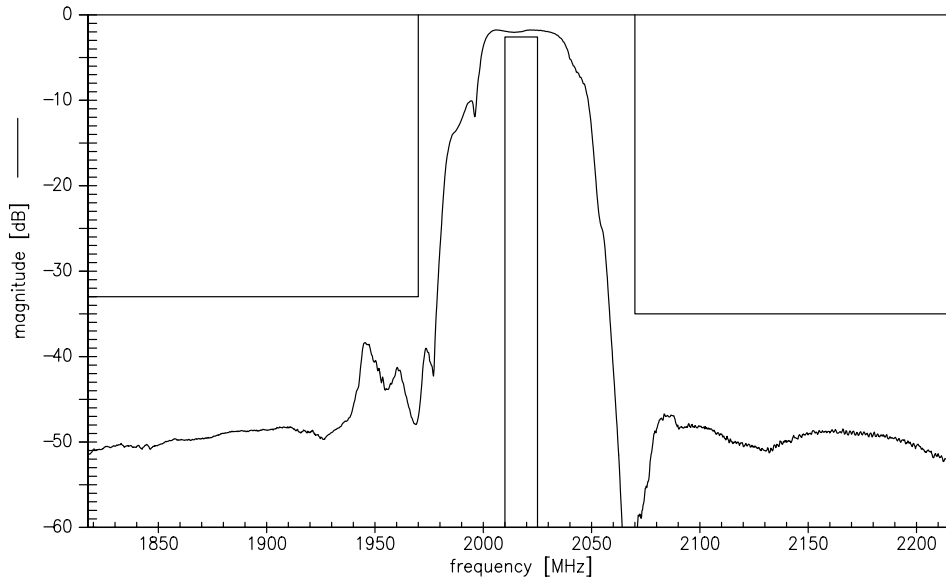
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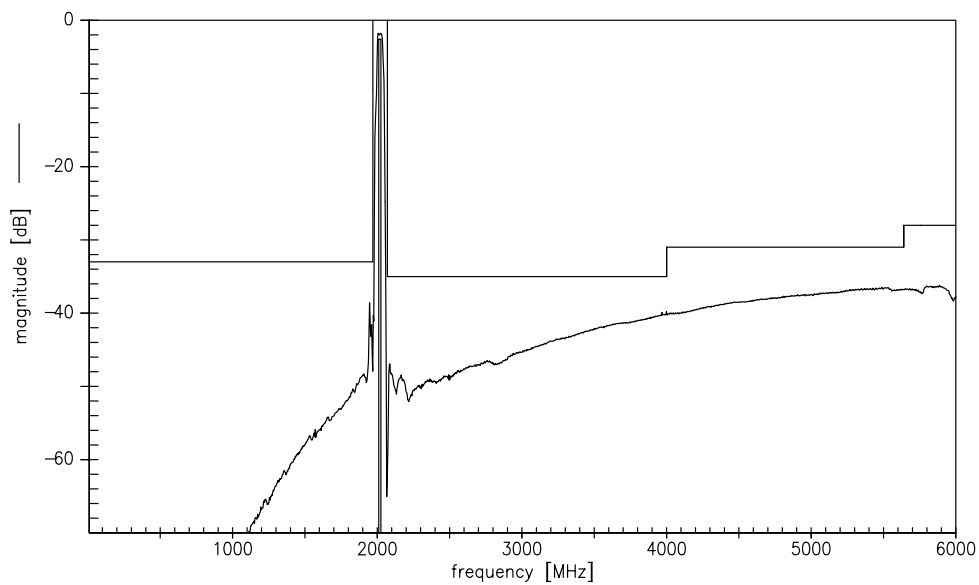
Data sheet



Transfer function of Band 34



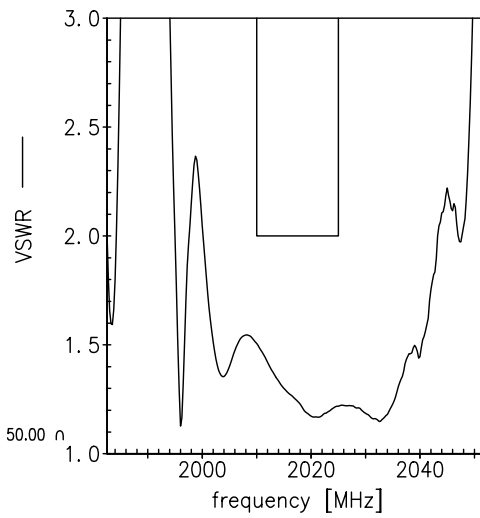
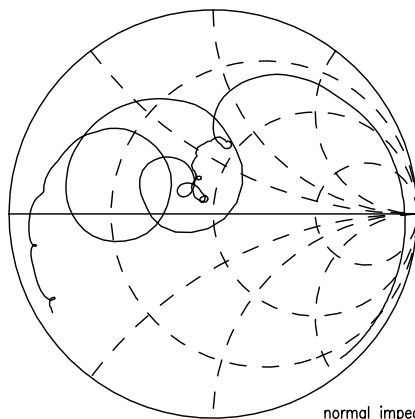
Transfer function (wideband) of Band 34



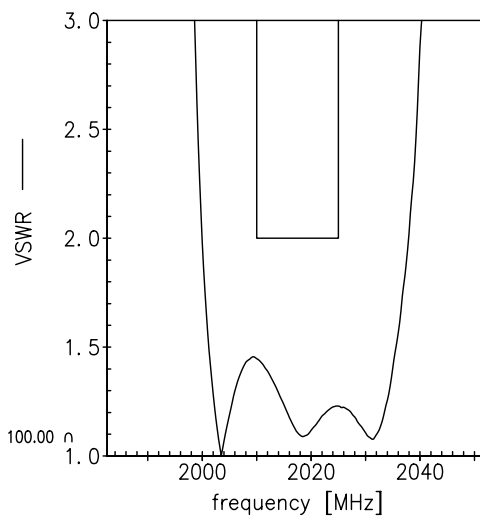
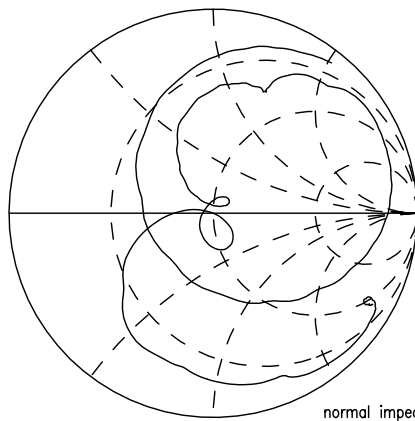


Smith charts of Band 34

S₁₁ function



S₂₂ function




References

Type	B9918
Ordering code	B39202B9918P810
Marking and package	C61157-A8-A71
Packaging	F61074-V8227-Z000
Date codes	L_1126
S-parameters	B9918_LB_NB.s3p, B9918_LB_WB.s3p B9918_UB_NB.s3p, B9918_UB_WB.s3p see file header for port/pin 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.
Matching coils	See 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

For further information please contact your local EPCOS sales office or visit our webpage at www.epcos.com.

Published by EPCOS AG
Systems, Acoustics, Waves Business Group
P.O. Box 80 17 09, 81617 Munich, GERMANY

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