



# SAW Components

## SAW DRx filter

WCDMA Band II

<b>Series/Type:</b>	<b>B8806</b>
<b>Ordering code:</b>	<b>B39202B8806P810</b>
<b>Date:</b>	<b>July 22, 2014</b>
<b>Version:</b>	<b>2.2</b>

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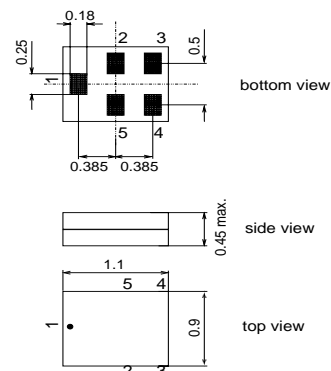
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**Application**

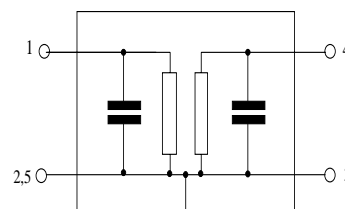
- Low-loss RF filter for mobile telephone WCDMA Band II system, receive path (Rx)
- Suitable for diversity applications
- Impedance 50 ohm input and output
- Unbalanced /unbalanced operation
- Usable passband 60 MHz


**Features**

- Package size 1.1 x 0.9 mm<sup>2</sup>
- Maximum package height 0.45 mm
- RoHS compatible
- Approx. weight 0.001g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitivity Level 3**


**Pin configuration**

- 1 Input, unbalanced
- 4 Output, unbalanced
- 2,3,5 To be grounded



Please read *cautions and warnings and important notes* at the end of this document.

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**Characteristics**

Temperature range for specification:  $T = -30\text{ °C to }+90\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$

				min.	typ. @ 25 °C	max.	
<b>Center frequency</b>		$f_C$		—	1960.0	—	MHz
<b>Maximum insertion attenuation</b>							
	1930.0 ... 1990.0	MHz	$\alpha_{\max}$	—	2.6	4.5	dB
@ $f_{\text{Carrier}}$	1932.4 ... 1987.6	MHz	$\alpha_{\text{WCDMA}}^{1)}$	—	2.3	3.5	dB
<b>Amplitude ripple (p-p)</b>			$\Delta\alpha$				
	1930.0 ... 1990.0	MHz		—	1.3	3.1	dB
<b>Error Vector Magnitude<sup>2)</sup></b>							
@ $f_{\text{Carrier}}$	1932.4 ... 1987.6	MHz	EVM	—	3	5	%
<b>Input VSWR</b>	1930.0 ... 1990.0	MHz		—	2.0	2.4	
<b>Output VSWR</b>	1930.0 ... 1990.0	MHz		—	2.0	2.4	
<b>Attenuation</b>			$\alpha$				
	10.0 ... 1850.0	MHz		41	47	—	dB
	699.0 ... 716.0	MHz		44	50	—	dB
	824.0 ... 849.0	MHz		45	51	—	dB
	1850.0 ... 1910.0	MHz		38	44	—	dB
@ $f_{\text{Carrier}}$	1852.4 ... 1907.6	MHz	$\alpha_{\text{WCDMA}}^{2)}$	41	44	—	dB
	2050.0 ... 2075.0	MHz		39	45	—	dB
	2075.0 ... 6000.0	MHz		26	32	—	dB
	2400.0 ... 2500.0	MHz		40	46	—	dB
	4900.0 ... 5950.0	MHz		26	32	—	dB

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- 1) Attenuation of WCDMA signal ("Powertransferfunction",  $\alpha_{\text{WCDMA}}$ ) is determined by

$$\int_{-\infty}^{\infty} |S_{\text{ds21}}(f) H_{\text{RRC}}(f - f_{\text{Carrier}})|^2 df$$

$f_{\text{Carrier}}$  according to 3GPP TS 25.101 (e.g. for band VIII RX passband,  $f_{\text{Carrier}}$  ranges from 1932.4 MHz (lowest Rx channel) to 1957.6 MHz (highest Rx channel)).  $H_{\text{RRC}}(f)$  is the transfer function of the root-raised cosine transmit pulse shaping filter according to 3GPP TS 25.101 with the following normalization:

$$\int_{-\infty}^{\infty} |H_{\text{RRC}}(f)|^2 df = 1$$

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


**Maximum ratings**

Storage temperature range	$T_{\text{stg}}$	-40/+85 <sup>1)</sup>	°C	
DC voltage	$V_{\text{DC}}$	5 <sup>2)</sup>	V	
ESD voltage	$V_{\text{ESD}}$	100 <sup>3)</sup>	V	machine model, 10 pulse
Input Power at 1850.0 ... 1910.0 MHz	$P_{\text{IN}}$	18	dBm	Continuous wave for 2000h @ 55°C

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

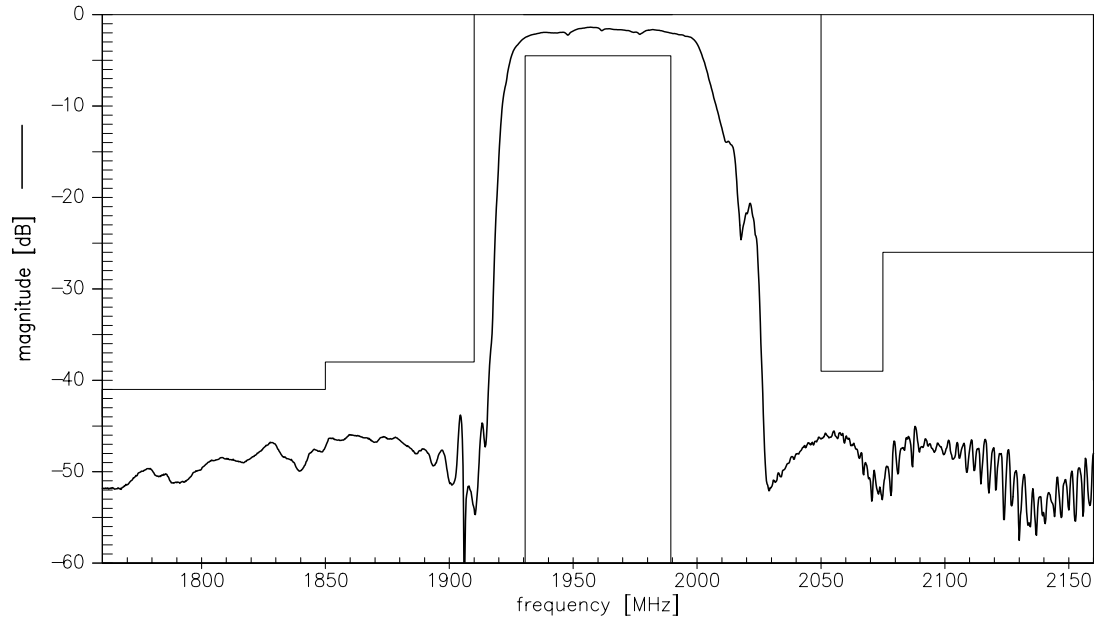
2) 168h Damp Heat Steady State acc. to IEC 60068-2-67 Cy

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

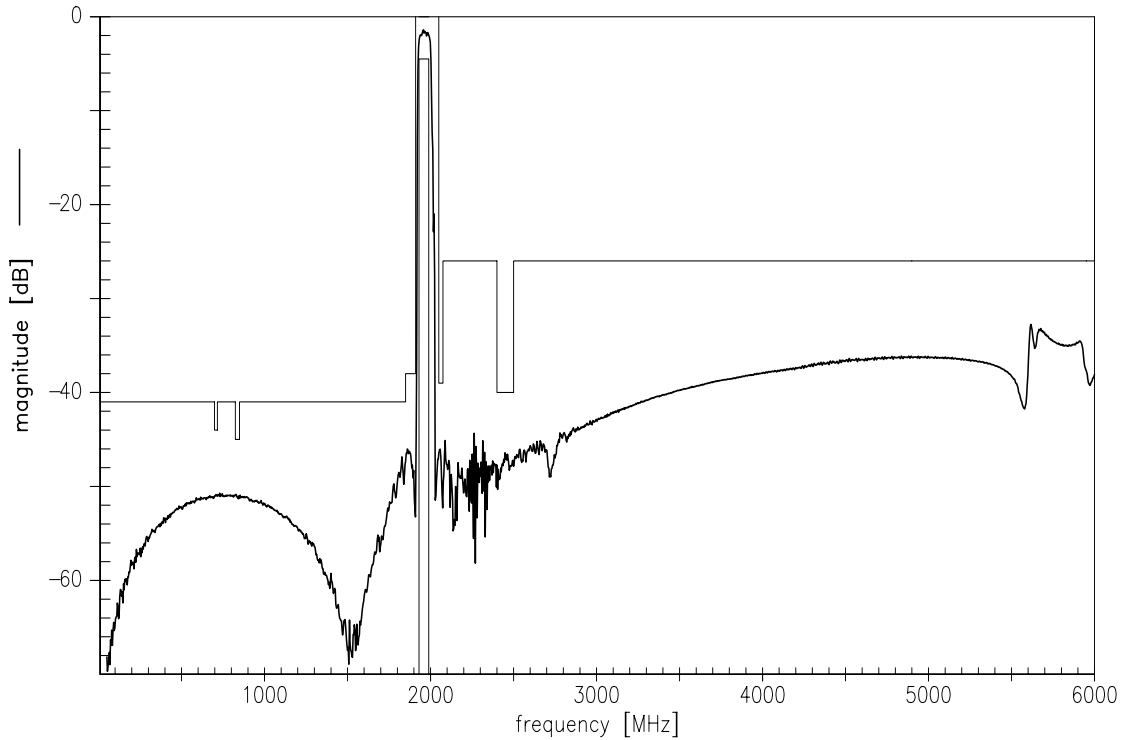
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Transfer function (narrowband)



Transfer function (wideband)



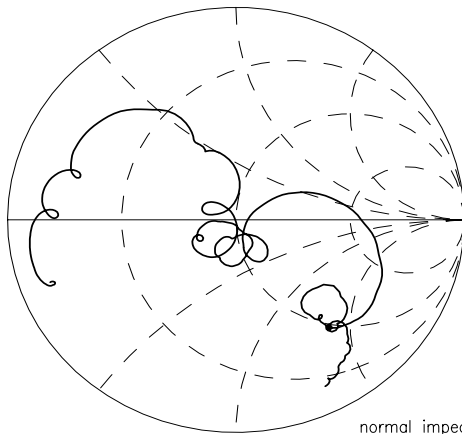
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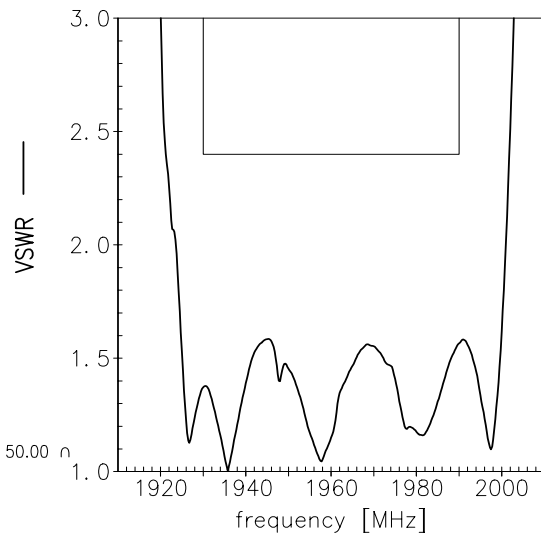


Smith charts

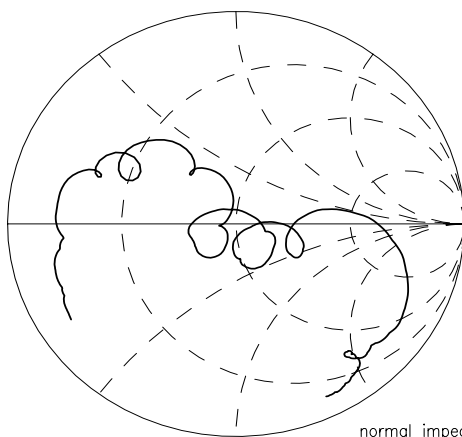
**S<sub>11</sub> function**



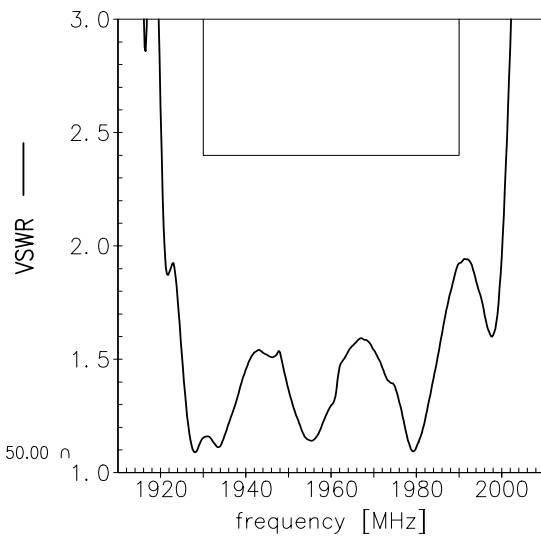
normal impedance: 50.00  $\Omega$



**S<sub>22</sub> function**



normal impedance: 50.00  $\Omega$



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**References**

<b>Type</b>	B8806
<b>Ordering code</b>	B39202B8806P810
<b>Marking and package</b>	C61157-A8-A56
<b>Packaging</b>	F61074-V8255-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B8806_NB.s2p, B8806_WB.s2p 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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