



# SAW Components

## SAW Rx filter

GSM 1800

<b>Series/Type:</b>	<b>B9855</b>
<b>Ordering code:</b>	<b>B39182B9855P810</b>
<b>Date:</b>	<b>May 04, 2015</b>
<b>Version:</b>	<b>2.1</b>

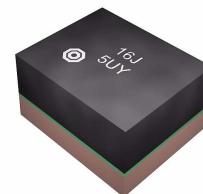
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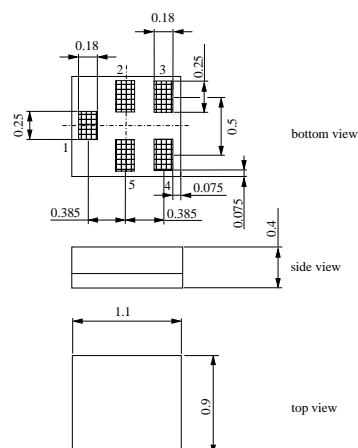
**Data Sheet**

**Application**

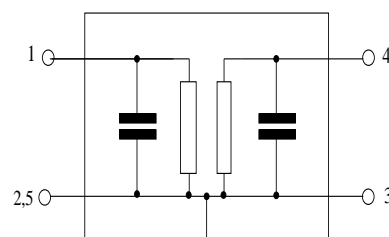
- Low-loss RF filter for mobile telephone GSM 1800 systems, receive path (RX)
- Low insertion attenuation
- Low amplitude ripple
- Usable passband 75 MHz
- Impedance transform from 50 Ω to 150 Ω
- Unbalanced to balanced operation
- Suitable for GPRS class 1 to 12


**Features**

- Package size 1.1 x 0.9 x 0.4 mm<sup>3</sup>
- RoHS compatible
- Approx. weight 0.001g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitive Level 3**


**Pin configuration**

- 1 Input, unbalanced
- 3,4 Output, balanced
- 2,5 Case-ground



**Data Sheet**

**Characteristics**

Temperature range for specification:	$T = -20\text{ °C to }+75\text{ °C}$
Terminating source impedance:	$Z_S = 50\ \Omega$
Terminating load impedance:	$Z_L = 150\ \Omega \parallel 18\text{ nH (balanced)}$

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	1842.5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	1.4	2.4	dB
1805.0 ... 1880.0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0.6	1.4	dB
1805.0 ... 1880.0 MHz					
<b>Input VSWR</b>		—	1.8	2.1	
1805.0 ... 1880.0 MHz					
<b>Output VSWR</b>		—	1.8	2.1	
1805.0 ... 1880.0 MHz					
<b>CMRR (<math> S_{21}-S_{31}  /  S_{21}+S_{31} </math>)</b>		20	24	—	dB
1805.0 ... 1880.0 MHz					
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>		-1.2	-0.6/0.9	1.2	dB
1805.0 ... 1880.0 MHz					
<b>Output phase balance (<math>\phi(S_{31})-\phi(S_{21})+180^\circ</math>)</b>		-10	-4.0/5.0	10	°
1805.0 ... 1880.0 MHz					
<b>Attenuation</b>	$\alpha$				
0.0 ... 902.0 MHz		45	50	—	dB
902.0 ... 940.0 MHz		45	48	—	
940.0 ... 1500.0 MHz		35	40	—	dB
1500.0 ... 1705.0 MHz		28	37	—	
1705.0 ... 1785.0 MHz		12	18	—	dB
1920.0 ... 1980.0 MHz		18	22	—	
1980.0 ... 2030.0 MHz		23	28	—	dB
2030.0 ... 2400.0 MHz		25	31	—	
2400.0 ... 2500.0 MHz		32	37	—	dB
2500.0 ... 2775.0 MHz		28	32	—	
2775.0 ... 3760.0 MHz		40	45	—	dB
3760.0 ... 6000.0 MHz		35	38	—	

**Maximum ratings**

Storage temperature range	$T_{\text{stg}}$	-40/+85	°C	
DC voltage	$V_{\text{DC}}$	5 <sup>1)</sup>	V	
ESD voltage	$V_{\text{ESD}}$	50 <sup>2)</sup>	V	Machine Model
		175 <sup>3)</sup>	V	Human Body Model
		600 <sup>4)</sup>	V	Charged Device Model
Input Power at GSM850, GSM900 GSM1800, GSM1900 Tx bands	$P_{\text{IN}}$	15	dBm	effective power in the on-state, duty cycle 4:8
	$P_{\text{IN}}$	15	dBm	

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

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

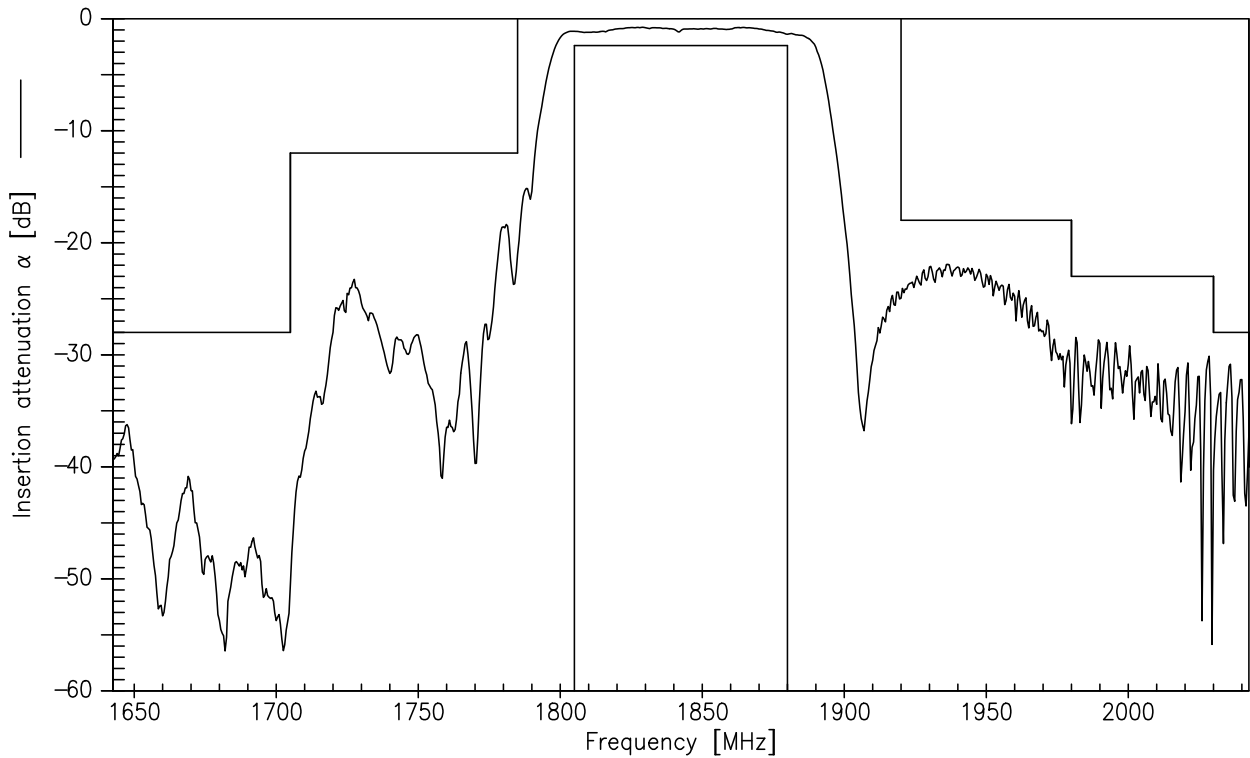
<sup>3)</sup> acc. to JESD22-A114F (HBM - Human Body Model) , 1 negative & 1 positive pulses.

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

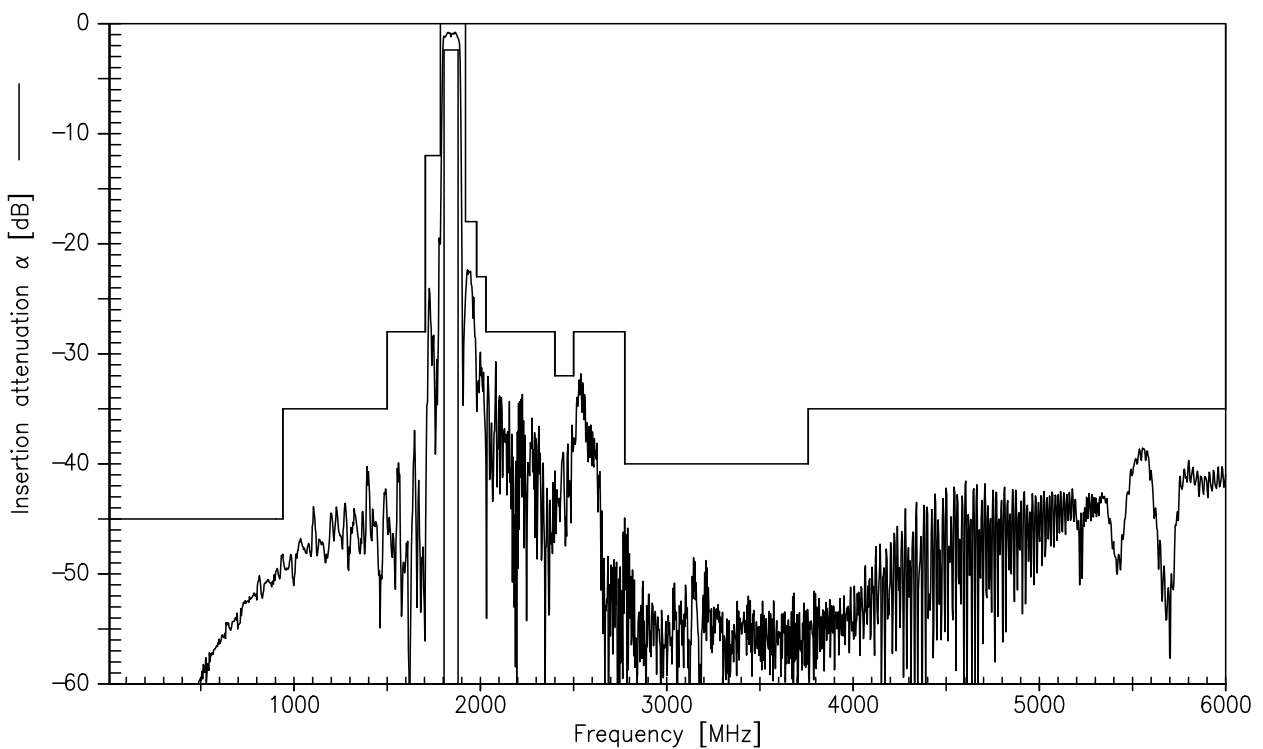
Data Sheet



Transfer function (narrowband)



Transfer function (wideband)

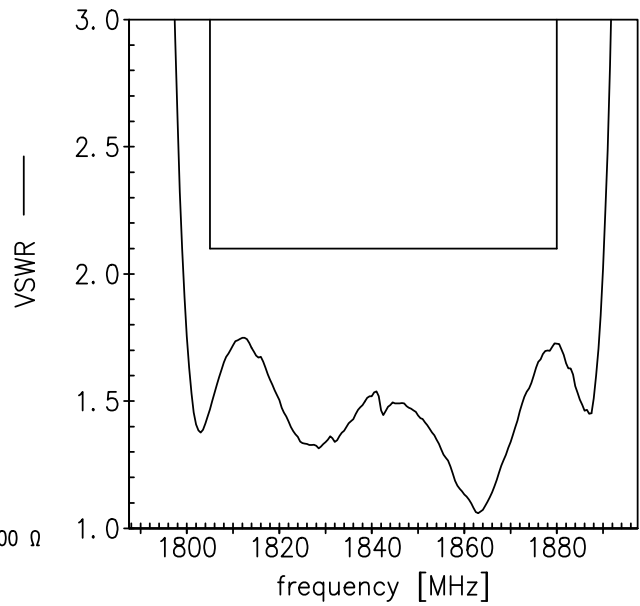
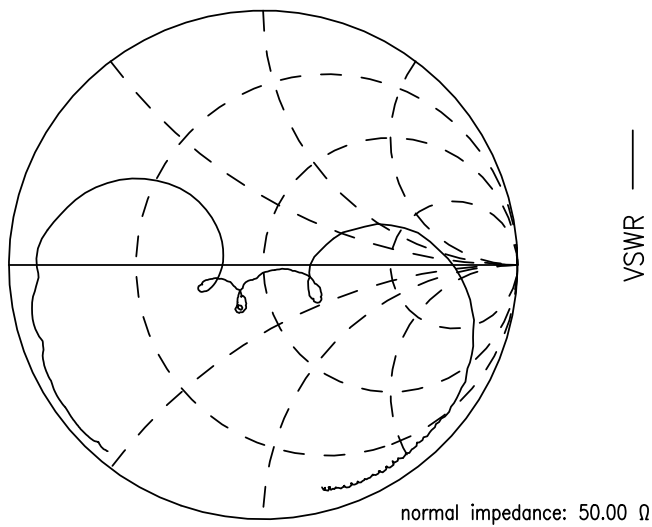


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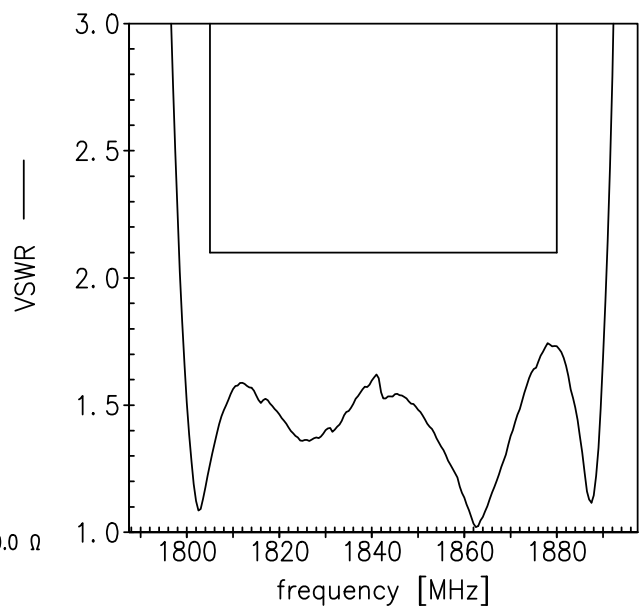
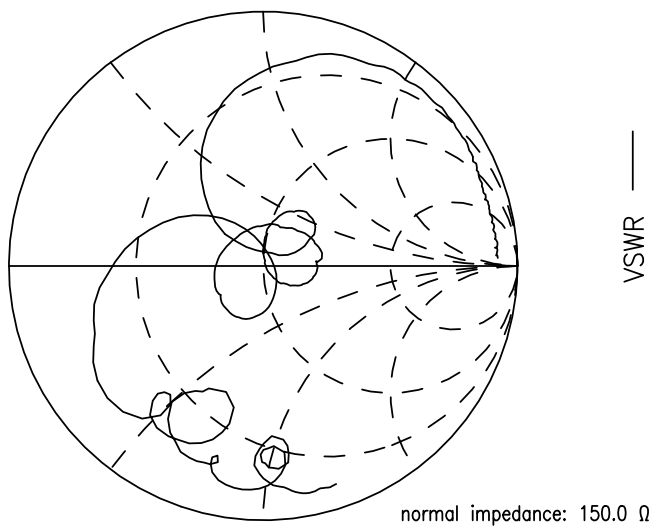


Smith charts

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



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



**References**

<b>Type</b>	B9855
<b>Ordering code</b>	B39182B9855P810
<b>Marking and package</b>	C61157-A8-A192
<b>Packaging</b>	F61074-V8255-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B9855_NB.s3p, B9855_WB.s3p 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 8th, 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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