

RF360 Europe GmbH

A Qualcomm – TDK Joint Venture

SAW Components

SAW Rx filter

GSM 1800

Series/type:	B9855
Ordering code:	B39182B9855P810
Date:	May 04, 2015
Version:	2.1

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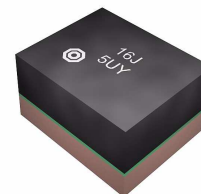
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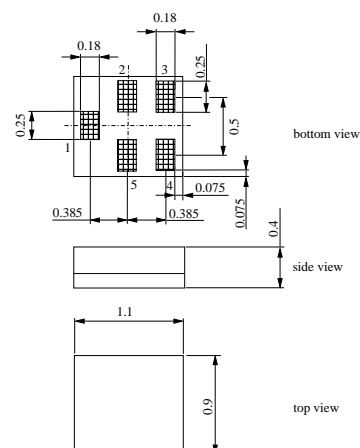
Data Sheet

Application

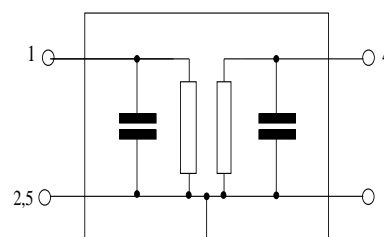
- Low-loss RF filter for mobile telephone GSM 1800 systems, receive path (RX)
- Low insertion attenuation
- Low amplitude ripple
- Usable passband 75 MHz
- Impedance transform from 50 Ω to 150 Ω
- Unbalanced to balanced operation
- Suitable for GPRS class 1 to 12


Features

- Package size 1.1 x 0.9 x 0.4 mm³
- 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.	
Center frequency	f_C	—	1842.5	—	MHz
Maximum insertion attenuation	α_{\max}	—	1.4	2.4	dB
1805.0 ... 1880.0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	0.6	1.4	dB
1805.0 ... 1880.0 MHz					
Input VSWR		—	1.8	2.1	
1805.0 ... 1880.0 MHz					
Output VSWR		—	1.8	2.1	
1805.0 ... 1880.0 MHz					
CMRR ($S_{21}-S_{31} / S_{21}+S_{31}$)		20	24	—	dB
1805.0 ... 1880.0 MHz					
Output amplitude balance (S_{31}/S_{21})		-1.2	-0.6/0.9	1.2	dB
1805.0 ... 1880.0 MHz					
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$)		-10	-4.0/5.0	10	°
1805.0 ... 1880.0 MHz					
Attenuation	α				
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_{stg}	-40/+85	°C	
DC voltage	V_{DC}	5 ¹⁾	V	
ESD voltage	V_{ESD}	50 ²⁾	V	Machine Model
		175 ³⁾	V	Human Body Model
		600 ⁴⁾	V	Charged Device Model
Input Power at GSM850, GSM900	P_{IN}	15	dBm	effective power in the on-state, duty cycle 4:8
GSM1800, GSM1900	P_{IN}	15	dBm	
Tx bands				

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.

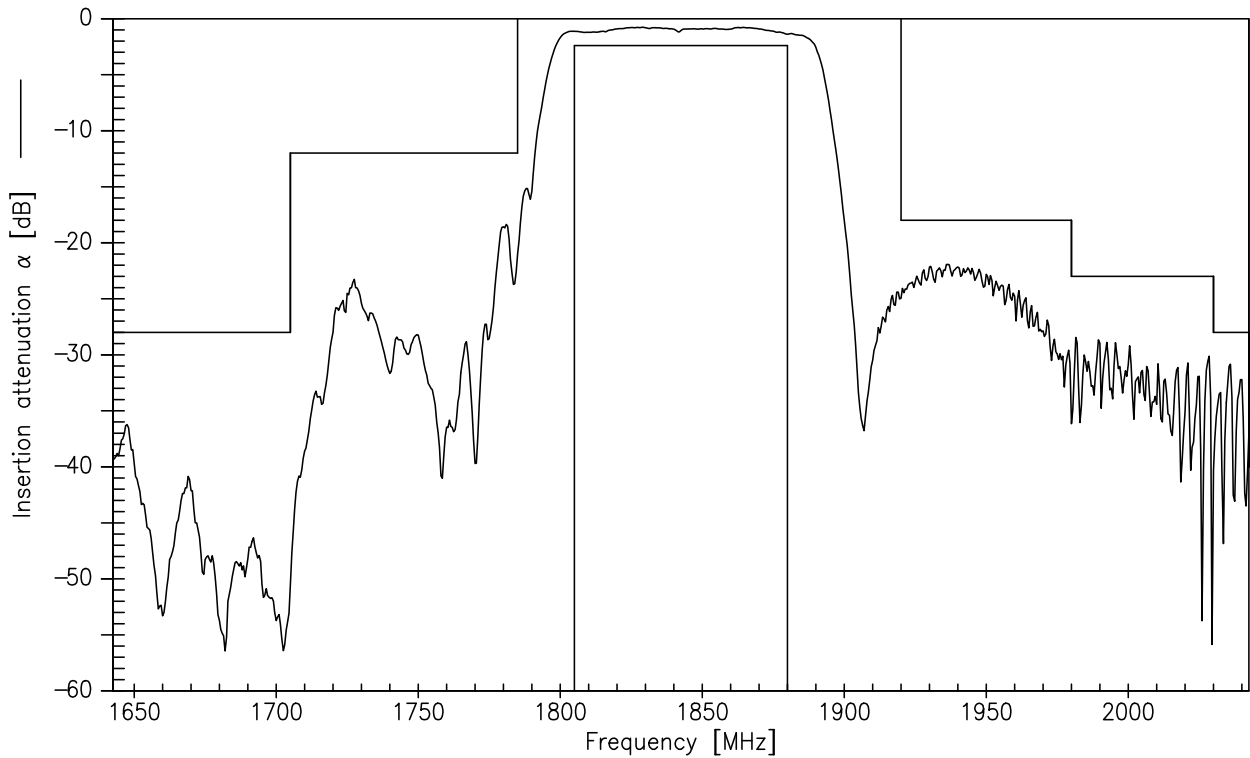
3) acc. to JESD22-A114F (HBM - Human Body Model) , 1 negative & 1 positive pulses.

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

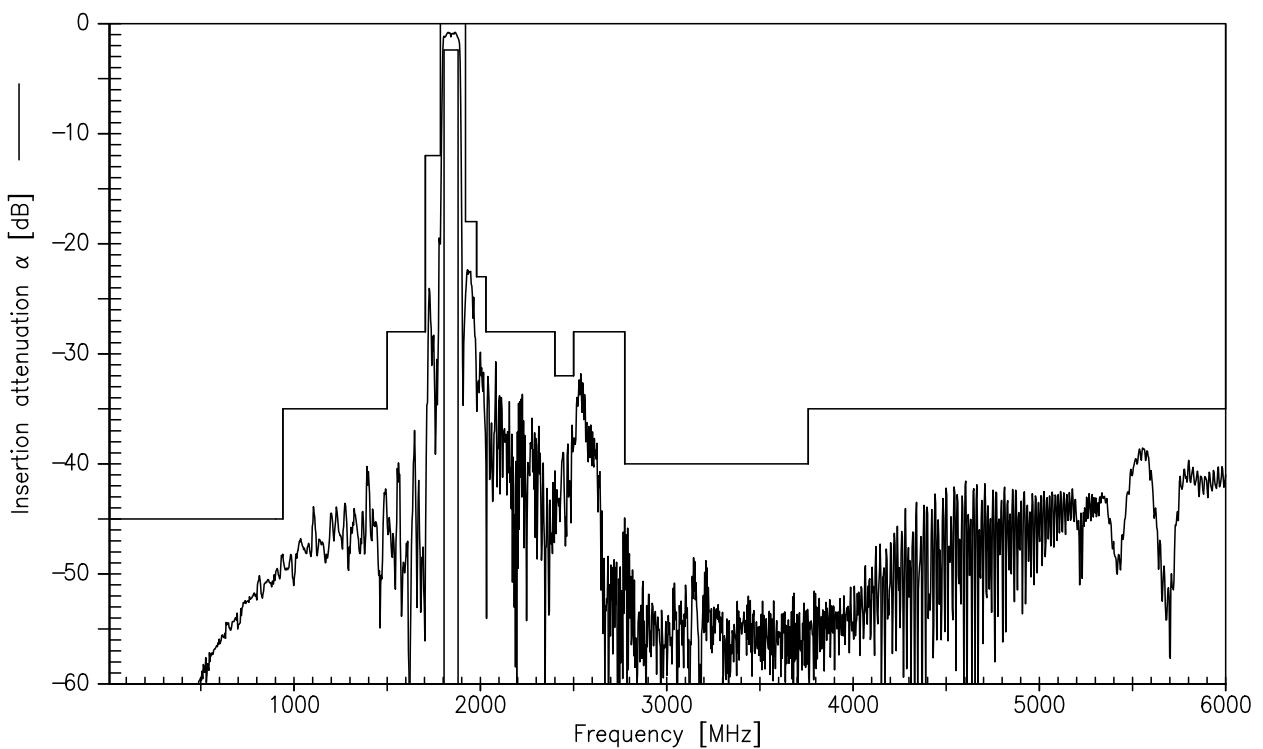
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Transfer function (narrowband)



Transfer function (wideband)

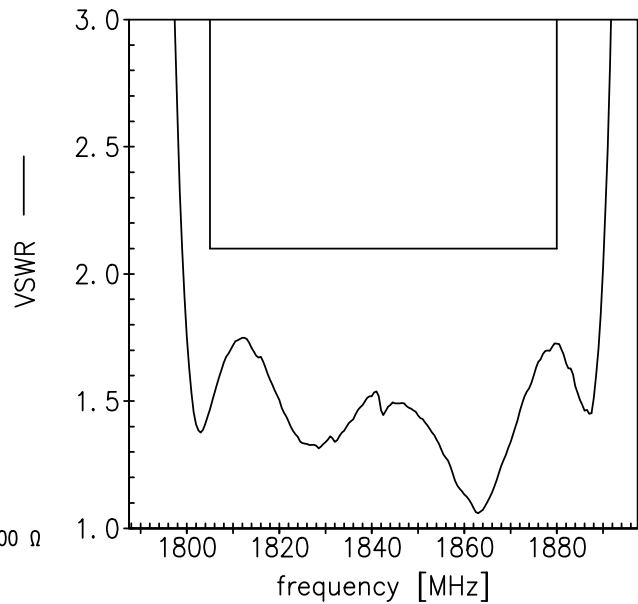
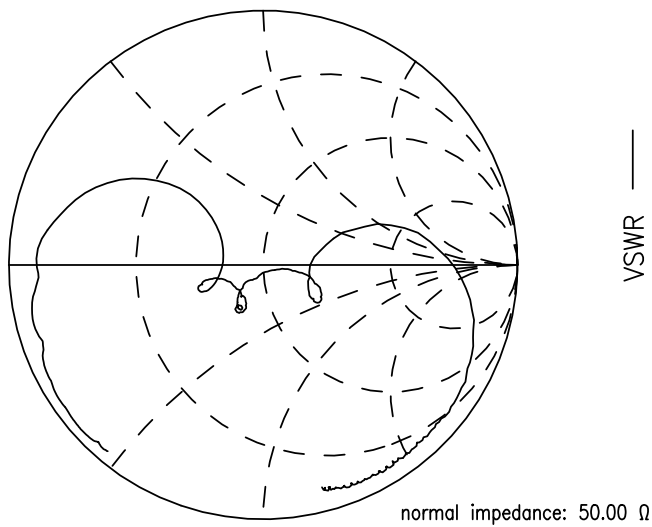


Data Sheet

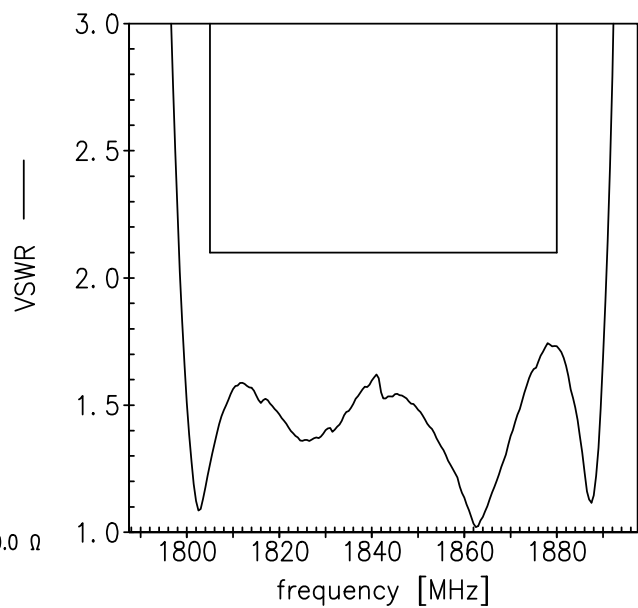
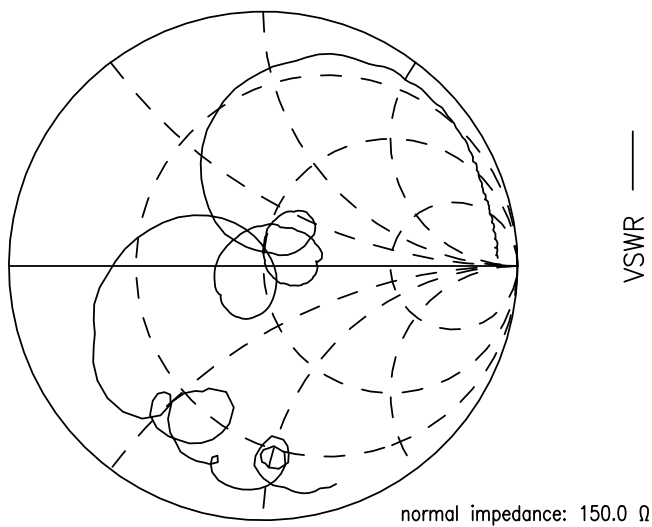


Smith charts

S₁₁ function



S₂₂ function



References

Type	B9855
Ordering code	B39182B9855P810
Marking and package	C61157-A8-A192
Packaging	F61074-V8255-Z000
Date codes	L_1126
S-parameters	B9855_NB.s3p, B9855_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 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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