



SAW Components

SAW Rx Filter

GSM 1900

Series/Type:	B9403
Ordering code:	B39202-B9403-K610
Date:	Oct 21, 2005
Version:	2



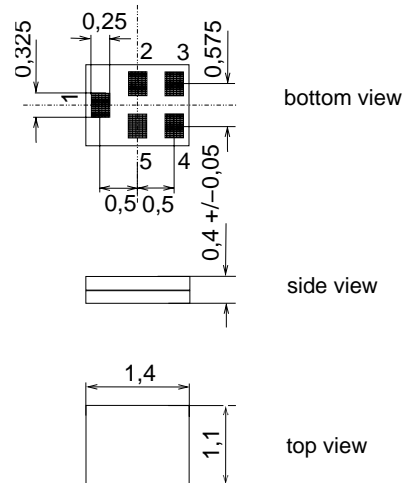
Application

- Low-loss RF filter for mobile telephone GSM 1900 systems, receive path (RX)
- Impedance transform from 50 Ω to 150 Ω
- Unbalanced to balanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 60 MHz
- Suitable for GPRS class 1 to 12



Features

- Package size 1.4 x 1.1 x 0.4 mm³
- RoHS compliant
- Approx. weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals



Pin configuration

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





Data Sheet



Characteristics

Operating temperature range: $T = -20$ to $+75$ °C
 Terminating source impedance: $Z_S = 50\Omega$
 Terminating load impedance: $Z_L = 150\Omega \parallel 18$ nH (balanced)

		min.	typ. @ 25°C	max.	
Center frequency	f_C	—	1960	—	MHz
Maximum insertion attenuation	α_{max}	—	1.6	2.6	dB
1930.0 ... 1990.0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,7	1.4	dB
1930.0 ... 1990.0 MHz					
Input VSWR		—	1.7	2.2	
1930.0 ... 1990.0 MHz					
Output VSWR		—	1.7	2.2	
1930.0 ... 1990.0 MHz					
Output amplitude balance (S_{31}/S_{21})		-1.2	-0.6/0.5	1.2	dB
1930.0 ... 1990.0 MHz					
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$)		-10	-1/+4	10	°
1930.0 ... 1990.0 MHz					
Attenuation	α				
0.0 ... 1510.0 MHz		40	46	—	dB
1510.0 ... 1830.0 MHz		30	37	—	dB
1830.0 ... 1850.0 MHz		26	32	—	dB
1850.0 ... 1890.0 MHz		23	28	—	dB
1890.0 ... 1910.0 MHz		12	18	—	dB
2010.0 ... 2070.0 MHz		11.5	12.5	—	dB
2070.0 ... 2400.0 MHz		27	29	—	dB
2400.0 ... 2500.0 MHz		35	42	—	dB
2500.0 ... 3860.0 MHz		28	33	—	dB
3860.0 ... 3980.0 MHz		40	49	—	dB
3980.0 ... 5790.0 MHz		28	42	—	dB
5790.0 ... 6000.0 MHz		35	45	—	dB



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1960.0 MHz

Data Sheet



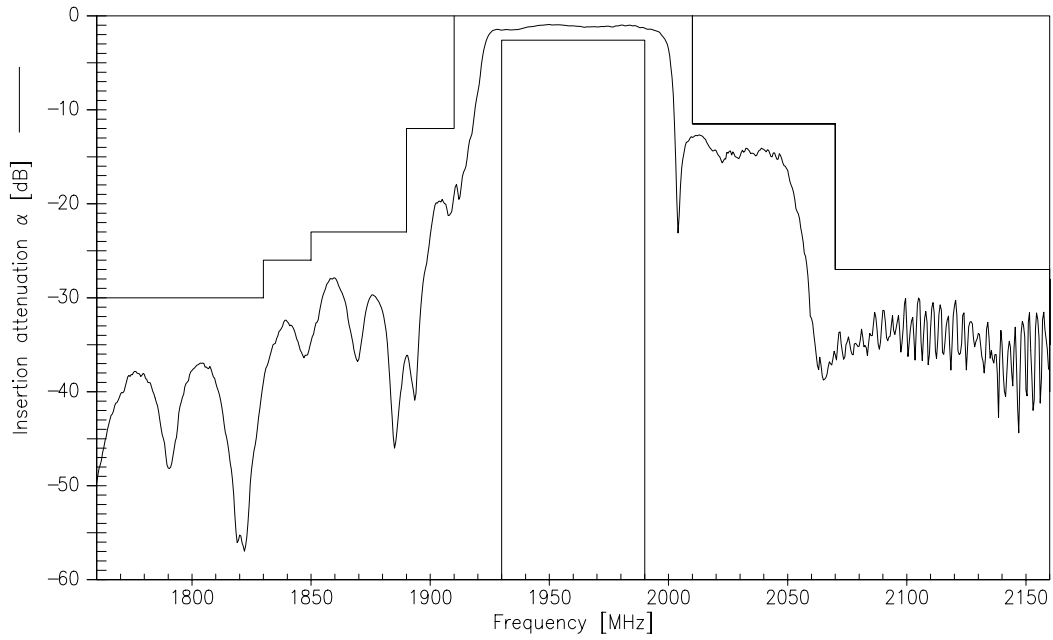
Maximum ratings

Operable temperature range	T	-30/+85	°C	
Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	5	V	
ESD voltage	V _{ESD}	50 ¹⁾	V	machine model, 10 pulses
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				

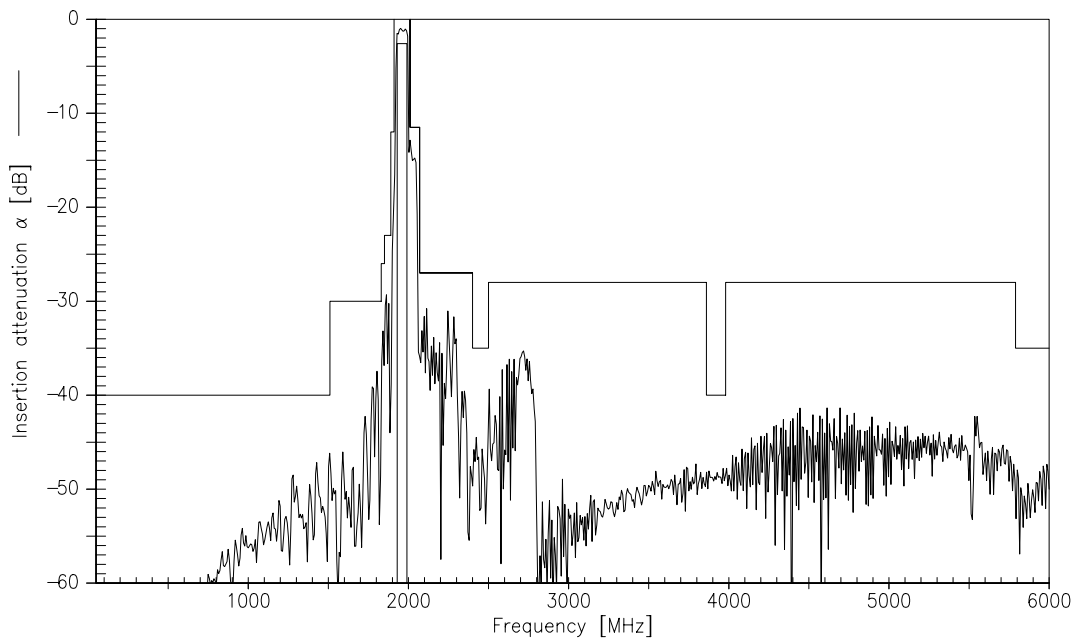
¹⁾ acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



Transfer function



Transfer function



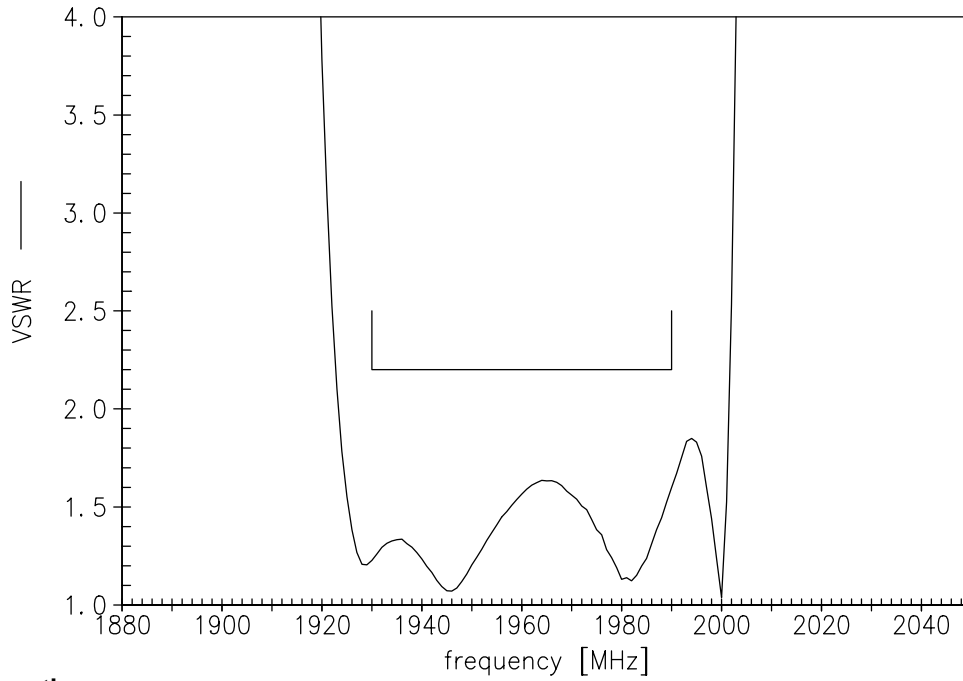


Data Sheet

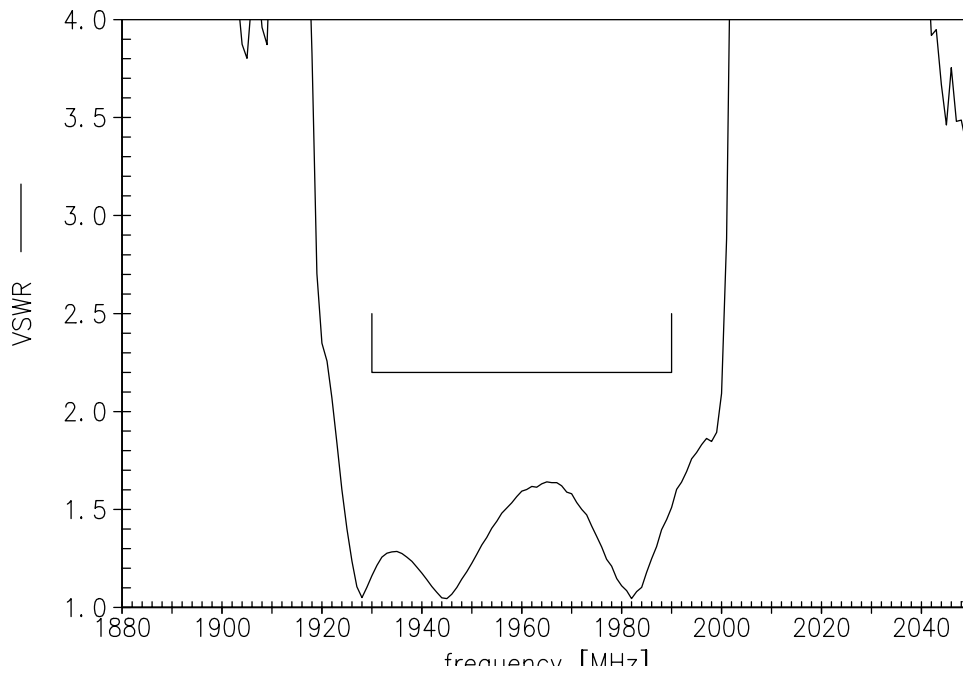


Matching

S₁₁ function



S₂₂ function





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1960.0 MHz

Data Sheet



Type	B9403	
Ordering code	B39202-B9403-K610	
Marking and Package	C61157-A8-A1	
Packaging	F61074-V8212-Z000	
Date Codes	L_1126	
S-Parameters	B9403_NB.s3p B9403_WB.s3p	
Soldering profile	S_6001	

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

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