



SAW Components

SAW RX filter

WCDMA band VIII

Series/type:	B9449
Ordering code:	B39941B9449M410
Date:	Mar 27, 2009
Version:	2.0



Data sheet



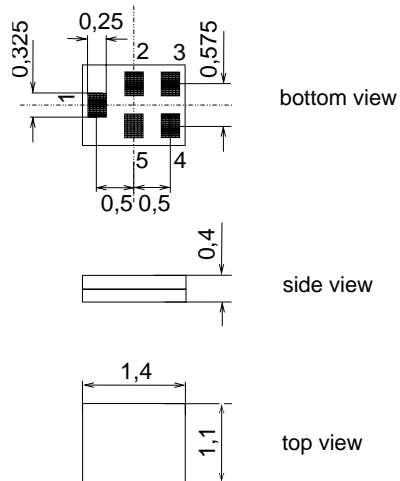
Application

- Low-loss RF filter for mobile telephone WCDMA Band VIII and GSM 900 systems, receive path (RX)
- Suitable for diversity applications
- Useable passband: 35 MHz
- Impedance at input and output 50 Ω
- Unbalanced to unbalanced operation



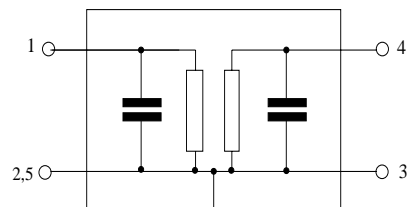
Features

- Package size 1.4 x 1.1 x 0.4 mm³
- Package code QCS51
- RoHS compatible
- Approximate weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**



Pin configuration

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





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942.5 MHz

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Characteristics

Temperature range for specification: T = -30 °C to +85 °C
 Terminating source impedance: Z_S = 50 Ω (unbalanced)
 Terminating load impedance: Z_L = 50 Ω (unbalanced)

						B9449			
						min.	typ. @ 25 °C	max.	
Center frequency		f _C				—	942.5	—	MHz
Maximum insertion attenuation									
	925.0 ... 960.0	MHz	α _{max}			—	2.5	3.2	dB
@f _{Carrier Bd 8 RX}	927.4 ... 957.6	MHz	α _{WCDMA} ¹⁾			—	1.9	2.7	dB
Amplitude ripple (p-p)									
	925.0 ... 960.0	MHz	Δα			—	1.4	2.1	dB
Error Vector Magnitude²⁾									
@f _{Carrier Bd 8 RX}	927.4 ... 957.6	MHz	EVM			—	3.0	5.0	%
Input VSWR									
	925.0 ... 960.0	MHz				—	1.8	2.1	
Output VSWR									
	925.0 ... 960.0	MHz				—	1.8	2.1	
Attenuation									
	DC ... 835.0	MHz	α			50	61	—	dB
	835.0 ... 880.0	MHz				50	57	—	dB
@f _{Carrier Bd 8 TX}	882.4 ... 912.6	MHz	α _{WCDMA} ¹⁾			33	37	—	dB
	880.0 ... 905.0	MHz				30	45	—	dB
	905.0 ... 915.0	MHz				30	34	—	dB
	980.0 ... 1060.0	MHz				20	28	—	dB
	1060.0 ... 3000.0	MHz				30	38	—	dB
	3000.0 ... 6000.0	MHz				20	22	—	dB

¹⁾ Attenuation of WCDMA signal ("Powertransferfunction"). Please refer to annotation on page (4).

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



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Annotation for characteristics section

Attenuation of WCDMA signal (“Powertransferfunction”, α_{WCDMA}) is determined by

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

$f_{Carrier}$ according to 3GPP TS 25.101 (e.g. for band VIII RX passband, $f_{Carrier}$ ranges from 927.4 MHz (lowest RX channel) to 957.6 MHz (highest RX channel)). $H_{RRC}(f)$ is the transfer function of the root-raised cosine transmit pulse shaping filter according to 3GPP TS 25.101 with the following normalization:

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

Maximum ratings

Operable temperature range	T	-40/+85	°C	
Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	5	V	
ESD voltage	V _{ESD}	100 ¹⁾	V	machine model, 10 pulses
Input power	P _{IN (TX)}	16	dBm	10000h, 55 °C

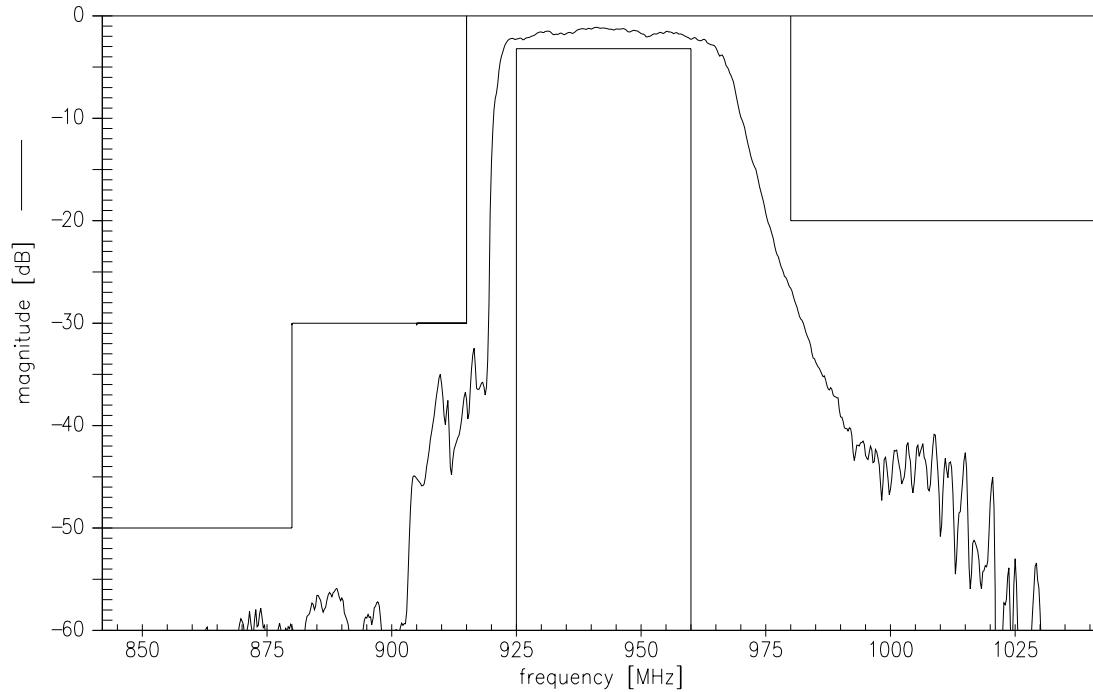
¹⁾ acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



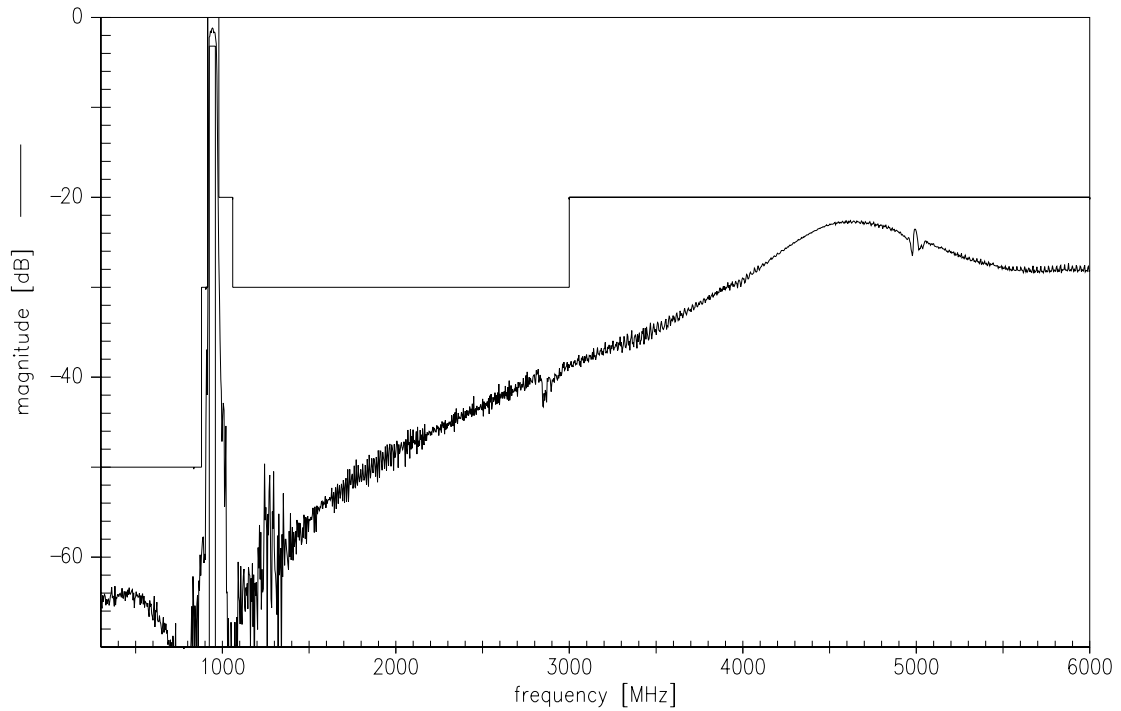
Data sheet



Transfer function



Transfer function (wideband)



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



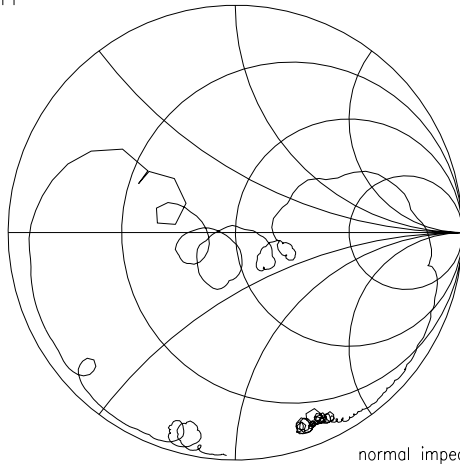
Data sheet



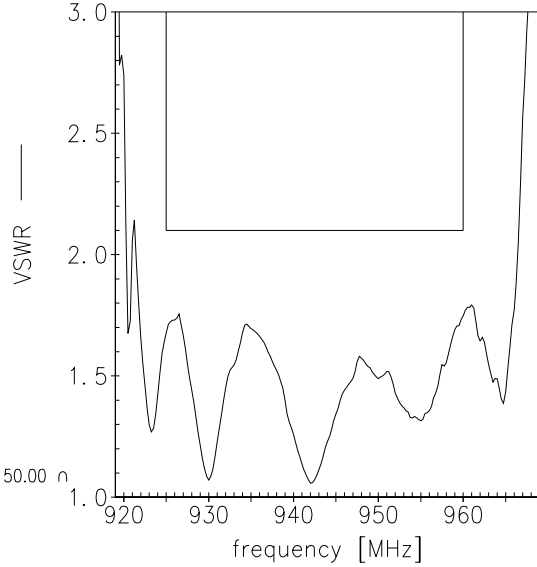
Smith charts

Unbalanced input (pin1/port1)

00S11

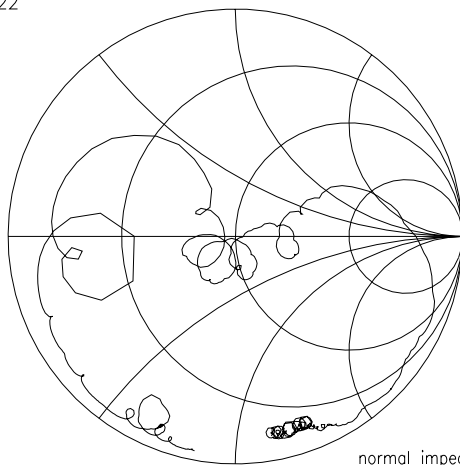


00S11

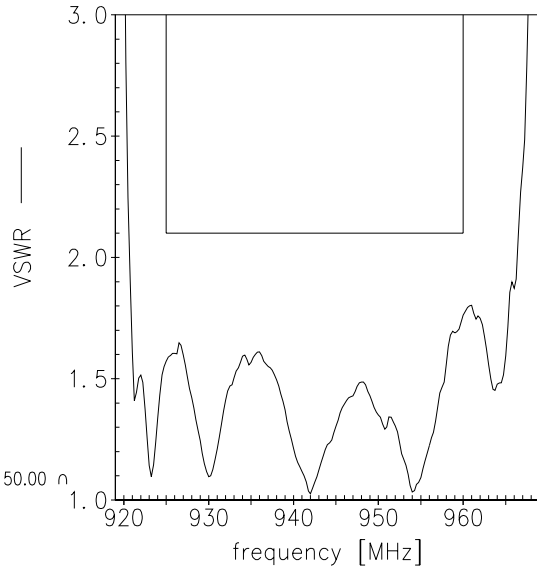


Unbalanced output (pin4/port2)

00S22



00S22





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References

Type	B9449
Ordering code	B39941B9449M410
Marking and package	C61157-A8-A3
Packaging	F61074-V8237-Z000
Date codes	L_1126
S-parameters	B9449_NB.s2p B9449_WB.s2p See file header for port/pin assignment table.
Soldering profile	S_6001
RoHS compatible	defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment."

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

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