



SAW Components

SAW filter

Base-station RF

Series/type:	B5109
Ordering code:	B39172B5109U410
Date:	December 23, 2008
Version:	2.0

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1732.50 MHz

Data sheet

SMD

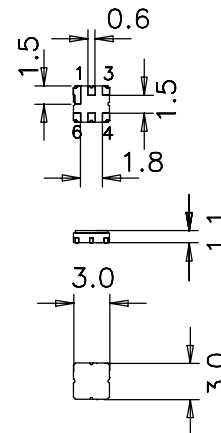
Application

- Low-loss base-station RF filter
- Low amplitude ripple
- No matching required for operation at 50Ω
- Usable passband 45 MHz



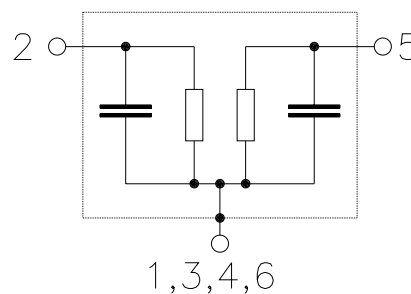
Features

- Package size $3.0 \times 3.0 \times 1.1 \text{ mm}^3$
- Package code DCC6C
- RoHS compatible
- Approximate weight 0.037 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**



Pin configuration

- 2 Input unbalanced
- 5 Output unbalanced
- 1,3,4,6 To be grounded



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



Data sheet



Characteristics

Temperature range for specification: $T = -40\text{ °C to }+85\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

		min.	typ. @ 25 °C	max.	
Center frequency	f_C	—	1732.50	—	MHz
Minimum insertion attenuation	α_{\min}				
	$f_C \pm 22.5\text{ MHz}$	—	1.7	2.5	dB
Maximum insertion attenuation	α_{\max}				
	$f_C \pm 22.5\text{ MHz}$	—	2.2	3.5	dB
Passband width					
	$\alpha_{\text{rel}} \leq 1.8\text{ dB}$ $B_{1.8\text{dB}}$	45	62	—	MHz
Amplitude ripple (p-p)	$\Delta\alpha$				
	$f_C \pm 22.5\text{ MHz}$	—	0.5	1.8	dB
VSWR					
Input	$f_C \pm 22.5\text{ MHz}$	—	1.7:1	2.0:1	
Output	$f_C \pm 22.5\text{ MHz}$	—	1.5:1	2.0:1	
Relative attenuation (relative to α_{\min})	α_{rel}				
	10 ... 1680 MHz	20	23	—	dB
	1680 ... 1690 MHz	4	10	—	dB
	1690 ... 1694 MHz	1.5	6.0	—	dB
	1771 ... 1778 MHz	1.5	9.5	—	dB
	1778 ... 1785 MHz	5	22	—	dB
	1785 ... 1805 MHz	10	28	—	dB
	1805 ... 1850 MHz	25	28	—	dB
	1850 ... 1880 MHz	30	33	—	dB
	1880 ... 3200 MHz	20	27	—	dB
	3200 ... 5200 MHz	4	7	—	dB



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Maximum ratings

Operable temperature range	T	-40/+85	°C	
Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	0	V	
ESD voltage	V _{ESD}	50 ¹⁾	V	machine model, 1 pulse
	V _{ESD}	225 ²⁾	V	human body model, 1 pulse
Input power				
1710 ... 1755 MHz	P _{IN}	10	dBm	CW

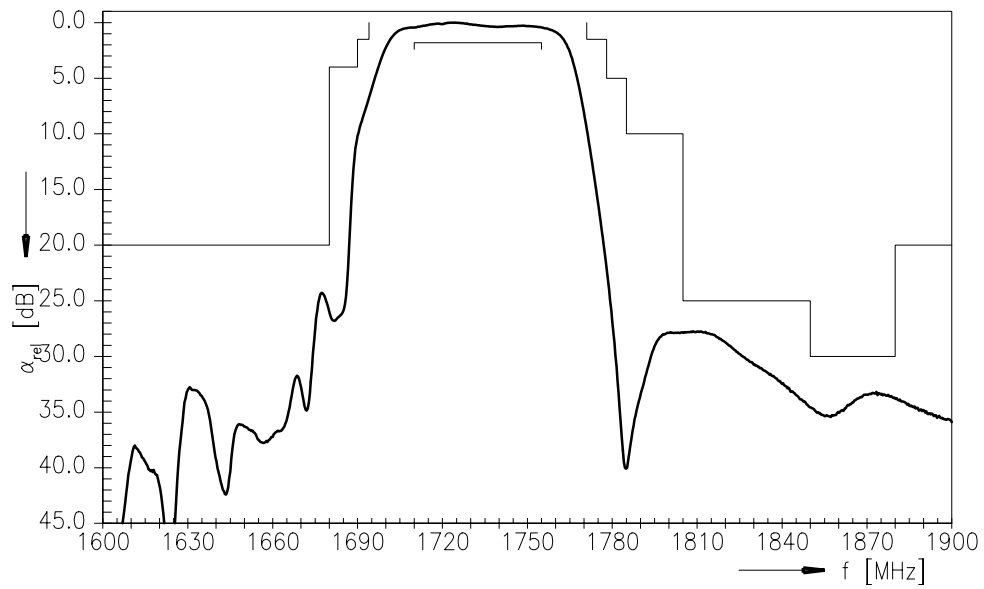
1) acc. to JESD22-A115A (machine model), 1 negative & 1 positive pulse.

2) acc. to JESD22-A114B (human body model), 1 negative & 1 positive pulse.

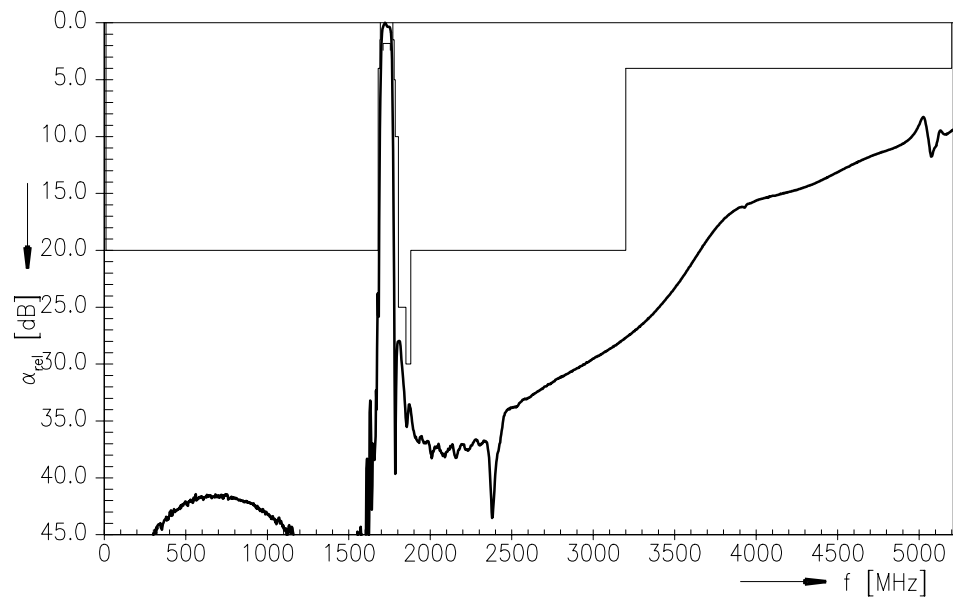
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Transfer function



Transfer function (wideband)



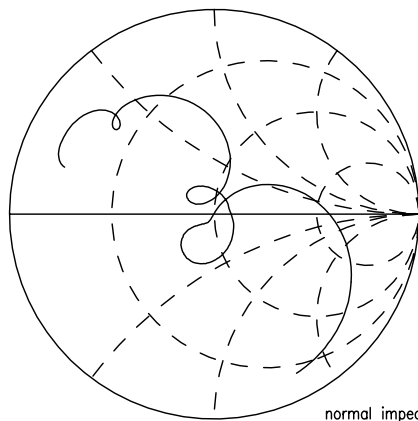
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Data sheet

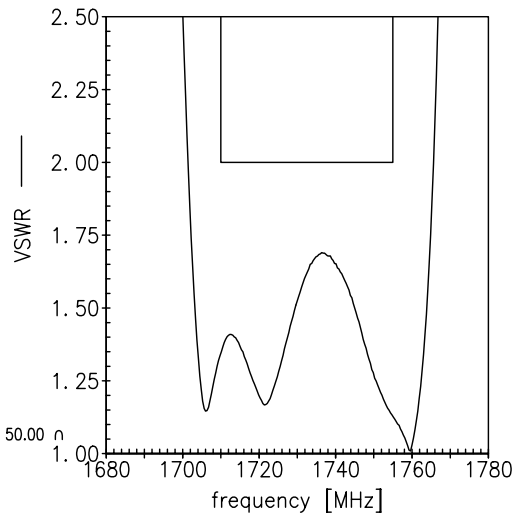


Smith charts

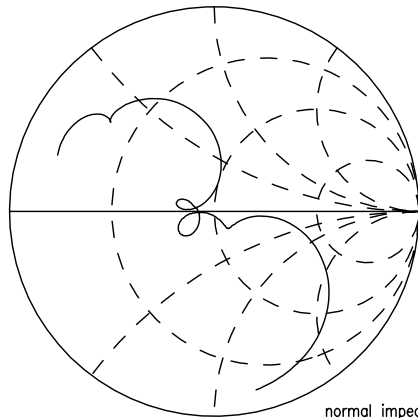
S_{11} function



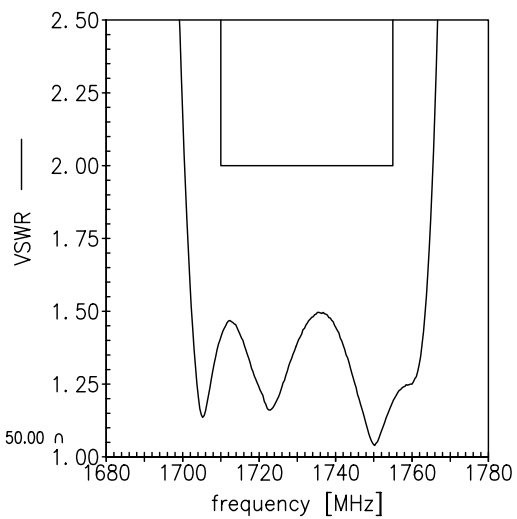
normal impedance: 50.00 Ω



S_{22} function



normal impedance: 50.00 Ω



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**References**

Type	B5109
Ordering code	B39172B5109U410
Marking and package	C61157-A7-A67
Packaging	F61074-V8168-Z000
Date codes	L_1126
S-parameters	B5109_NB.s2p B5109_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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7 December 23, 2008



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