SAW Components

SAW filter

WiMAX

Series/type:	**B5139**
Ordering code:	**B39262B5139U410**
Date:	September 25, 2012
Version:	2.0

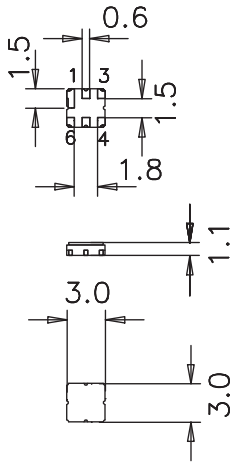
Data sheet SMD

Application

- Low-loss RF filter for WiMAX application
- Low amplitude ripple
- Matching network required for operation at 50Ω
- Usable passband 50 MHz

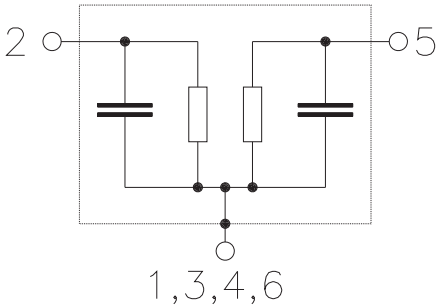
Features

- Package size 3.0 x 3.0 x 1.1 mm3
- Package code DCC6C
- RoHS compatible
- Approximate weight 0.037 g
- Package for Surface Mount Technology (SMT)
- Ni, gold-plated terminals
- Electrostatic Sensitive Device (ESD)
- Moisture Sensitivity Level 1



Pin configuration

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



Data sheet SMD

Characteristics

Temperature range for specification: T = –40 ˚C to +85 ˚C
Terminating source impedance: Z_S = 50Ω with matching network
Terminating load impedance: Z_L = 50Ω with matching network

		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	2593.0	—	MHz
Maximum insertion attenuation	α_{max}				
2568.0 ... 2618.0 MHz		—	2.4	3.5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
2568.0 ... 2618.0 MHz		—	1.0	1.5	dB
Input VSWR					
2568.0 ... 2618.0 MHz		—	1.7	2.1	
Output VSWR					
2568.0 ... 2618.0 MHz		—	1.5	2.1	
Attenuation	α				
10 ... 2450 MHz		20.0	30.0	—	dB
2450 ... 2500 MHz		25.0	27.0	—	dB
2500 ... 2525 MHz		11.0	13.0	—	dB
2662 ... 2670 MHz		10.0	24.0	—	dB
2670 ... 2690 MHz		17.0	31.0	—	dB
2690 ... 3500 MHz		25.0	27.0	—	dB
3500 ... 4000 MHz		25.0	38.0	—	dB

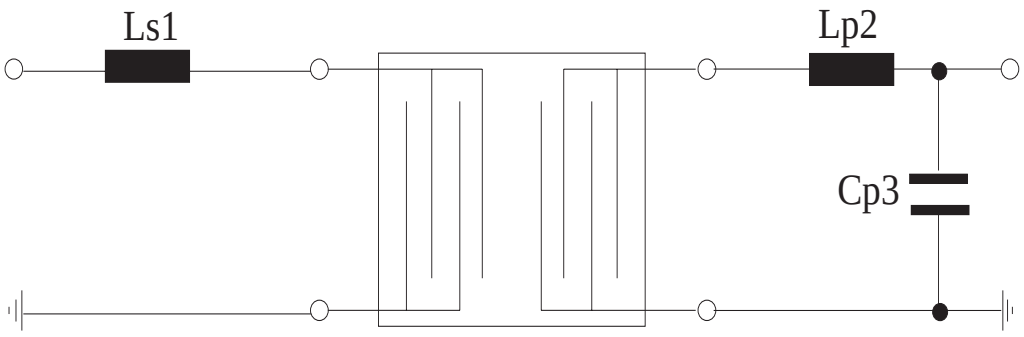
Maximum ratings

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, 10 pulses
Input power				
2568.0 ... 2618MHz	P_{IN}	14	dBm	CW, 10K hours, 85˚C
		10	dBm	CW, 100K hours, 85˚C

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

Testing Matching Network

(Element values depend on PCB layout)



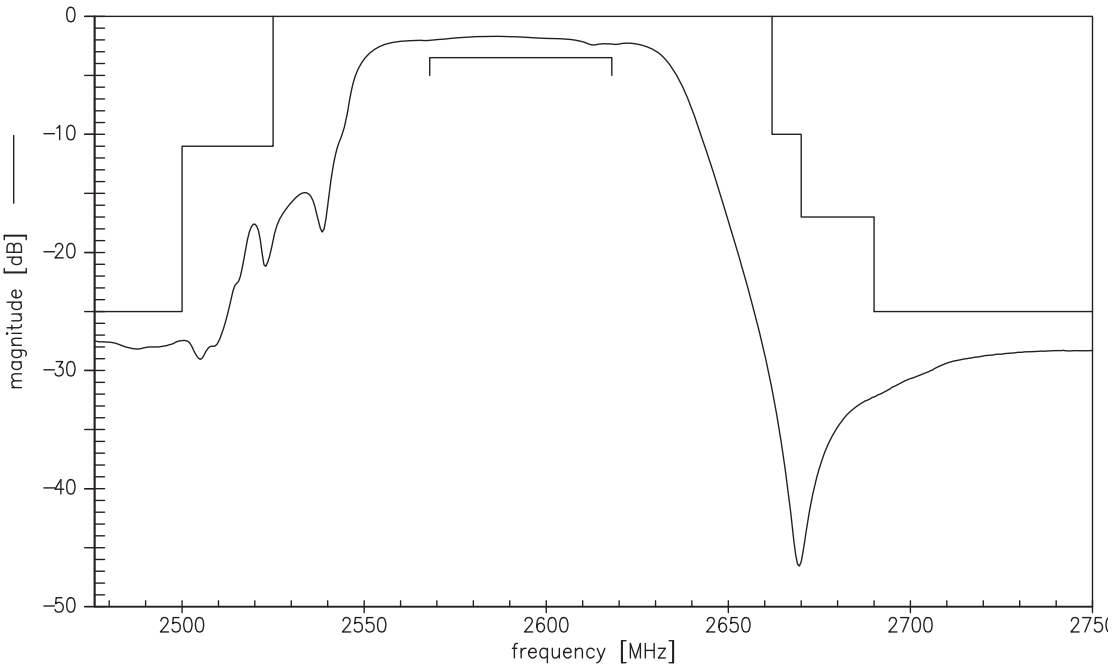
Ls1 = 1.0 nH

Lp2 = 1.0nH

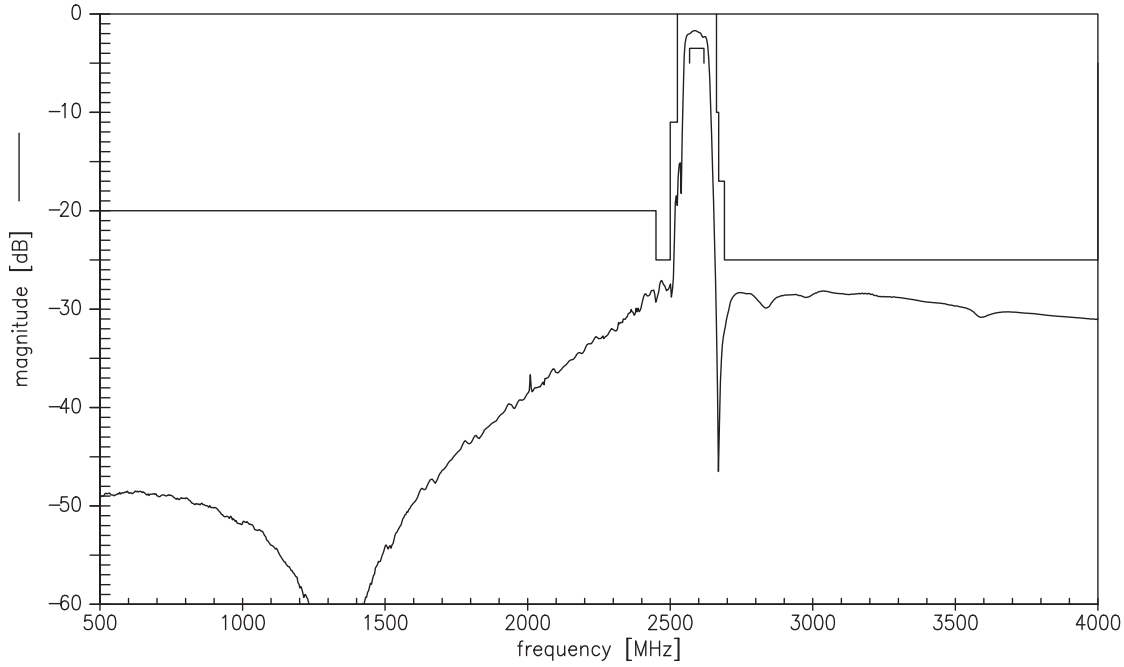
Cp3 = 1.0pF

Element values depend upon board layout.

Transfer function

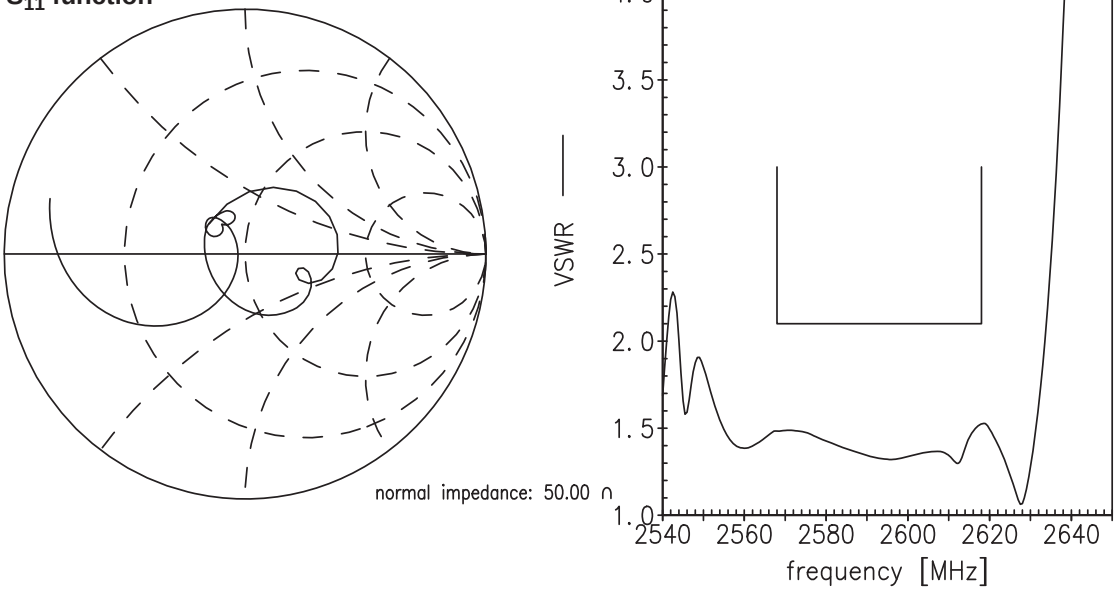


Transfer function (wideband)

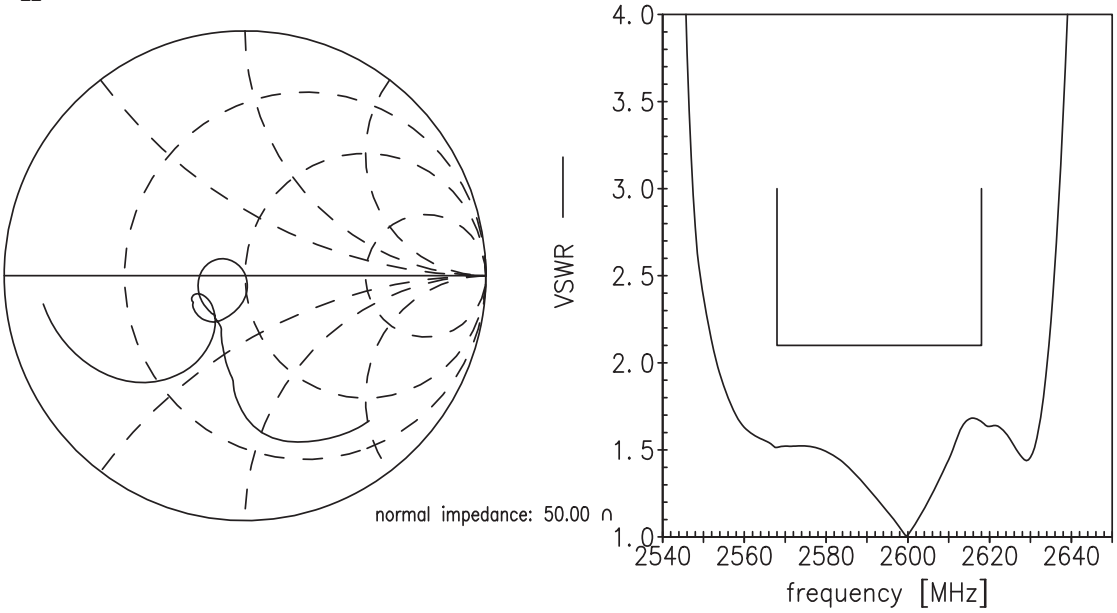


Smith charts

S_{11} function



S_{22} function



References

Type	B5139
Ordering code	B39262B5139U410
Marking and package	C61157-A8-A67
Packaging	F61074-V8168-Z000
Date codes	L_1126
S-parameters	B5139_NB.s2p B5139_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."
Matching coils	See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm

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