



SAW Components

SAW filter

WiMAX

Series/type:	B5139
Ordering code:	B39262B5139U410
Date:	May 17 , 2010
Version:	1.1

***Appendix to Sample Data sheet v1.0**

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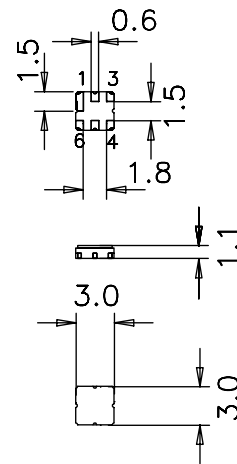
Application

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



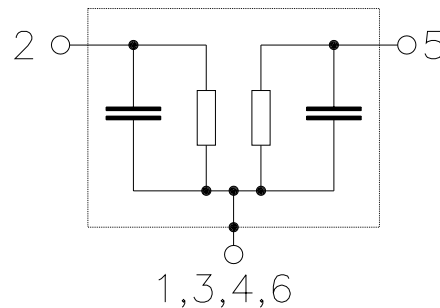
Features

- 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)**



Pin configuration

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





Characteristics

Temperature range for specification: T = -30 °C to+85 °C
 Terminating source impedance: Z_S = 50 Ω with matching network
 Terminating load impedance: Z_L = 50Ω with matching network

		LV78A ¹⁾			
		min.	typ. @ 25 °C	max.	
Center frequency	f _C	—	2593.0	—	MHz
Maximum insertion attenuation	α _{max} f _C ± 25.0 MHz	—	2.9	3.5	dB
Amplitude ripple (p-p)	Δα f _C ± 25.0 MHz	—	1.0	1.5	dB
VSWR					
Input	f _C ± 25.0 MHz	—	1.7:1	2.0:1	
Output	f _C ± 25.0 MHz	—	1.3:1	2.0:1	
Attenuation	α _{abs}				
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		20.0	31.0	—	dB
2690 ... 3500 MHz		25.0	27.0	—	dB
3500 ... 5000 MHz		25.0	38.0	—	dB
5000 ... 6000 MHz		25.0	42.0	—	dB

¹⁾ Values in columns min, typ and max indicate the development status of the current version.



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Characteristics

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

		LV78A ¹⁾			
		min.	typ. @ 25 °C	max.	
Center frequency	f _C	—	2593.0	—	MHz
Maximum insertion attenuation	α _{max}				
	f _C ± 25.0 MHz	—	2.9	3.5	dB
Amplitude ripple (p-p)	Δα				
	f _C ± 25.0 MHz	—	1.0	1.5	dB
VSWR					
Input	f _C ± 25.0 MHz	—	1.7:1	2.1:1	
Output	f _C ± 25.0 MHz	—	1.5:1	2.1:1	
Attenuation	α _{abs}				
	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 ... 5000 MHz	25.0	38.0	—	dB
	5000 ... 6000 MHz	25.0	42.0	—	dB

¹⁾ Values in columns min, typ and max indicate the development status of the current version.



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2593.0 MHz

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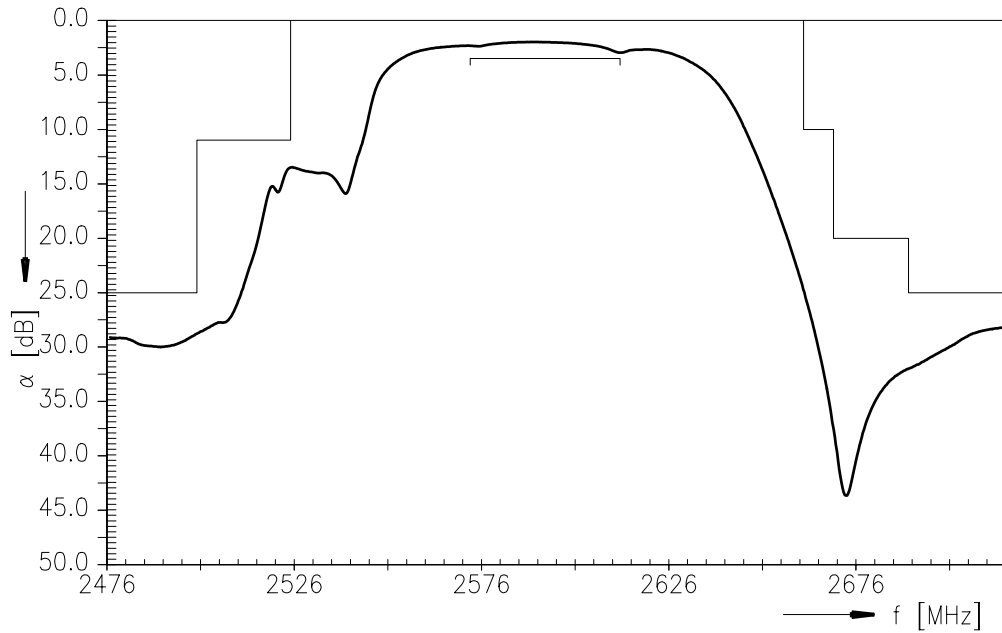
Maximum ratings

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
Input power 2568 ... 2618 MHz	P _{IN}	0	dBm	CW

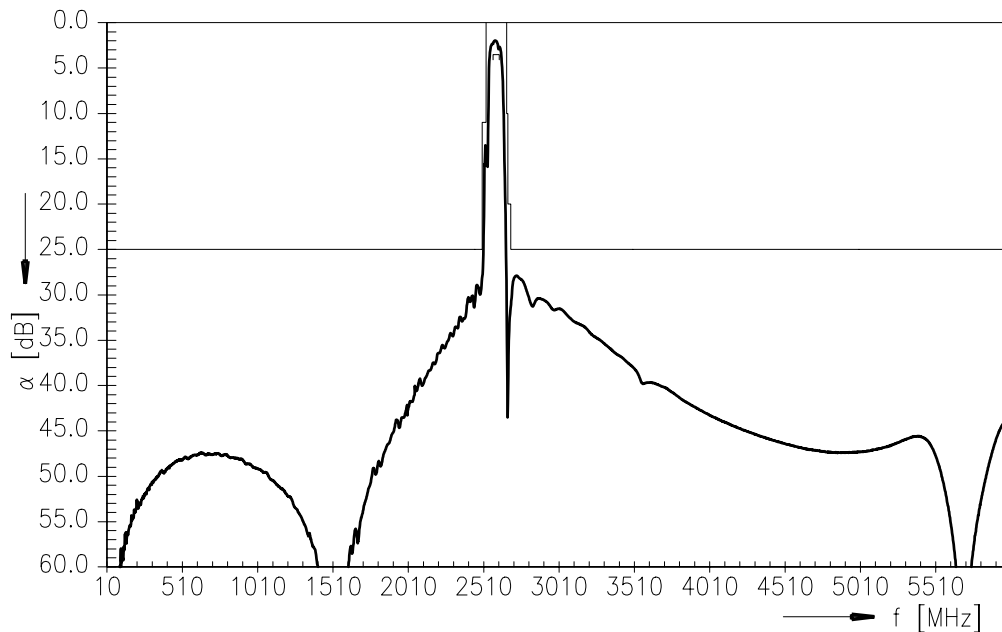
¹⁾ acc. to JESD22-A115A (machine model), 1 negative & 1 positive pulse.

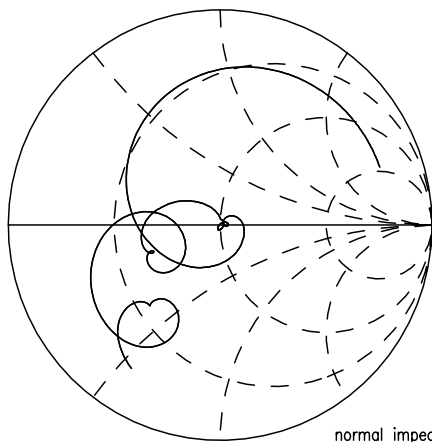


Transfer function (narrowband with matching network) (-30 °C to+85 °C)

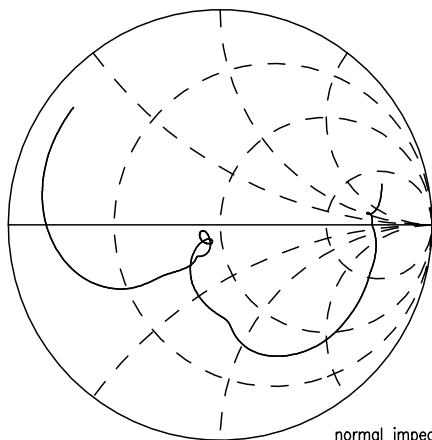
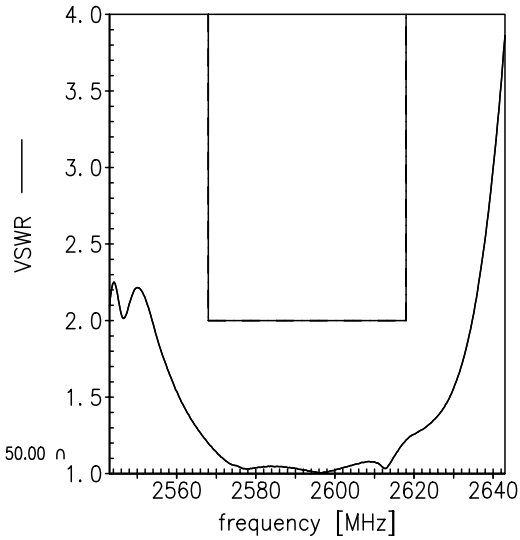


Transfer function (wideband with matching network) (-30 °C to+85 °C)

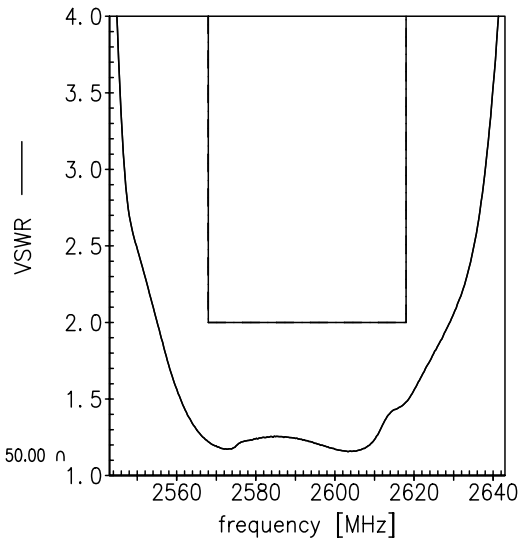




normal impedance: 50.00 Ω

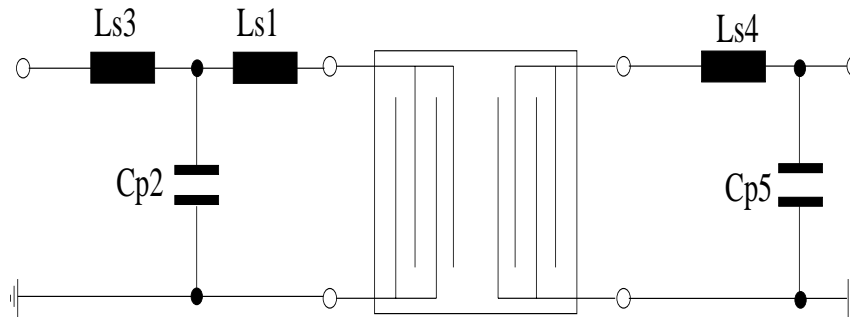


normal impedance: 50.00 Ω



Testing Matching Network

(Element values depend on PCB layout)



$$L_{s1} = 1.8\text{nH}$$

$$C_{p2} = 1.0\text{pF}$$

$$L_{s3} = 2.2\text{nH}$$

$$L_{s4} = 1.0\text{nH}$$

$$C_{p5} = 1.0\text{pF}$$

Element values depend upon board layout.



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2593.0 MHz

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References

Type	B5139
Ordering code	B39262B5139U410
Marking and package	C61157-A7-A67
Packaging	F61074-V8168-Z000
Date codes	L_1126
S-parameters	B5139_NB.s2p B5139_WB.s2p
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."

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9 May 17, 2010



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