



## **SAW Components**

### **SAW RF filter**

Automotive telematics

<b>Series/type:</b>	<b>B3520</b>
<b>Ordering code:</b>	<b>B39162B3520U410</b>
<b>Date:</b>	<b>February 22, 2010</b>
<b>Version:</b>	<b>2.3</b>



SAW Components

B3520

SAW RF filter

1575.42 MHz

Data sheet

**SMD**

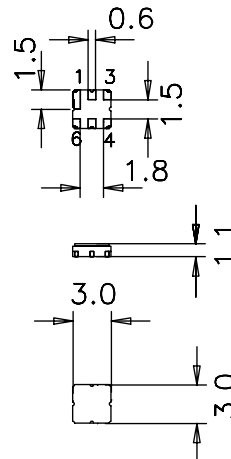
### Application

- Low-loss RF filter for GPS application
- No matching network required for operation at 50  $\Omega$
- Additional passband characteristics for Galileo



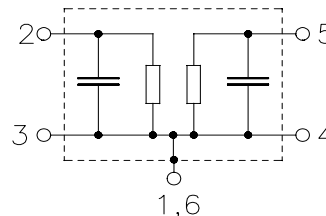
### Features

- Package size 3.0 x 3.0 x 1.1 mm<sup>3</sup>
- Package code DCC6C
- RoHS compatible
- Approximate weight 0.037 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- Lead free soldering compatible with J - STD20C
- AEC-Q200 qualified component family
- **Electrostatic Sensitive Device (ESD)**



### Pin configuration

- 2 Input
- 5 Output
- 1,3,4,6 Ground



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



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**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.	
<b>Center frequency</b>	$f_C$	—	1575.42	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$	—	1.3	1.8	dB
1574.22 ... 1576.62 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0.1	1.0	
1574.22 ... 1576.62 MHz					
<b>VSWR</b>		—	1.5	2.0	
1574.22 ... 1576.62 MHz					
<b>Relative attenuation (relative to <math>\alpha_{max}</math>)</b>	$\alpha$				
100.00 ... 1450.00 MHz		40	44	—	dB
1450.00 ... 1520.00 MHz		30	34	—	dB
1640.00 ... 1710.00 MHz		25	30	—	dB
1710.00 ... 1750.00 MHz		35	43	—	dB
1750.00 ... 1910.00 MHz		42	44	—	dB
1910.00 ... 2000.00 MHz		40	45	—	dB
<b>Temperature coefficient of frequency</b>	$TC_f$	—	-30	—	ppm/K



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**Characteristics**

Temperature range for specification:  $T = -40\text{ °C to }+105\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	1575.42	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$	—	1.3	2.0	dB
1574.22 ... 1576.62 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0.1	1.0	
1574.22 ... 1576.62 MHz					
<b>VSWR</b>		—	1.5	2.0	
1574.22 ... 1576.62 MHz					
<b>Relative attenuation (relative to <math>\alpha_{max}</math>)</b>	$\alpha$				
100.00 ... 1450.00 MHz		40	44	—	dB
1450.00 ... 1520.00 MHz		30	34	—	dB
1640.00 ... 1710.00 MHz		25	30	—	dB
1710.00 ... 1750.00 MHz		35	43	—	dB
1750.00 ... 1910.00 MHz		42	44	—	dB
1910.00 ... 2000.00 MHz		40	45	—	dB
<b>Temperature coefficient of frequency</b>	$TC_f$	—	-30	—	ppm/K



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**Additional Passband Characteristics for Galileo**

Temperature range for specification:  $T = -40\text{ °C to }+105\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$

		<b>min.</b>	<b>typ. @ 25 °C</b>	<b>max.</b>	
<b>Center frequency</b>	$f_C$	—	1575.42	—	MHz
<b>Maximum insertion attenuation</b> 1572.42 ... 1578.42 MHz	$\alpha_{\max}$	—	1.6	2.7	dB
<b>Amplitude ripple (p-p)</b> 1572.42 ... 1578.42 MHz	$\Delta\alpha$	—	0.6	1.6	dB
<b>VSWR</b> 1572.42 ... 1578.42 MHz		—	1.8	2.6	

**Maximum ratings**

Operable temperature range	T	-45/+125	°C	
Storage temperature range	T <sub>stg</sub>	-45/+125	°C	
DC voltage	V <sub>DC</sub>	6	V	
Source power	P <sub>S</sub>	10	dBm	source impedance 50 Ω
		20	dBm	824 MHz to 915 MHz, 1710 MHz to 1785 MHz

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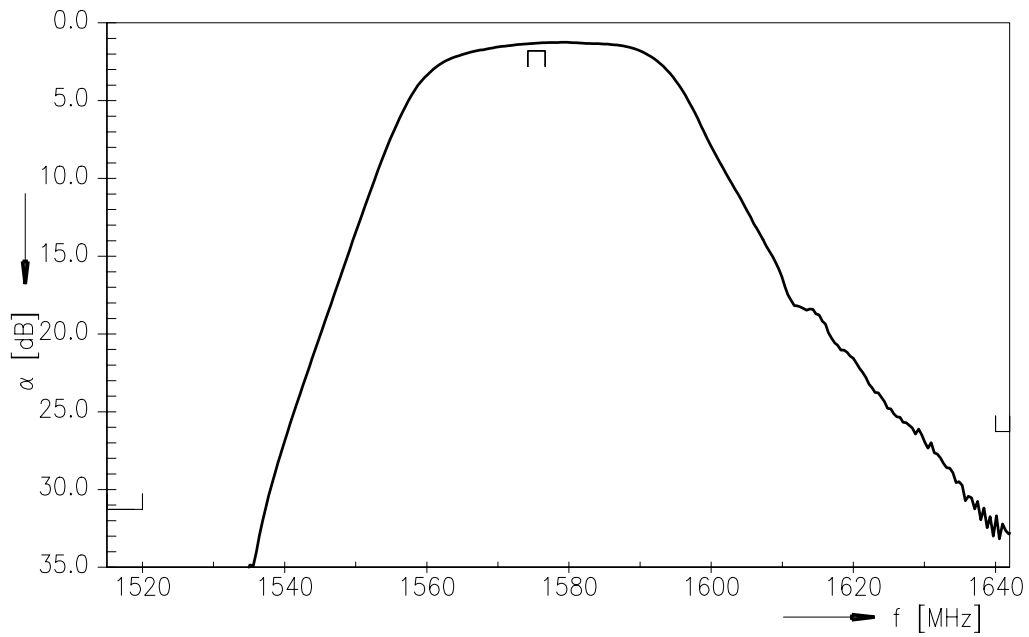
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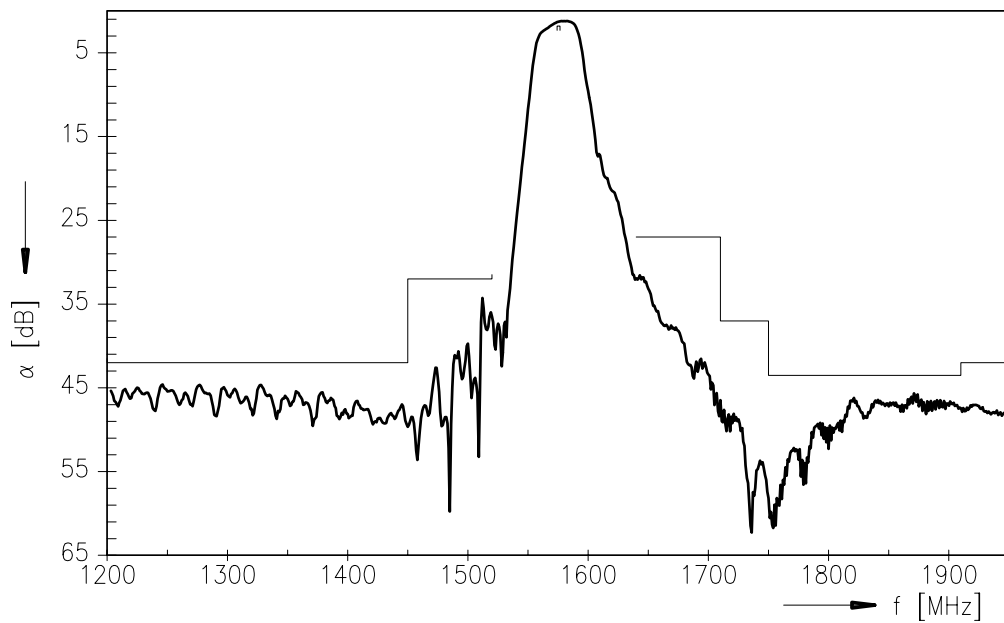
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Transfer function



Transfer function (wideband)



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## References

<b>Type</b>	B3520
<b>Ordering code</b>	B39162B3520U410
<b>Marking and package</b>	C61157-A7-A67
<b>Packaging</b>	F61074-V8168-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B3520_NB.s2p B3520_WB.s2p See file header for port/pin assignment table.
<b>Soldering profile</b>	S_6001
<b>RoHS compatible</b>	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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