



SAW Components

SAW Diplexer

Automotive telematics

Series/type:	B3518
Ordering code:	B39162B3518H910
Date:	April 07, 2011
Version:	2.1

Data sheet



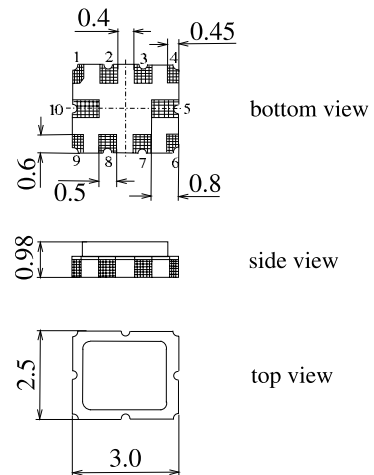
Application

- Low-loss Diplexer for GPS and GLONASS applications



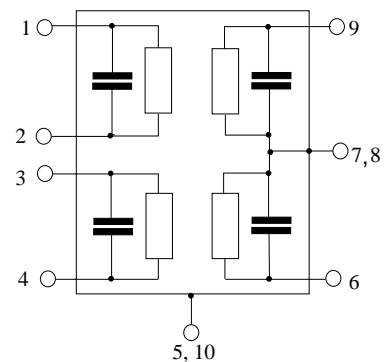
Features

- Package size 3.0 x 2.5 x 0.98 mm³
- Package code QCC10G
- RoHS compatible
- Approximate weight 0.027 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 configuration¹⁾

- 3 Input [Filter 1]
- 2 Input [Filter 2]
- 6 Output [Filter 1]
- 9 Output [Filter 2]
- 5,7,8,10 Case ground
- 1,4 to be grounded



1) The recommended pin configuration usually offers best suppression of electrical crosstalk. The filter characteristics refer to this configuration.

Data sheet


Characteristics Filter 1 (GPS)

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

		B3518			
		min.	typ.	max.	
Center frequency	f_C	—	1575.00	—	MHz
Maximum insertion attenuation	α_{\max}				
	1570.00 ... 1580.00 MHz	—	3.8	4.8	dB
Amplitude ripple					
	1570.00 ... 1580.00 MHz	—	1.0	2.0	dB
VSWR					
Input	1570.00 ... 1580.00 MHz	—	2.1	2.4	
Output	1570.00 ... 1580.00 MHz	—	2.0	2.3	
Attenuation	α_{abs}				
	10.00 ... 1000.00 MHz	50	60	—	dB
	1000.00 ... 1500.00 MHz	29	34	—	dB
	1597.00 ... 1607.00 MHz	15	24	—	dB
	1625.00 ... 1660.00 MHz	37	47	—	dB
	1680.00 ... 2000.00 MHz	34	38	—	dB

Data sheet


Characteristics Filter 2 (GLONASS)

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

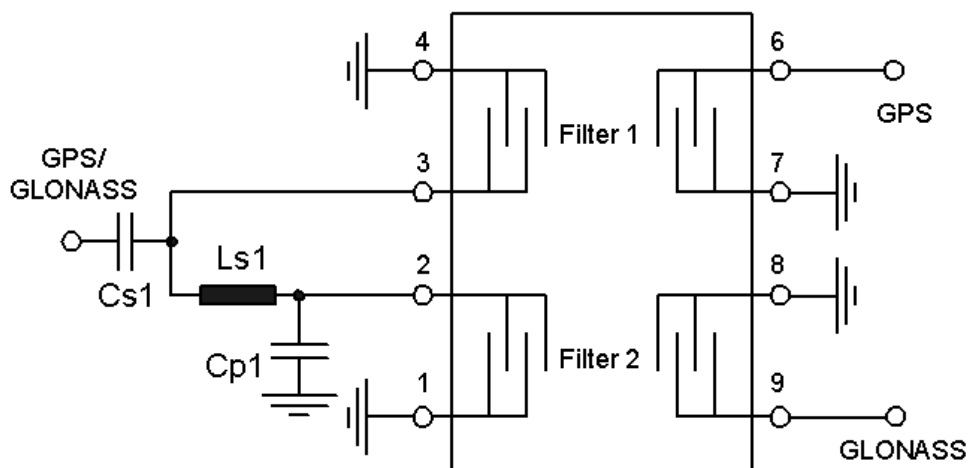
		B3518			
		min.	typ.	max.	
Center frequency	f_C	—	1602.00	—	MHz
Maximum insertion attenuation	α_{\max}	—	3.6	4.5	dB
1597.00 ... 1607.00 MHz					
Amplitude ripple		—	1.0	1.8	dB
1597.00 ... 1607.00 MHz					
VSWR					
Input	1597.00 ... 1607.00 MHz	—	2.15	2.45	
Output	1597.00 ... 1607.00 MHz	—	1.8	2.3	
Group delay ripple¹⁾ (p-p)		—	5	25	ns
1597.0 ... 1607.0 MHz					
Attenuation	α_{abs}				
10.00 ... 1000.00 MHz		50	55	—	dB
1000.00 ... 1500.00 MHz		29	34	—	dB
1570.00 ... 1580.00 MHz		12	22	—	dB
1625.00 ... 1640.00 MHz		6	17	—	dB
1640.00 ... 1660.00 MHz		27	37	—	dB
1680.00 ... 2000.00 MHz		35	40	—	dB

1) Averaged over 500 kHz

Data sheet

SMD

Matching network to 50 Ω



Cs1 = 6.8pF

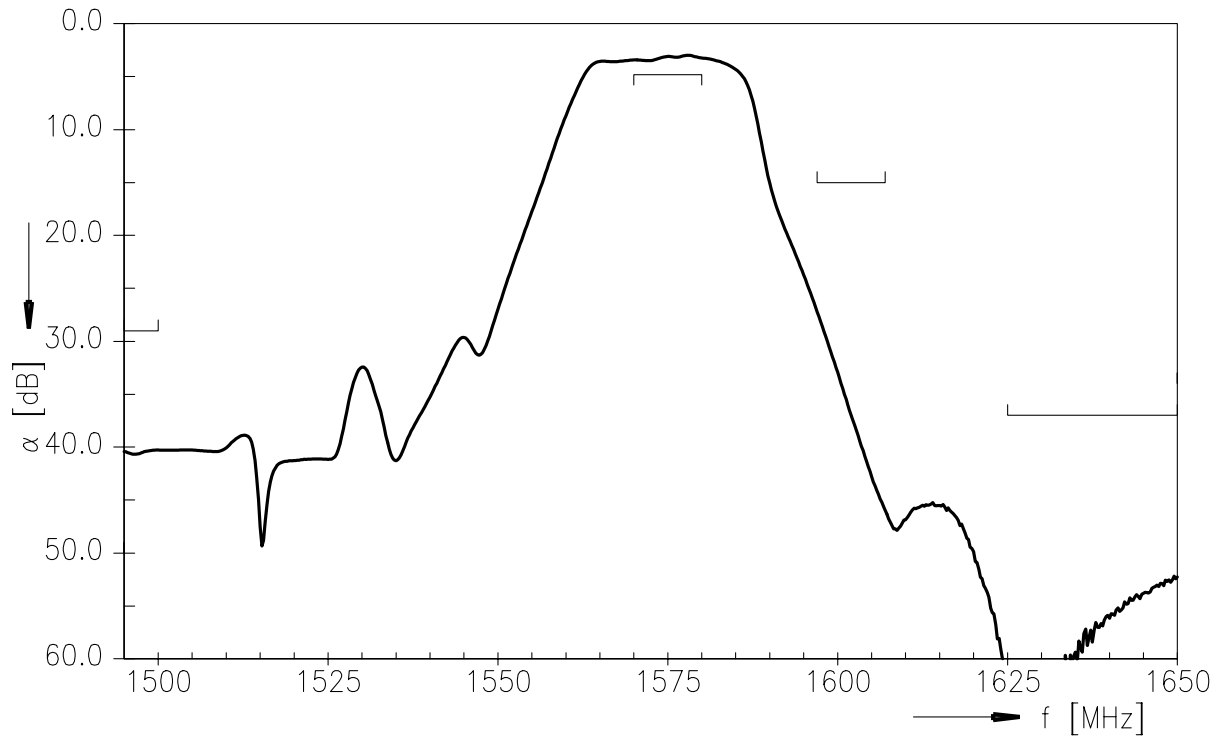
Ls1 = 5.6nH

Cp1 = 0.2pF

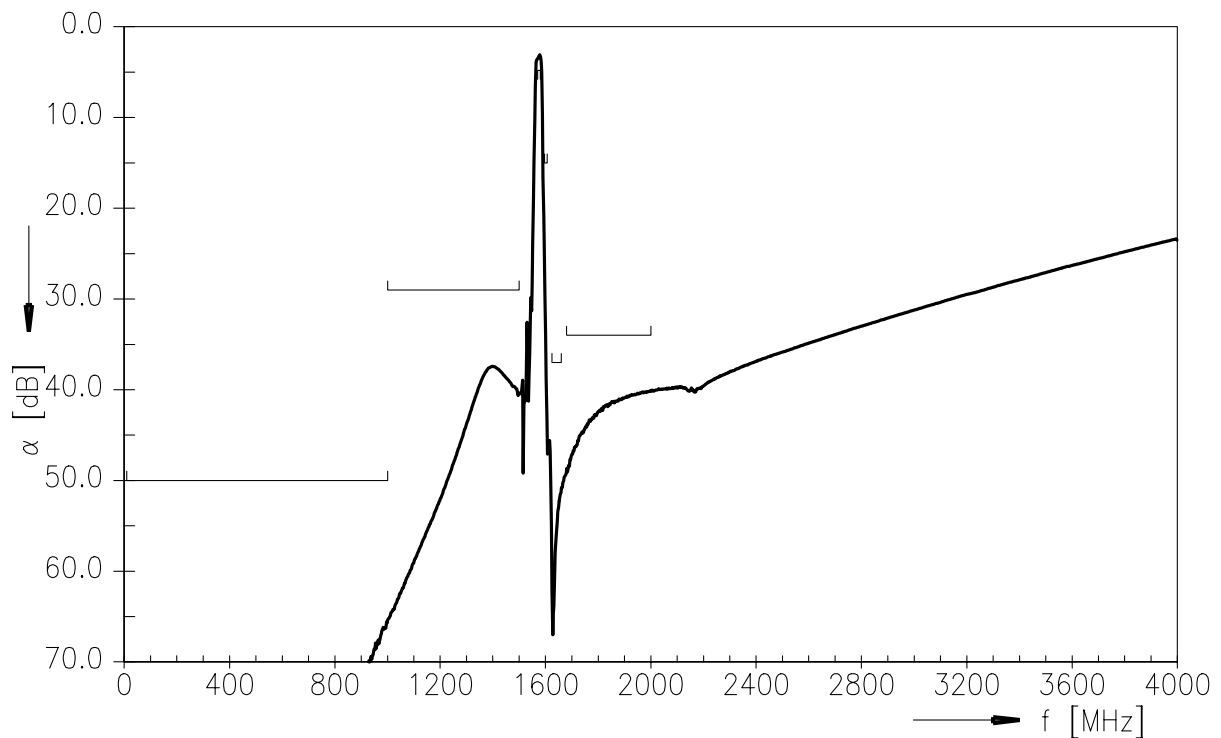
Maximum ratings

Operable temperature range	T	-45/+125	°C	
Storage temperature range	T _{stg}	-45/+125	°C	
DC voltage	V _{DC}	6	V	
Input power	P _{IN}	10	dBm	

Transfer function Filter 1



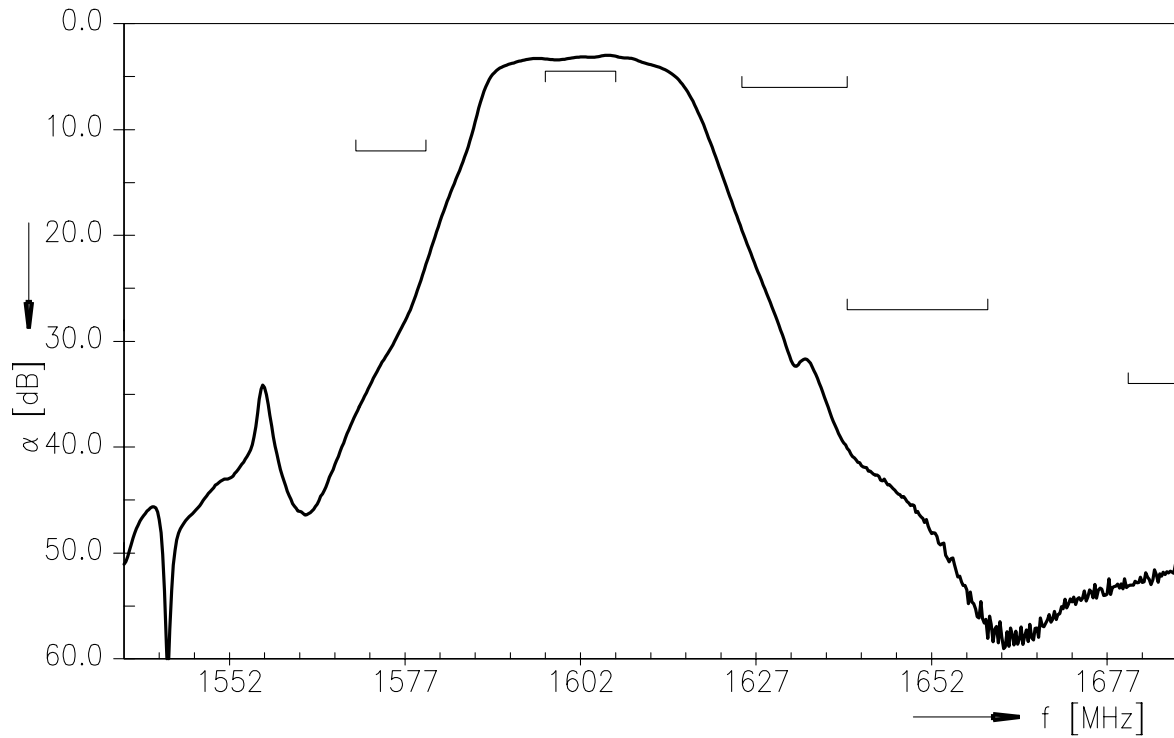
Transfer function Filter 1 (wideband)



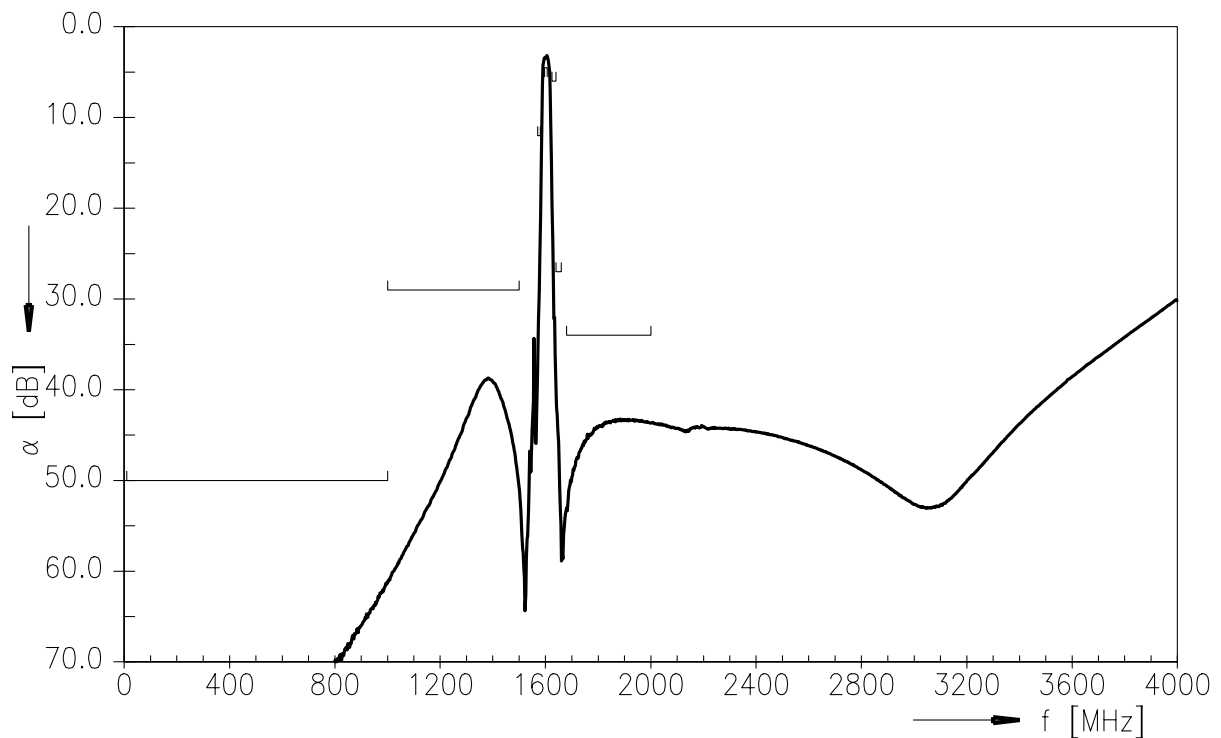
Data sheet



Transfer function Filter 2



Transfer function Filter 2 (wideband)



Group delay time Filter 2





References

Type	B3518
Ordering code	B39162B3518H910
Marking and package	C61157-A7-A142
Packaging	F61074-V8174-Z000
Date codes	L_1126
S-parameters	B3518_NB.s4p, B3518_WB.s4p 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."
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.
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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