



# SAW Components

## SAW filter

Automotive telematics

<b>Series/type:</b>	<b>B3912</b>
<b>Ordering code:</b>	<b>B39242B3912U410</b>
<b>Date:</b>	<b>April 07, 2011</b>
<b>Version:</b>	<b>2.1</b>

Data sheet



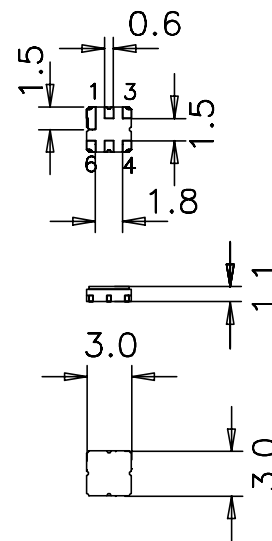
**Application**

- Low-loss RF filter for automotive telematics



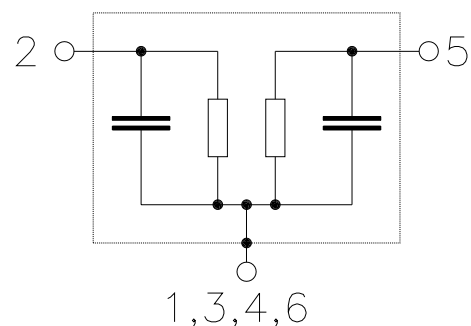
**Features**

- 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 Case ground



Data sheet


**Characteristics**

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:  $Z_L = 50\ \Omega$  and matching network

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	2448.50	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	1.7	3.0	dB
2400.00 ... 2497.00 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0.7	2.0	dB
2400.00 ... 2497.00 MHz					
<b>VSWR</b>					
Input	2400.00 ... 2497.00 MHz	—	1.5	2.0	
Output	2400.00 ... 2497.00 MHz	—	1.5	2.0	
<b>Attenuation</b>	$\alpha$				
	50.00 ... 2300.00 MHz	20	24	—	dB
	2600.00 ... 3500.00 MHz	22	26	—	
	3500.00 ... 5000.00 MHz	25	33	—	



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B3912

SAW filter

2448.50 MHz

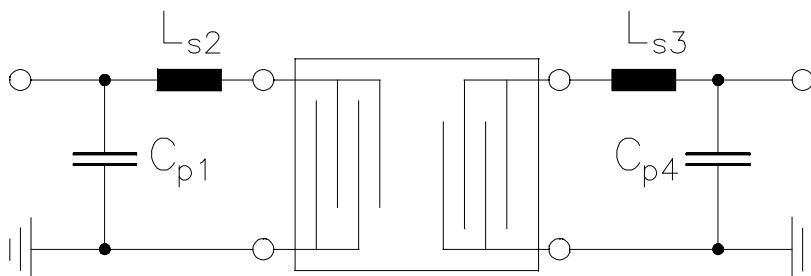
Data sheet



### 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>	20	dBm	source impedance 50 Ω

Data sheet


**Matching network to 50  $\Omega$**  (element values depend on pcb layout and equivalent circuit)


$$C_{p1} = 1.0 \text{ pF}$$

$$L_{s2} = 2.7 \text{ nH}$$

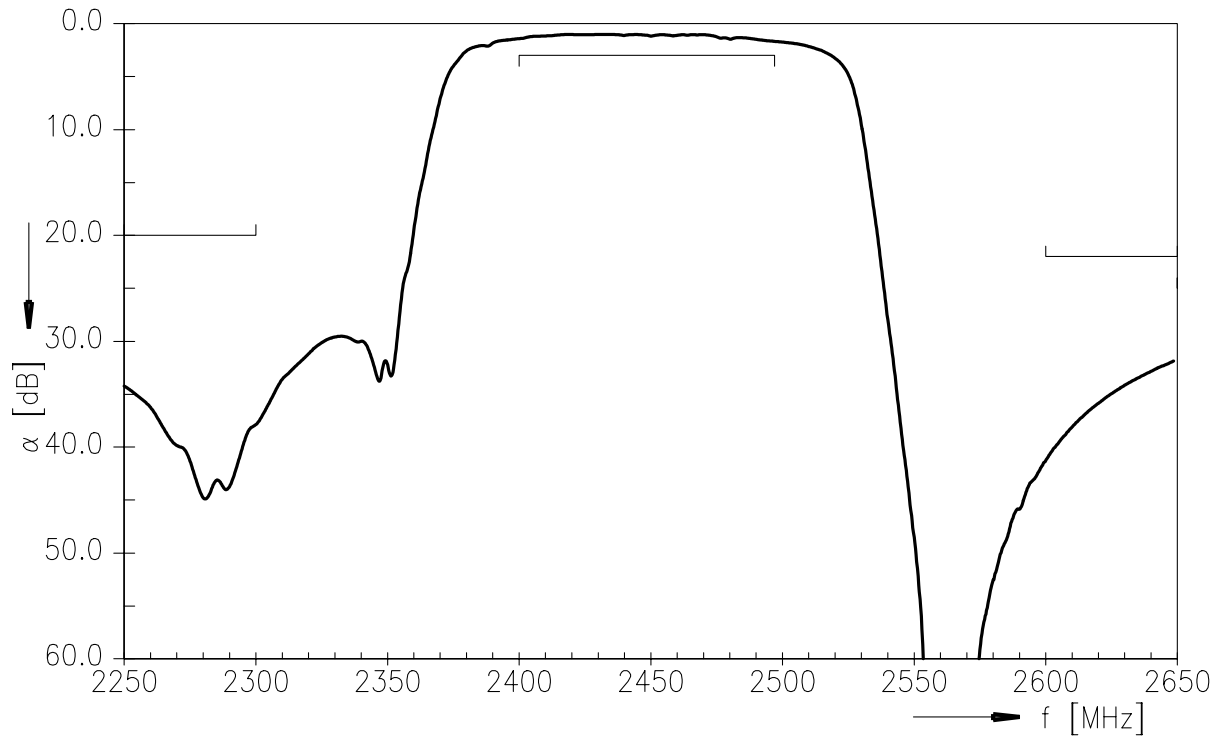
$$L_{s3} = 2.7 \text{ nH}$$

$$C_{p4} = 1.0 \text{ pF}$$

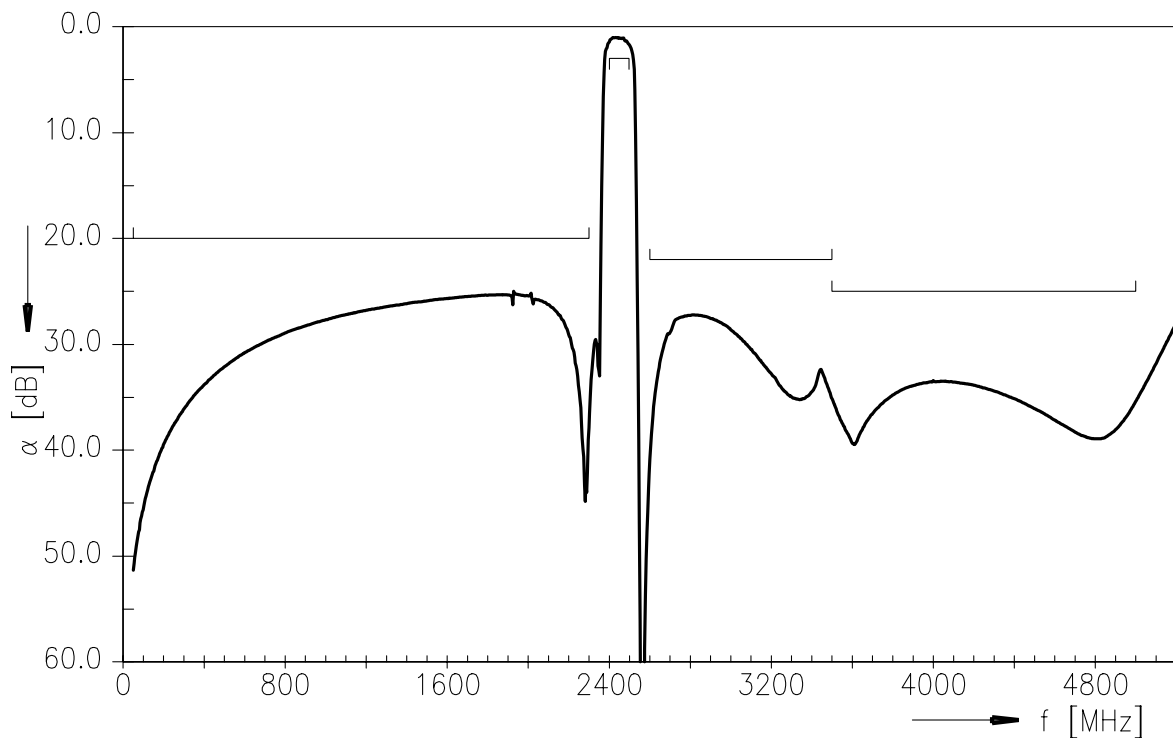
Data sheet



Transfer function



Transfer function (wideband)



**References**

<b>Type</b>	B3912
<b>Ordering code</b>	B39242B3912U410
<b>Marking and package</b>	C61157-A7-A67
<b>Packaging</b>	F61074-V8228-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B3912_NB.s2p, B3912_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."
<b>Moldability</b>	Before using in overmolding environment, please contact your EPCOS sales office.
<b>Matching coils</b>	See Inductor pdf-catalog <a href="http://www.tdk.co.jp/tefe02/coil.htm#aname1">http://www.tdk.co.jp/tefe02/coil.htm#aname1</a> and Data Library for circuit simulation <a href="http://www.tdk.co.jp/etvcl/index.htm">http://www.tdk.co.jp/etvcl/index.htm</a>

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