



RF360 Europe GmbH

A Qualcomm – TDK Joint Venture

## SAW Components

### SAW RF filter

Automotive telematics

Series/type:	B3514
Ordering code:	B39941B3514H910
Date:	December 07, 2012
Version:	2.2

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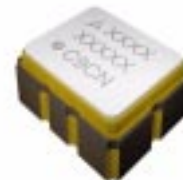
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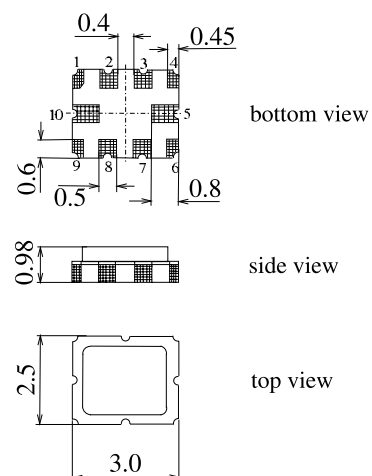
Data sheet


**Application**

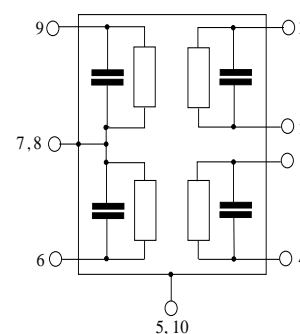
- Low-loss RF filter for mobile telephone GSM 850/900 system, receive path
- Usable passband:  
 Filter 1 (GSM850): 25 MHz  
 Filter 2 (GSM900): 35 MHz
- Unbalanced to balanced operation of both filters
- Impedance transformation from 50 Ω to 150 Ω for both filters
- Suitable for GPRS class 1 to 12


**Features**

- Package size 3.0 x 2.5 x 0.98 mm<sup>3</sup>
- 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
- Passivation layer Elpas
- AEC-Q200 qualified component family
- **Electrostatic Sensitive Device (ESD)**


**Pin configuration<sup>1)</sup>**

- 1,2 Output, balanced [Filter 1]
- 3,4 Output, balanced [Filter 2]
- 6 Input [Filter 2]
- 9 Input [Filter 1]
- 5,7,8,10 Case 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 (GSM850)**

Temperature range for specification:  $T = -40\text{ °C to }+85\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$  (unbalanced)  
 Terminating load impedance:  $Z_L = 150\ \Omega$  (balanced) || 56 nH

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	881.5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	1.8	2.2	dB
869.0 ... 894.0 MHz					
<b>Amplitude ripple</b>		—	0.8	1.1	dB
869.0 ... 894.0 MHz					
<b>VSWR</b>		—	1.8	2.1	
<b>Output amplitude balance</b> ( $ S_{31}/S_{21} $ )		-1.5		1.5	dB
869.0 ... 894.0 MHz					
<b>Output phase balance</b> ( $\phi(S_{31}) - \phi(S_{21}) + 180^\circ$ )		-12.0		12.0	degree
869.0 ... 894.0 MHz					
<b>Attenuation</b>	$\alpha_{\text{abs}}$	46	52	—	dB
10.00 ... 480.00 MHz					
480.00 ... 849.00 MHz		30	34	—	
915.00 ... 1000.00 MHz		23	27	—	
1000.00 ... 3000.00 MHz		30	34	—	

Data sheet


**Characteristics Filter 2 (GSM900)**

Temperature range for specification:  $T = -40\text{ °C to }+85\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$  (unbalanced)  
 Terminating load impedance:  $Z_L = 150\ \Omega$  (balanced) || 68 nH

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	942.5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	1.9	3.0 <sup>1)</sup>	dB
925.0 ... 960.0 MHz					
<b>Amplitude ripple</b>		—	0.9	1.8	dB
925.0 ... 960.0 MHz					
<b>VSWR</b>		—	1.9	2.3	
925.0 ... 960.0 MHz					
<b>Output amplitude balance</b> ( $ S_{31}/S_{21} $ )		-2.5		2.5	dB
925.0 ... 960.0 MHz					
<b>Output phase balance</b> ( $\phi(S_{31}) - \phi(S_{21}) + 180^\circ$ )		-12.0		12.0	degree
925.0 ... 960.0 MHz					
<b>Attenuation</b>	$\alpha_{\text{abs}}$				
10.00 ... 480.00 MHz		46	52	—	dB
480.00 ... 880.00 MHz		30	35	—	
880.00 ... 905.00 MHz		24	27	—	dB
905.00 ... 915.00 MHz		11	18	—	
980.00 ... 1050.00 MHz		23	30	—	dB
1050.00 ... 3000.00 MHz		30	34	—	

 1)  $T = -25\text{ °C to }+75\text{ °C}$  : 2.5 dB

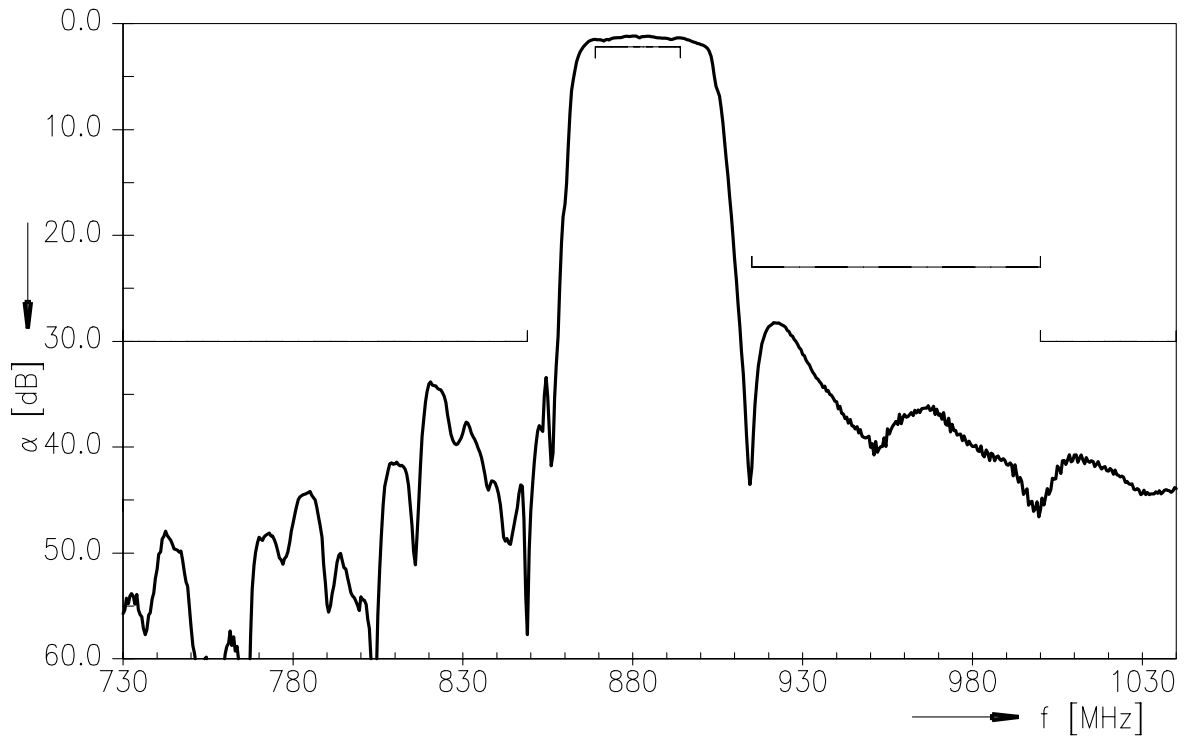

**Maximum ratings**

Operable temperature range	T	-45/+125	°C	
Storage temperature range	T <sub>stg</sub>	-45/+125	°C	
DC voltage	V <sub>DC</sub>	5	V	
ESD voltage	V <sub>ESD</sub>	50	V	
Input power at Tx bands: GSM850, GSM900	P <sub>IN</sub>	15	dBm	peak power of GSM signal duty cycle 4:8

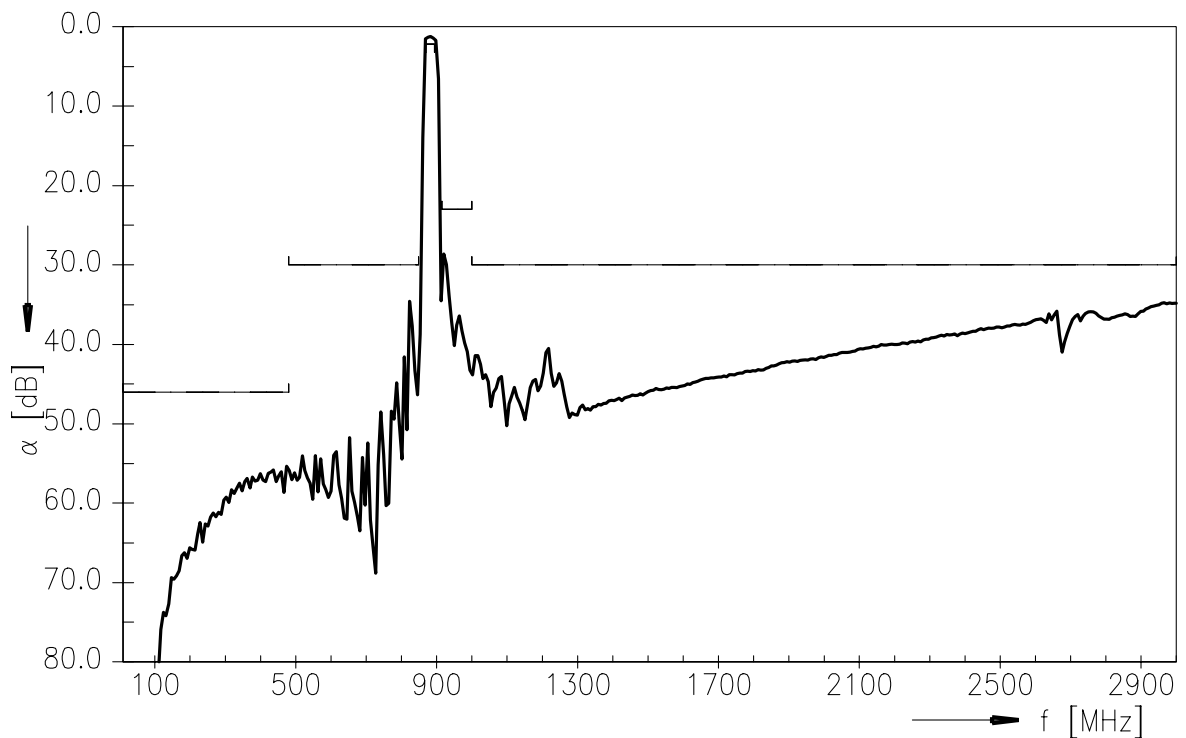
Data sheet



**Transfer function Filter 1**



**Transfer function Filter 1 (wideband)**

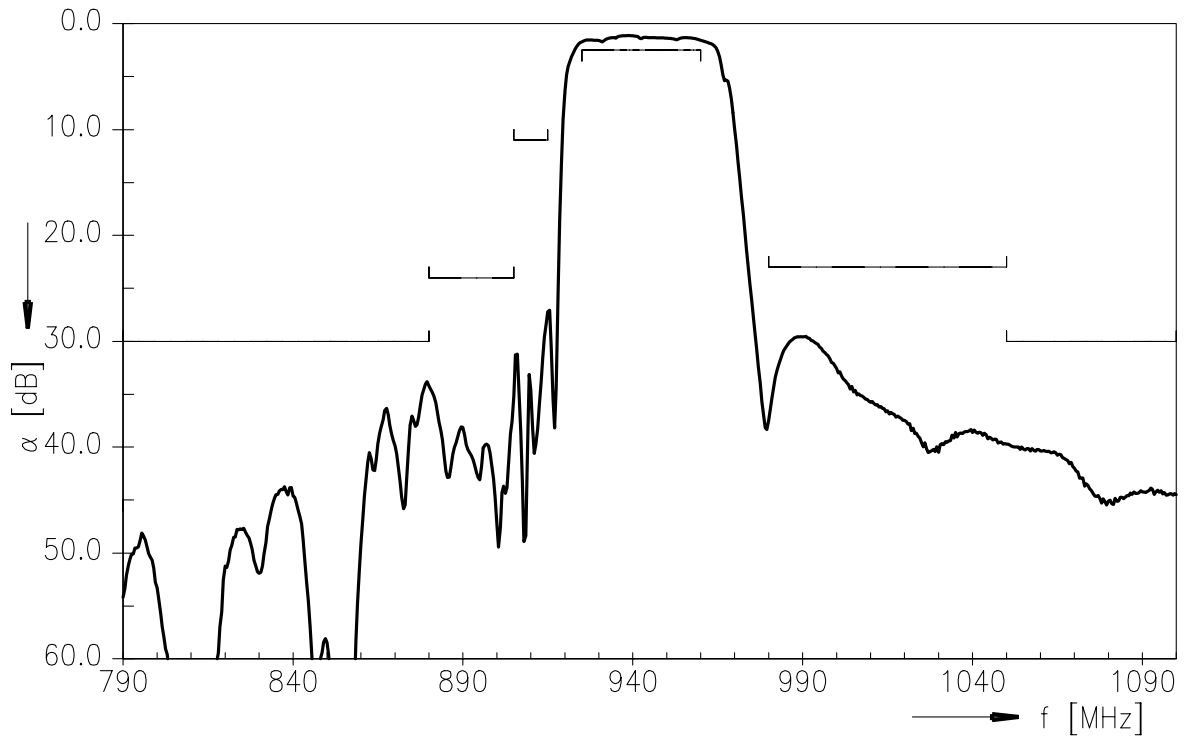




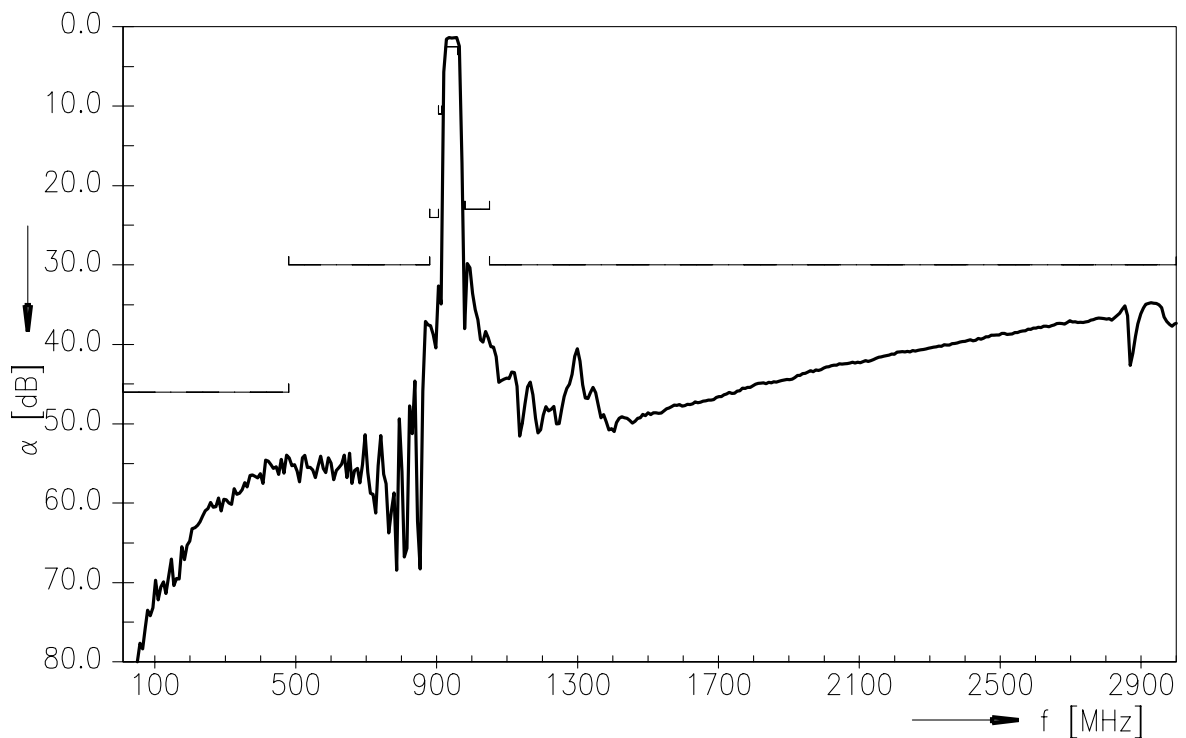
Data sheet



**Transfer function Filter 2**



**Transfer function Filter 2 (wideband)**




**References**

<b>Type</b>	B3514
<b>Ordering code</b>	B39941B3514H910
<b>Marking and package</b>	C61157-A7-A142
<b>Packaging</b>	F61074-V8174-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B3514_LB_NB.s3p B3514_LB_WB.s3p B3514_UB_NB.s3p B3514_UB_WB.s3p See file header for port/pin assignment table.
<b>Soldering profile</b>	S_6001
<b>RoHS compatible</b>	RoHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8 <sup>th</sup> , 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases.

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**Published by EPCOS AG**  
**Systems, Acoustics, Waves Business Group**  
**P.O. Box 80 17 09, 81617 Munich, GERMANY**

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