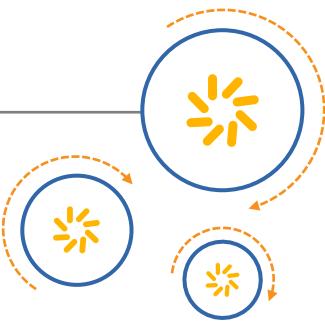




RF360 Europe GmbH

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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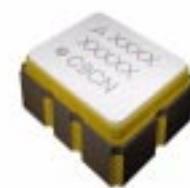
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Data sheet



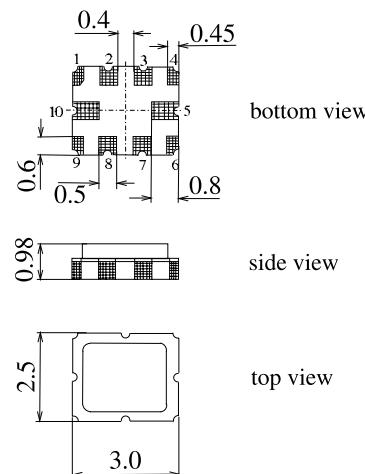
Application

- 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 50Ω to 150Ω for both filters
- Suitable for GPRS class 1 to 12

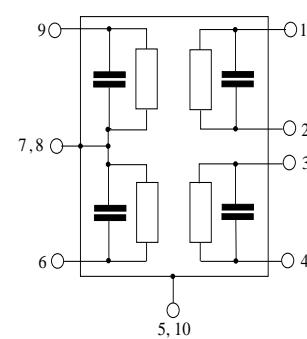


Features

- Package size $3.0 \times 2.5 \times 0.98 \text{ mm}^3$
- 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 configuration¹⁾

- 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.

SAW Components
B3514
SAW RF filter
881.5/942.5 MHz
Data sheet

Characteristics Filter 1 (GSM850)

Temperature range for specification:

 $T = -40 \text{ }^{\circ}\text{C} \text{ to } +85 \text{ }^{\circ}\text{C}$

Terminating source impedance:

 $Z_S = 50 \Omega \text{ (unbalanced)}$

Terminating load impedance:

 $Z_L = 150 \Omega \text{ (balanced) } || 56 \text{ nH}$

			min.	typ. @ 25 °C	max.	
Center frequency		f_C	—	881.5	—	MHz
Maximum insertion attenuation		α_{\max}	—	1.8	2.2	dB
	869.0 ... 894.0	MHz				
Amplitude ripple			—	0.8	1.1	dB
	869.0 ... 894.0	MHz				
VSWR			—	1.8	2.1	
	869.0 ... 894.0	MHz				
Output amplitude balance (S₃₁/S₂₁)			—1.5		1.5	dB
	869.0 ... 894.0	MHz				
Output phase balance			—12.0		12.0	degree
	($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)					
	869.0 ... 894.0	MHz				
Attenuation		α_{abs}	46	52	—	dB
	10.00 ... 480.00	MHz	30	34	—	dB
	480.00 ... 849.00	MHz	23	27	—	dB
	915.00 ... 1000.00	MHz	30	34	—	dB
	1000.00 ... 3000.00	MHz				


Characteristics Filter 2 (GSM900)

Temperature range for specification:

 $T = -40 \text{ }^{\circ}\text{C} \text{ to } +85 \text{ }^{\circ}\text{C}$

Terminating source impedance:

 $Z_S = 50 \Omega \text{ (unbalanced)}$

Terminating load impedance:

 $Z_L = 150 \Omega \text{ (balanced) } || 68 \text{ nH}$

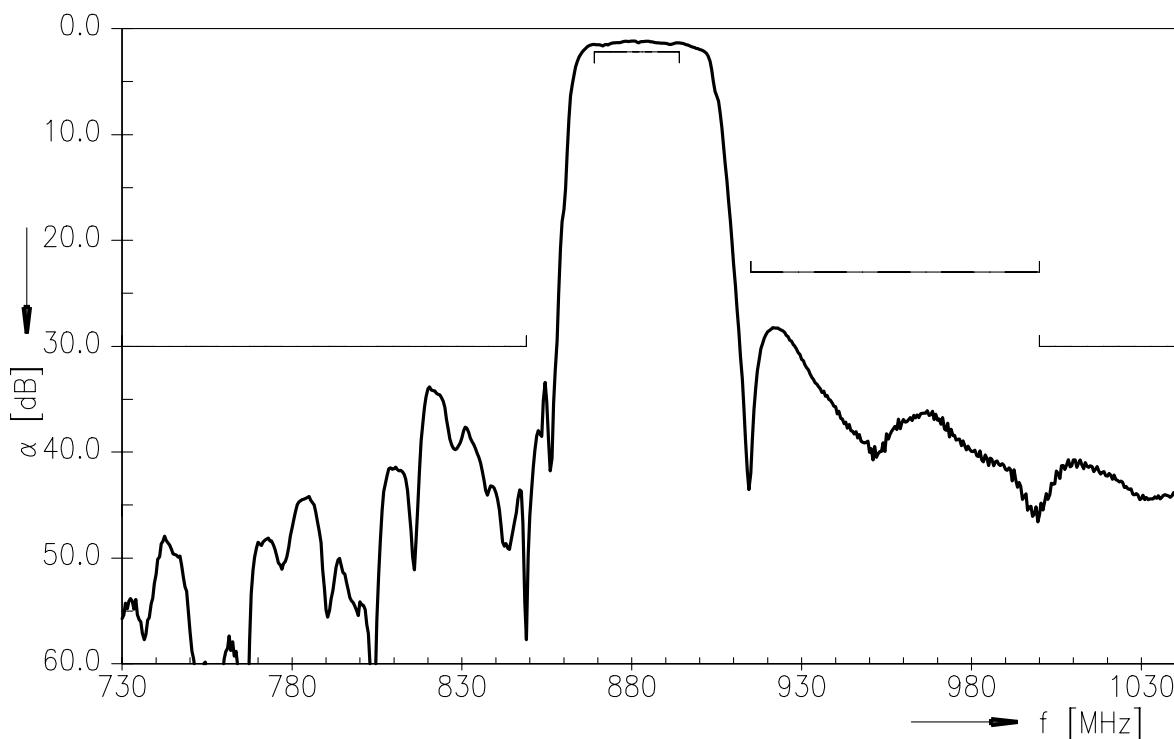
			min.	typ. @ 25 °C	max.	
Center frequency		f_C	—	942.5	—	MHz
Maximum insertion attenuation		α_{\max}	—	1.9	3.0 ¹⁾	dB
	925.0 ... 960.0	MHz				
Amplitude ripple			—	0.9	1.8	dB
	925.0 ... 960.0	MHz				
VSWR			—	1.9	2.3	
	925.0 ... 960.0	MHz				
Output amplitude balance (S₃₁/S₂₁)			—2.5		2.5	dB
	925.0 ... 960.0	MHz				
Output phase balance			—12.0		12.0	degree
	($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)					
	925.0 ... 960.0	MHz				
Attenuation		α_{abs}	46	52	—	dB
	10.00 ... 480.00	MHz	30	35	—	dB
	480.00 ... 880.00	MHz	24	27	—	dB
	880.00 ... 905.00	MHz	11	18	—	dB
	905.00 ... 915.00	MHz	23	30	—	dB
	980.00 ... 1050.00	MHz	30	34	—	dB
	1050.00 ... 3000.00	MHz				

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

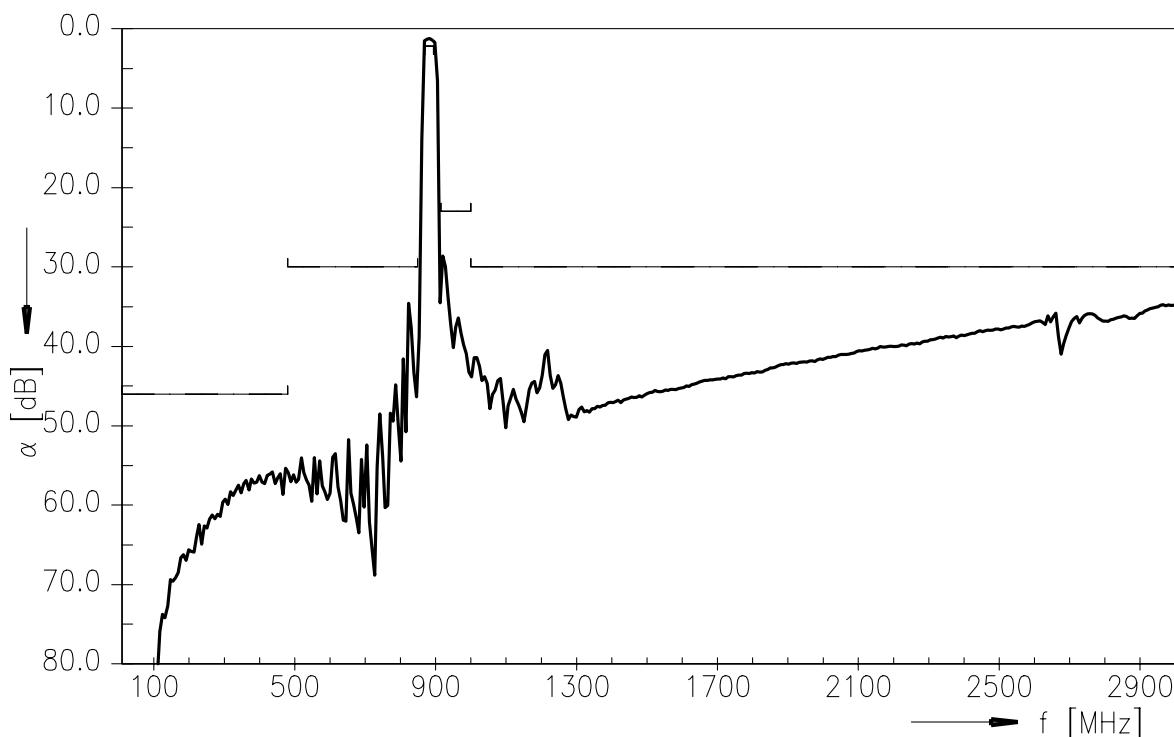
**Maximum ratings**

Operable temperature range	T	–45/+125	°C	
Storage temperature range	T_{stg}	–45/+125	°C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	50	V	
Input power at Tx bands: GSM850, GSM900	P_{IN}	15	dBm	peak power of GSM signal duty cycle 4:8

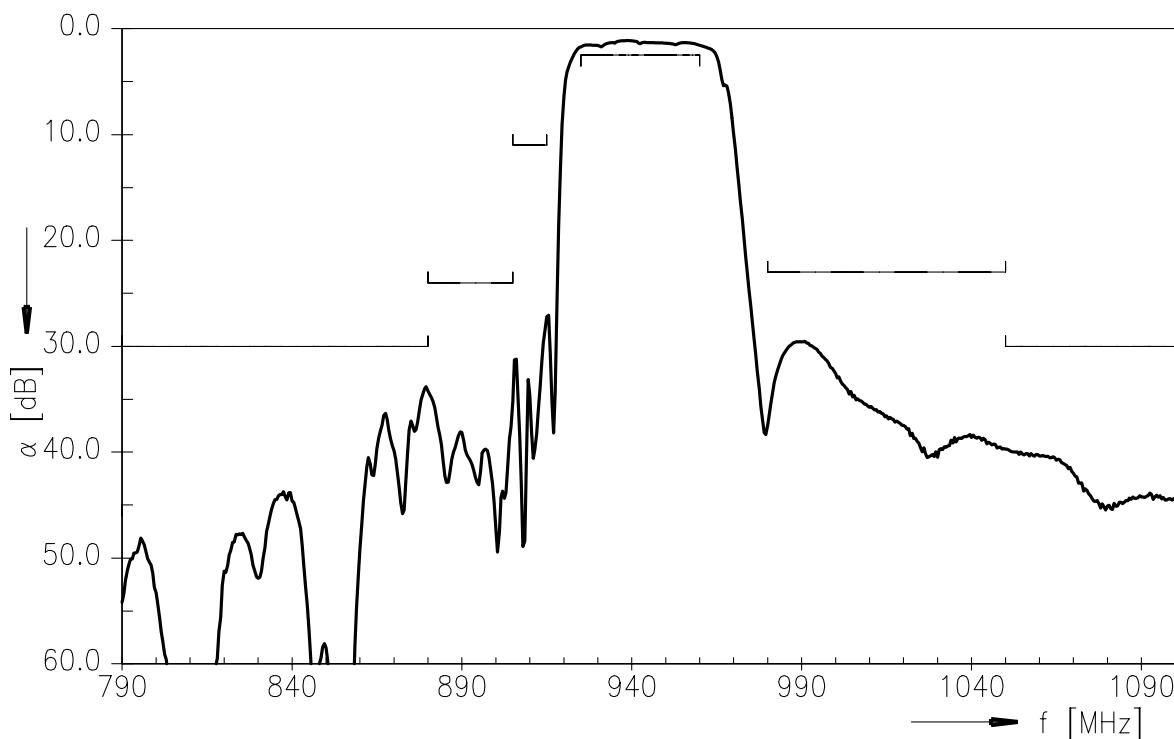
Transfer function Filter 1



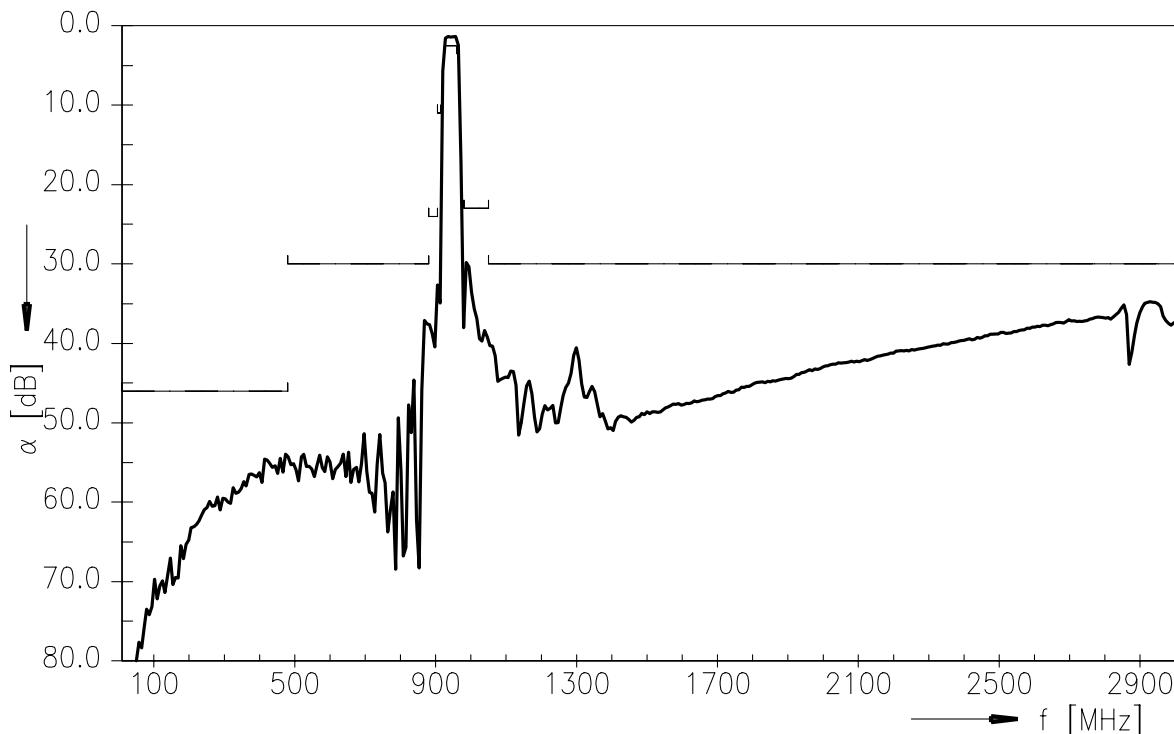
Transfer function Filter 1 (wideband)



Transfer function Filter 2



Transfer function Filter 2 (wideband)



SAW Components**B3514****SAW RF filter****881.5/942.5 MHz****Data sheet****References**

Type	B3514
Ordering code	B39941B3514H910
Marking and package	C61157-A7-A142
Packaging	F61074-V8174-Z000
Date codes	L_1126
S-parameters	B3514_LB_NB.s3p B3514_LB_WB.s3p B3514_UB_NB.s3p B3514_UB_WB.s3p See file header for port/pin assignment table.
Soldering profile	S_6001
RoHS compatible	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 th , 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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