



RF360 Europe GmbH

A Qualcomm – TDK Joint Venture

SAW Components

SAW Tx Filter

Automotive telematics

Series/type:	B4330
Ordering code:	B39901B4330P810
Date:	January 23, 2014
Version:	2.0

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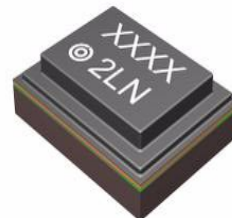
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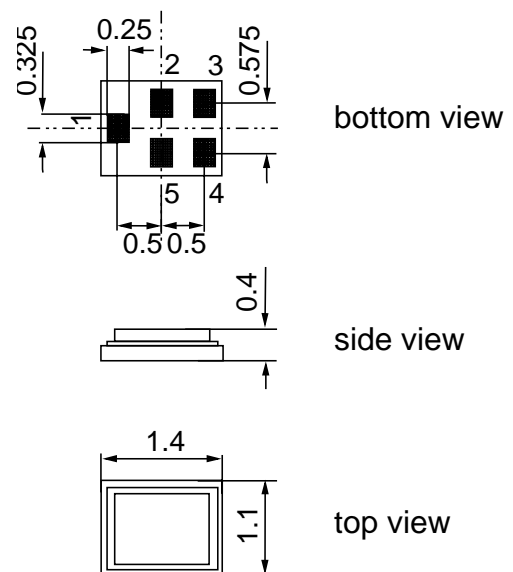
Data sheet


Application

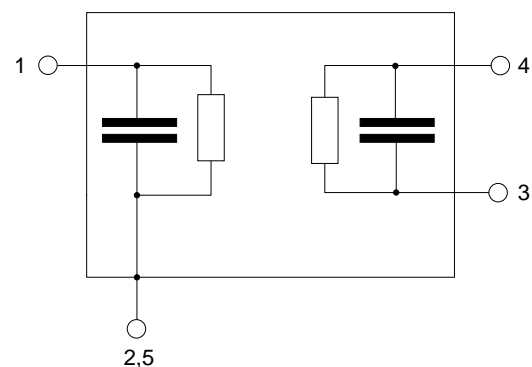
- Low-loss RF filter for WCDMA 900 systems, transmit path (Tx)
- Usable passband 35.0 MHz
- Unbalanced to unbalanced operation
- Low insertion attenuation
- Suitable for GPRS class 1 to 12


Features

- Package size 1.4 x 1.1 x 0.4 mm³
- Package code QCS5P
- RoHS compatible
- Approximate weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- AEC-Q200 qualified component family (operable temperature range -40°C to +85°C)
- **Electrostatic Sensitive Device (ESD)**


Pin configuration

- 1 Input
- 4 Output
- 2,3,5 To be grounded



Data sheet


Characteristics

Temperature range for specification: $T = -20\text{ °C to }+85\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

	min.	typ. @ 25 °C	max.	
Center frequency f_C	—	897.5	—	MHz
Maximum insertion attenuation				
880.0 ... 915.0 MHz α_{\max}	—	2.3	3.6	dB
882.4 ... 912.6 MHz $\alpha_{\text{WCDMA}}^{1)}$	—	1.8	2.6	dB
Amplitude ripple (p-p)				
880.0 ... 915.0 MHz $\Delta\alpha$	—	1.3	2.7	dB
880.0 ... 915.0 MHz $\Delta\alpha_{5\text{MHz}}^{2)}$	—	1.0	2.0	dB
Group delay ripple				
880.0 ... 915.0 MHz $\Delta\tau_{5\text{MHz}}^{2)}$	—	30	120	ns
Error Vector Magnitude				
@ f_{Carrier} 882.4 ... 912.6 MHz EVM ³⁾	—	2.6	4.5	%
VSWR				
880.0 ... 915.0 MHz	—	2.1	2.4	
Attenuation				
50.0 ... 835.0 MHz	30	37	—	dB
835.0 ... 870.0 MHz	12	18	—	dB
925.0 ... 960.0 MHz	6	25	—	dB
@ f_{Carrier} 927.4 ... 957.6 MHz $\alpha_{\text{WCDMA}}^{1)}$	20 ⁴⁾	33	—	dB
960.0 ... 1576.5 MHz	32	35	—	dB
1576.5 ... 2400.0 MHz	38	42	—	dB
2400.0 ... 2800.0 MHz	35	38	—	dB

1) Attenuation of WCDMA signal ("Powertransferfunction"). Please refer to annotation on the next page.

2) Ripple determined within any 5MHz channel.

3) Error Vector Magnitude (EVM) based on definition given in 3GPP TS 25.141.

4) Minimum attenuation of 28dB in the temperature range 0 °C to +85 °C.

Data sheet


Annotation for characteristics section

Attenuation of WCDMA signal ("Powertransferfunction", α_{WCDMA}) is determined by

$$\int_{-\infty}^{\infty} |S_{\text{ds21}}(f)H_{\text{RRC}}(f - f_{\text{Carrier}})|^2 df$$

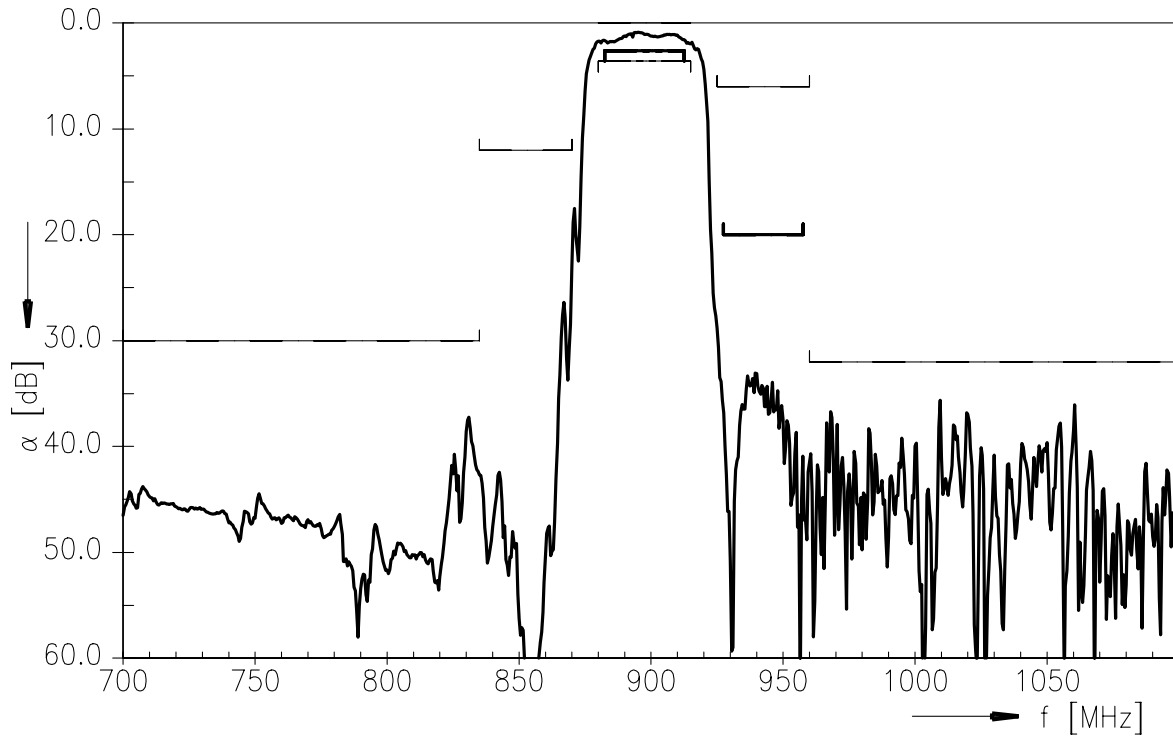
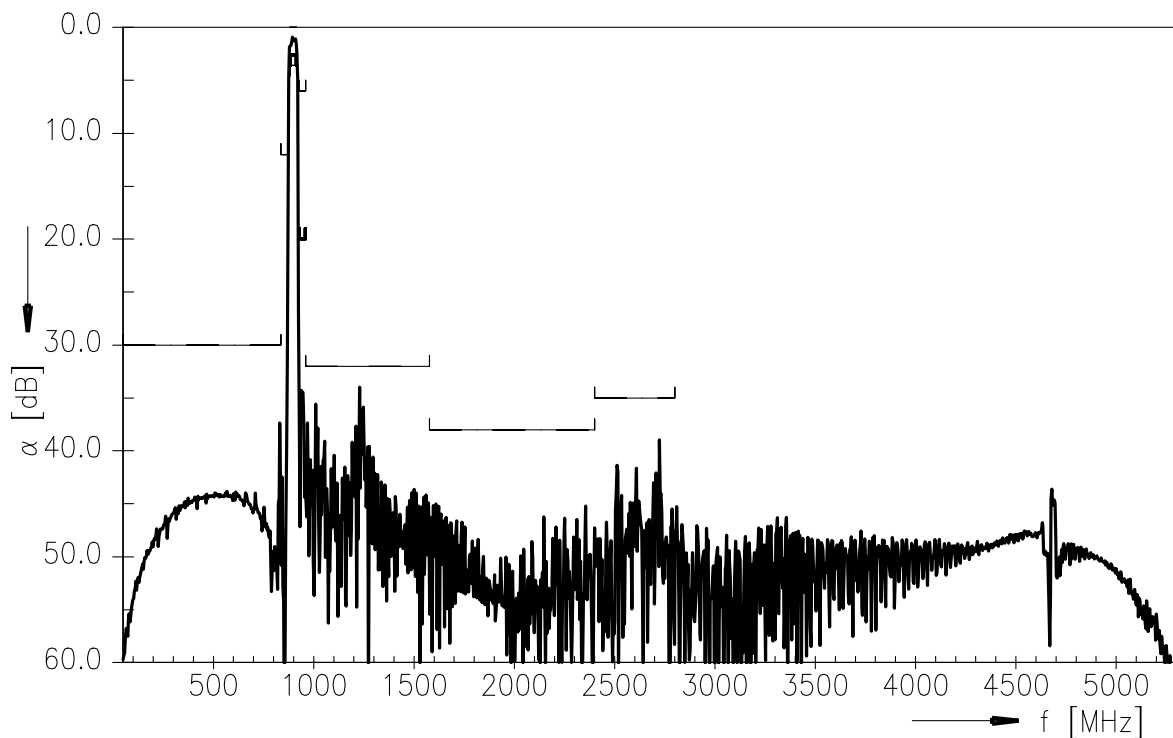
f_{Carrier} according to 3GPP TS 25.101 (e.g. for Passband, f_{Carrier} ranges from 882.4 MHz (lowest Tx channel) to 912.6 MHz (highest Tx channel)). $H_{\text{RRC}}(f)$ is the transfer function of the root-raised cosine transmit pulse shaping filter according to 3GPP TS 25.101 with the following normalization:

$$\int_{-\infty}^{\infty} |H_{\text{RRC}}(f)|^2 df = 1$$

Maximum ratings

Operable temperature range	T	-40/+85	°C	
Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	0	V	
Input Power	P _{IN}	13	dBm	cw signal

Data sheet


Transfer function (S21, Narrowband)

Transfer function (S21, Wideband)


SAW Components
B4330
SAW Tx Filter
897.5 MHz

Data sheet



References

Type	B4330
Ordering code	B39901B4330P810
Marking and package	C61157-A8-A9
Packaging	F61074-V8212-Z000
Date codes	L_1126
S-parameters	B4330_NB.s2p, B4330_WB.s2p 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.
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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