



## **SAW Components**

### **SAW Rx filter**

WCDMA Band 25

<b>Series/type:</b>	<b>B8829</b>
<b>Ordering code:</b>	<b>B39202B8829P810</b>
<b>Date:</b>	<b>June 30, 2014</b>
<b>Version:</b>	<b>2.0</b>



Data sheet



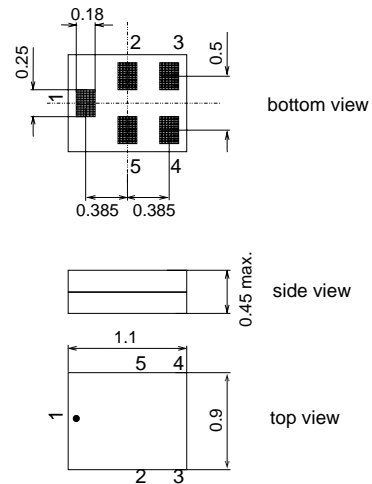
**Application**

- Low-loss RF filter for mobile telephone WCDMA Band 25 systems, receive path (Rx)
- Suitable for diversity applications
- Useable passband 65 MHz
- Impedance transformation from 50 Ω to 50 Ω
- Unbalanced to unbalanced operation
- Suitable for GPRS class 1 to 12



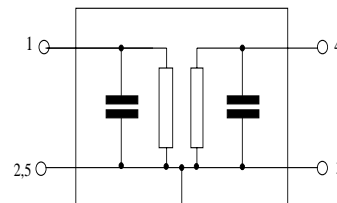
**Features**

- Package size 1.1 x 0.9 mm<sup>2</sup>
- Maximum package height 0.45 mm
- RoHS compatible
- Approx. weight 0.001g
- Package for Surface Mount Technology (SMT)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (ESD)
- **M**oisture **S**ensitive **L**evel 3



**Pin configuration**

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





**SAW Components**

**B8829**

**SAW Rx filter**

**1962.5 MHz**

Data sheet



**Characteristics**

Temperature range for specification:  $T = -30\text{ °C to }+85\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega + 2\text{nH}$   
 Terminating load impedance:  $Z_L = 50\ \Omega + 1\text{nH}$

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	1962.5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$				
	1930.24 ... 1994.76 MHz	—	1.8	3.1	dB
@ $f_{Carrier\ B25\ RX}$	1932.4 ... 1992.6 MHz	—	1.6	2.9	dB
	1930.24 ... 1989.76 MHz	—	1.8	3.1	dB
@ $f_{Carrier\ B2\ RX}$	1932.4 ... 1987.6 MHz	—	1.6	2.9	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
	1930.24 ... 1994.76 MHz	—	0.6	1.9	dB
<b>Error Vector Magnitude<sup>4)</sup></b>	EVM				
@ $f_{Carrier\ B25\ RX}$	1932.4 ... 1992.6 MHz	—	1.5	5.0	%
<b>Input VSWR</b>					
	1930.24 ... 1994.76 MHz	—	1.7	2.1	
<b>Output VSWR</b>					
	1930.24 ... 1994.76 MHz	—	1.7	2.1	
<b>Attenuation</b>	$\alpha$				
	10.0 ... 699.0 MHz	37	41	—	dB
	699.0 ... 716.0 MHz	37	41	—	dB
	716.0 ... 814.0 MHz	36	42	—	dB
	814.0 ... 849.0 MHz	36	42	—	dB
	849.0 ... 1710.0 MHz	34	38	—	dB
	1710.24 ... 1754.76 MHz	37	41	—	dB
	1755.0 ... 1850.0 MHz	40	45	—	dB
	1850.24 ... 1909.76 MHz	40	46	—	dB
@ $f_{Carrier\ B2\ TX}$	1852.4 ... 1907.6 MHz	40	47	—	dB
	1850.24 ... 1914.76 MHz	12	16	—	dB
@ $f_{Carrier\ B25\ TX}$	1852.4 ... 1912.6 MHz	20	47	—	dB
	2055.0 ... 2080.0 MHz	35	41	—	dB
	2080.0 ... 2400.0 MHz	37	42	—	dB
	2400.0 ... 2500.0 MHz	37	41	—	dB
	2500.0 ... 4900.0 MHz	34	39	—	dB
	4900.0 ... 6000.0 MHz	33	38	—	dB



<b>SAW Components</b>	<b>B8829</b>
<b>SAW Rx filter</b>	<b>1962.5 MHz</b>

**Data sheet**



3) Attenuation of WCDMA signal ("Powertransferfunction",  $\alpha_{\text{WCDMA}}$ ) is determined by

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

$f_{\text{Carrier}}$  according to 3GPP TS 25.101 (e.g. for band 25 RX passband,  $f_{\text{Carrier}}$  ranges from 1932.4 MHz (lowest Rx channel) to 1992.6 MHz (highest Rx 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:

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

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

**Maximum ratings**

Storage temperature range	$T_{\text{stg}}$	-40/+85 <sup>1)</sup>	°C	Machine Model Continuous Wave @ 55°C 2000h
DC voltage	$V_{\text{DC}}$	5 <sup>2)</sup>	V	
ESD voltage	$V_{\text{ESD}}$	50 <sup>3)</sup>	V	
Input Power at	$P_{\text{IN}}$			
1850.24 ... 1909.76 MHz		15	dBm	
1850.24 ... 1914.76 MHz		14	dBm	

1) extended upperlimit: 96h@125°C acc. to IEC 60068-2-2 Bb

2) 168h Damp Heat Steady State acc. to IEC 60068-2-67 Cy

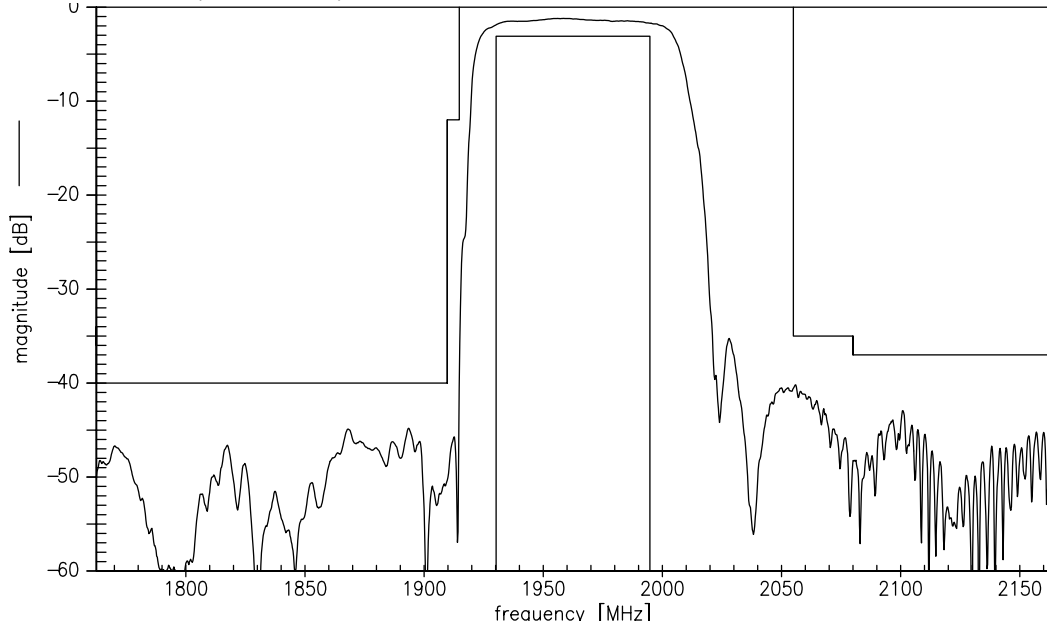
3) acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses.



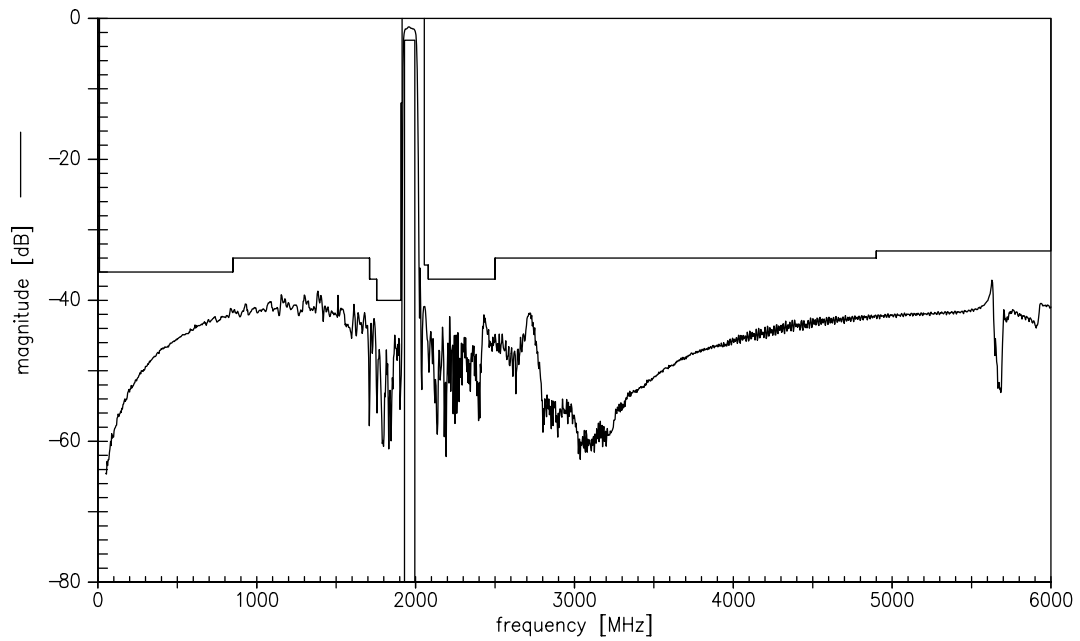
Data sheet



Transfer function (narrowband)



Transfer function (wideband)



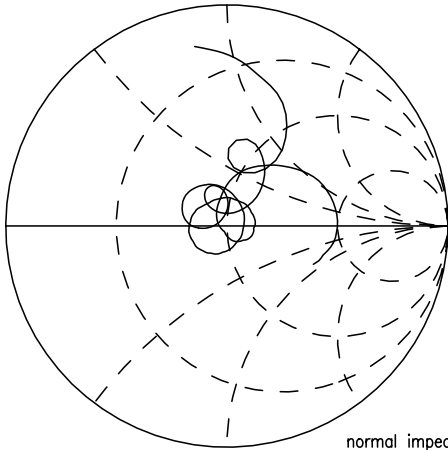


Data sheet

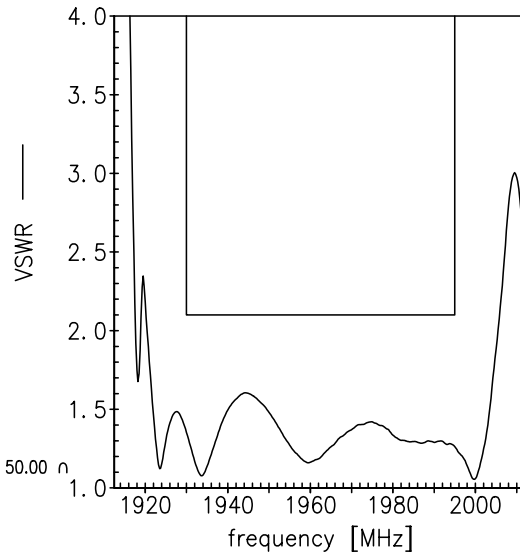


Smith charts

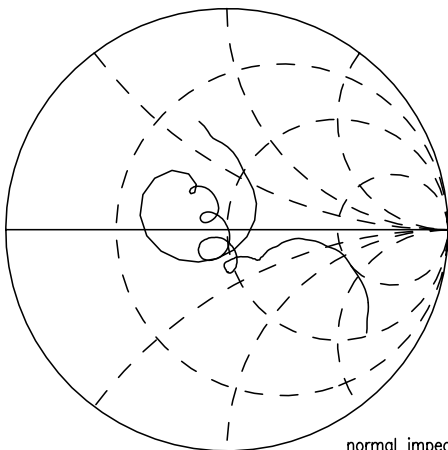
**S<sub>11</sub> function**



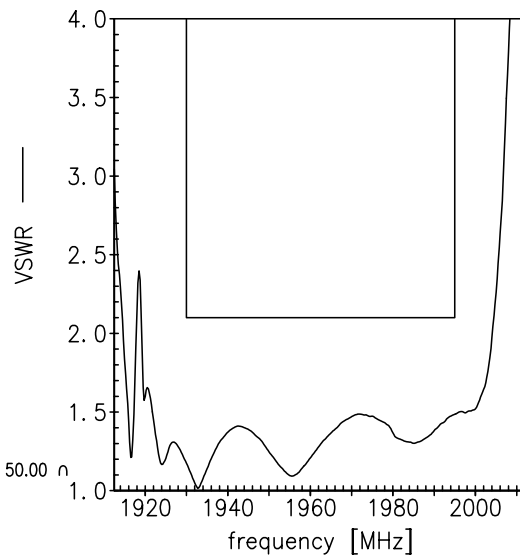
normal impedance: 50.00  $\Omega$



**S<sub>22</sub> function**



normal impedance: 50.00  $\Omega$





<b>SAW Components</b>	<b>B8829</b>
<b>SAW Rx filter</b>	<b>1962.5 MHz</b>

Data sheet 

### References

<b>Type</b>	B8829
<b>Ordering code</b>	B39202B8829P810
<b>Marking and package</b>	C61157-A8-A56
<b>Packaging</b>	F61074-V8255-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B8829_NB_UN.s2p, B8829_WB_UN.s2p
<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 8th, 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.
<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> for a large variety of matching coils.

For further information please contact your local EPCOS sales office or visit our webpage at [www.epcos.com](http://www.epcos.com).

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

© EPCOS AG 2014. This brochure replaces the previous edition.  
For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.  
Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.

Please read *cautions and warnings and important notes* at the end of this document.



## Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule, EPCOS is either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether an EPCOS product with the properties described in the product specification is suitable for use in a particular customer application.
2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.
3. **The warnings, cautions and product-specific notes must be observed.**
4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous)**. Useful information on this will be found in our Material Data Sheets on the Internet ([www.epcos.com/material](http://www.epcos.com/material)). Should you have any more detailed questions, please contact our sales offices.
5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order. We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available. The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.
6. Unless otherwise agreed in individual contracts, **all orders are subject to the current version of the "General Terms of Delivery for Products and Services in the Electrical Industry" published by the German Electrical and Electronics Industry Association (ZVEI)**.
7. The trade names EPCOS, BAOKE, Alu-X, CeraDiode, CeraLink, CeraPlas, CSMP, CSSP, CTVS, DeltaCap, DigiSiMic, DSSP, FilterCap, FormFit, MiniBlue, MiniCell, MKD, MKK, MLSC, MotorCap, PCC, PhaseCap, PhaseCube, PhaseMod, PhiCap, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMDAD, SiMic, SIMID, SineFormer, SIOV, SIP5D, SIP5K, TFAP, ThermoFuse, WindCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at [www.epcos.com/trademarks](http://www.epcos.com/trademarks).