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SAW filters for mobile communications

Series/Type: B8307

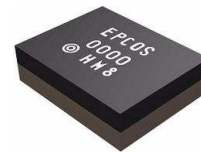
The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B39232B8307P810	B39242B9498P810	2015-11-20	2016-03-01	2016-06-30

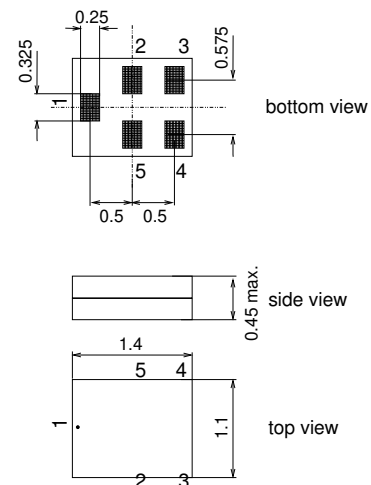
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Application

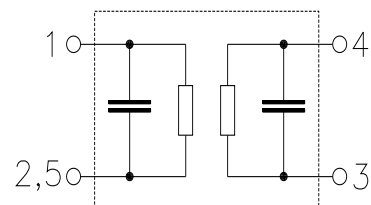
- Low-loss RF filter for mobile telephone TD-SCDMA systems
- Usable passband 50 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50 Ω to 100 Ω


Features

- Package size 1.4 x 1.1 mm²
- max. Package height 0.45 mm
- RoHS compatible
- Approx. weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitive Level 3**


Pin configuration

- 1 Input unbalanced
- 3,4 Output balanced
- 2,5 Case ground



Data sheet

Characteristics

Temperature range for specification: $T = -30\text{ °C to }+85\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 100\ \Omega$ (balanced)

				min.	typ. @ 25 °C	max.	
Center frequency		f_C		—	2345.0	—	MHz
Maximum insertion attenuation	2320.0 ... 2370.0	α_{\max}	MHz	—	1.6	2.4	dB
Amplitude ripple (p-p)	2320.0 ... 2370.0	$\Delta\alpha$	MHz	—	0.6	1.4	dB
Input VSWR	2320.0 ... 2370.0		MHz	—	1.8	2.1	
Output VSWR	2320.0 ... 2370.0		MHz	—	1.9	2.2	
CMRR ($ S_{21}-S_{31} / S_{21}+S_{31} $)	2320.0 ... 2370.0		MHz	20	25	—	dB
Attenuation	0.1 ... 2215.0	α	MHz	35	50	—	dB
	2215.0 ... 2240.0		MHz	35	41	—	dB
	2240.0 ... 2280.0		MHz	20	31	—	dB
	2412.0 ... 2472.0	$\alpha_{\text{WLAN}}^{1)}$	MHz	22	27	—	dB
	2410.0 ... 2485.0		MHz	20	25	—	dB
	2485.0 ... 6000.0		MHz	25	36	—	dB

Annotation for characteristics section

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

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

f_{Carrier} according to IEEE802.11 n (e.g. for WLAN, f_{Carrier} ranges from 2412 MHz (lowest channel) to 2472 MHz (highest channel)). $H_{\text{RECT}}(f)$ is the transfer function of a rectangular shaped filter (BW=18MHz) with the following normalization:

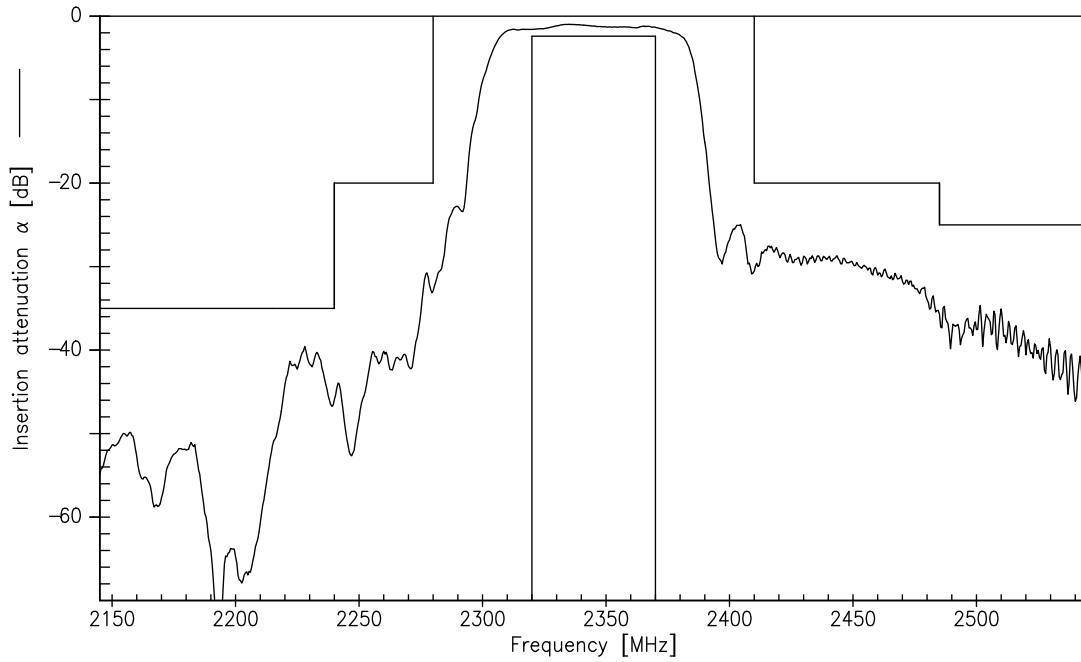
$$\int_{-\infty}^{\infty} |H_{\text{RECT}}(f)|^2 df = 1$$

Maximum ratings

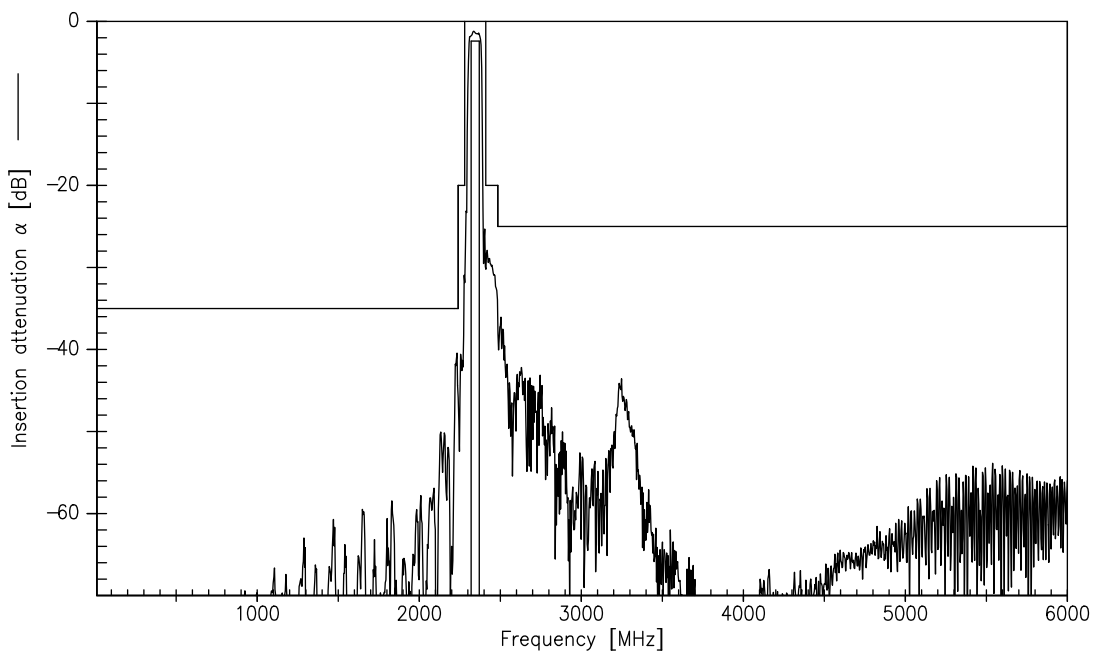
Operable temperature range	T	-40/+85	°C	
Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	5	V	
ESD voltage	V _{ESD}	50 ¹⁾	V	machine model, 1 pulse
Input Power at 2320.0...2370.0 MHz	P _{IN}	11	dBm	effective power in the on-state duty cycle 4:8

1) acc. to JESD22-A115A (machine model), 1 negative & 1 positive pulse.

Transfer function (narrowband)



Transfer function (wideband)

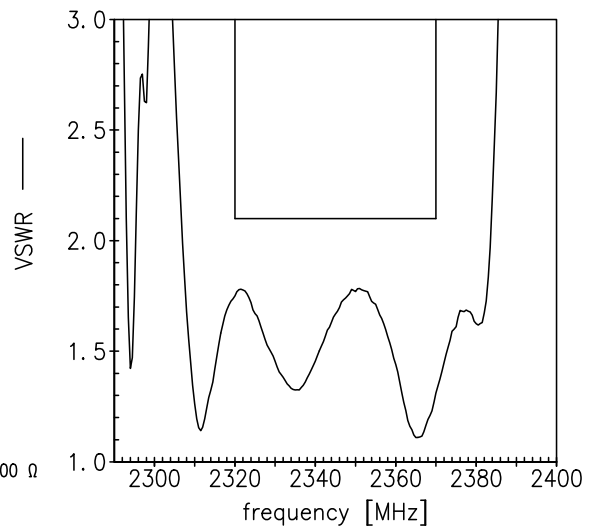
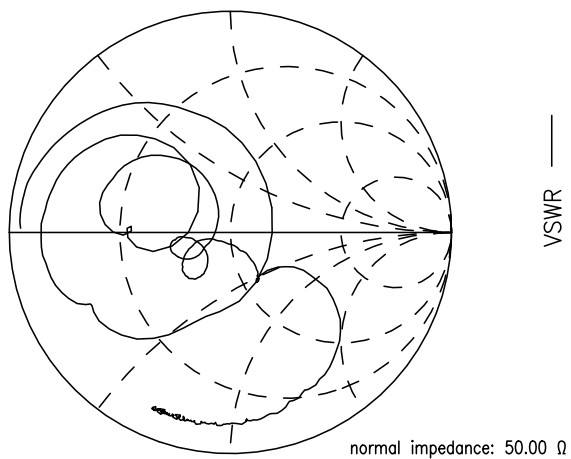


Data sheet

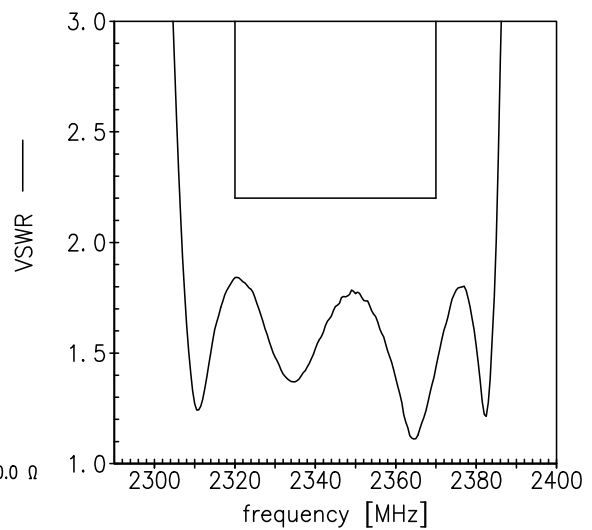
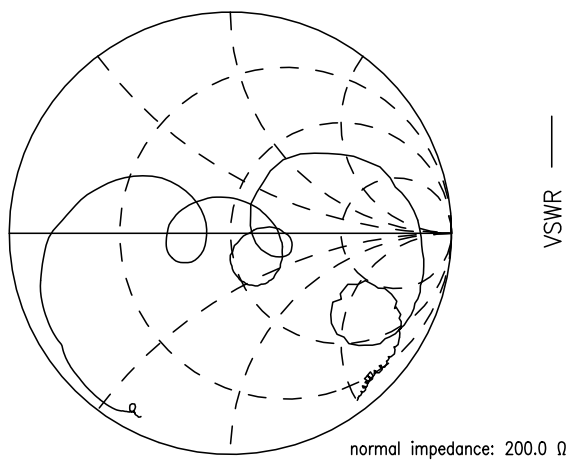


Smith charts

S₁₁ function



S₂₂ function



SAW Components	B8307
SAW Rx Filter	2345.0 MHz

Data sheet



Type	B8307
Ordering code	B39232B8307P810
Marking and package	C61157-A8-A14
Packaging	F61074-V8237-Z000
Date codes	L_1126
S-parameters	B8307_NB.s3p, B8307_WB.s3p see file header for port/pin assignment table
Soldering profile	S_6001
RoHS compatible	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."
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

For further information please contact your local EPCOS sales office or visit our webpage at www.epcos.com.

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