SAW filters for mobile communications

Series/Type: B9490

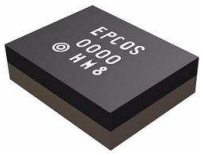
The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B39232B9490P810		2015-11-20	2016-03-01	2016-06-30

For further information please contact your nearest EPCOS sales office, which will also support you in selecting a suitable substitute. The addresses of our worldwide sales network are presented at www.epcos.com/sales.

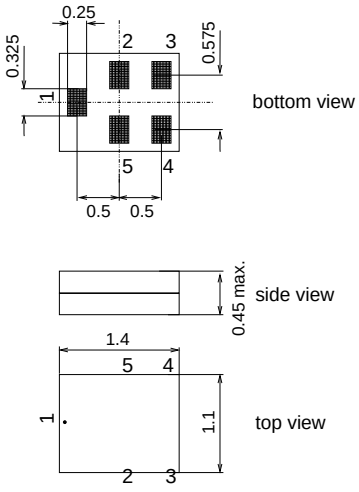
Application

- Low-loss RF filter for mobile telephone TD-SCDMA systems
- Usable passband 50 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50 Ω to 200 Ω



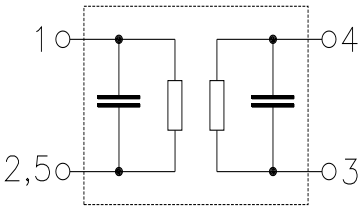
Features

- Package size 1.4 x 1.1 mm²
- max. Package height 0.45 mm
- RoHS compatible
- Approx. weight 0.003g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- **M**oisture **S**ensitive **L**evel 3



Pin configuration

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



Characteristics

Temperature range for specification: T = -30 ˚C to +85 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 200 Ω || 33 nH (balanced)

		min.	typ. @ 25˚C	max.	
Center frequency	f_C	—	2345.0	—	MHz
Maximum insertion attenuation	α_{max}				
2320.0 ... 2370.0 MHz		—	1.4	2.4	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
2320.0 ... 2370.0 MHz		—	0.5	1.6	dB
Input VSWR					
2320.0 ... 2370.0 MHz		—	1.7	2.1	
Output VSWR					
2320.0 ... 2370.0 MHz		—	1.7	2.2	
CMRR ($\|S_{21}-S_{31}\| / \|S_{21}+S_{31}\|$)					
2320.0 ... 2370.0 MHz		20	27	—	dB
Attenuation	α				
0.1 ... 2215.0 MHz		35	45	—	dB
2215.0 ... 2240.0 MHz		35	40	—	dB
2240.0 ... 2280.0 MHz		20	29	—	dB
2412.0 ... 2472.0 MHz	α_{WLAN} 1)	20	26	—	dB
2410.0 ... 2485.0 MHz		20	26	—	dB
2485.0 ... 6000.0 MHz		25	35	—	dB

Annotation for characteristics section

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

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

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

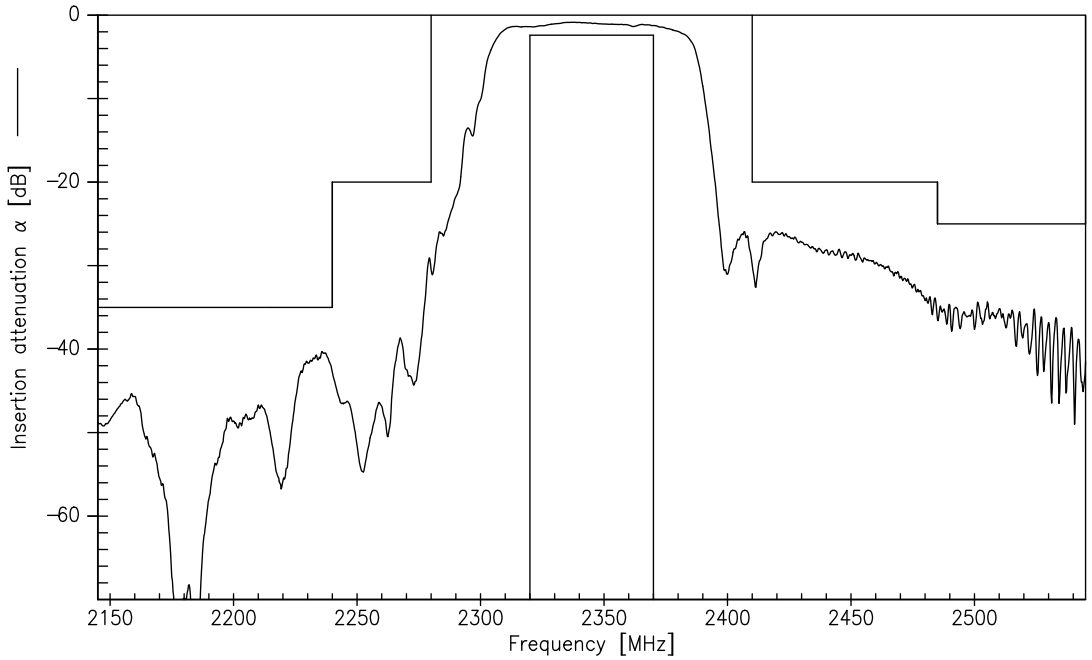
$$\int_{\infty}^{\infty} \left| H_{RECT}(f) \right|^2 df = 1$$

Maximum ratings

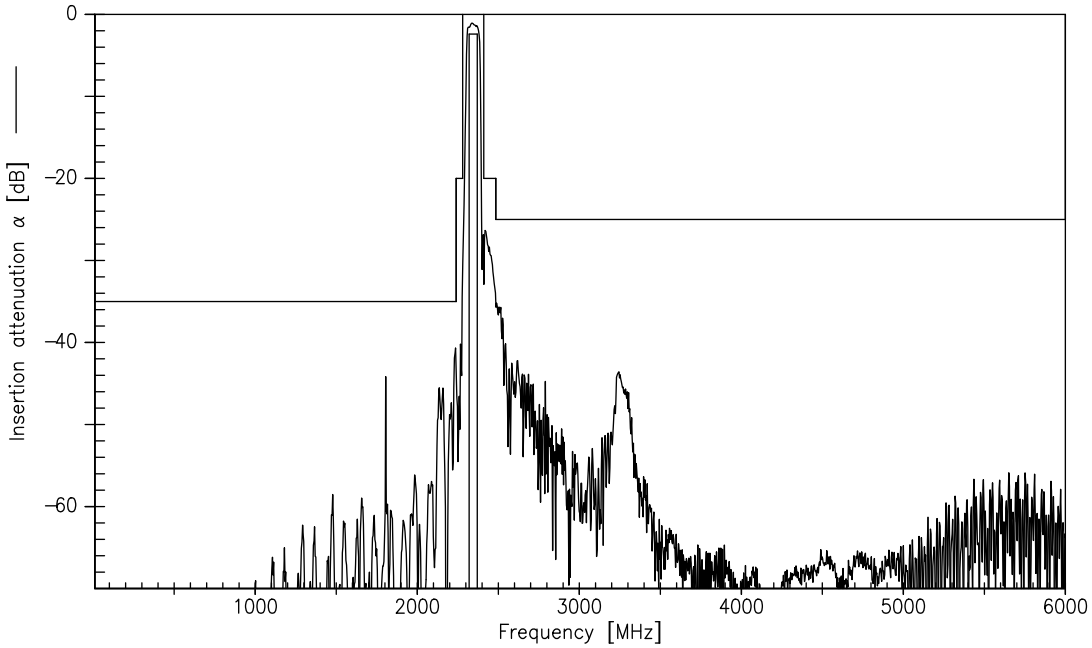
Operable temperature range	T	–40/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	50 1)	V	machine model, 1 pulse
Input Power at 2320.0...2370.0 MHz	P_{IN}	11	dBm	effective power in the on-state duty cycle 4:8

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

Transfer function (narrowband)

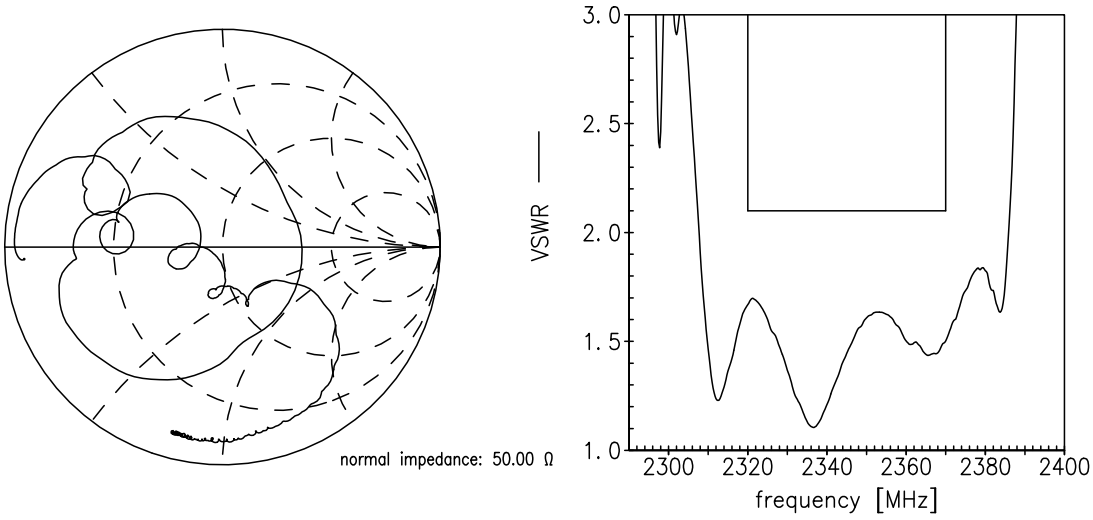


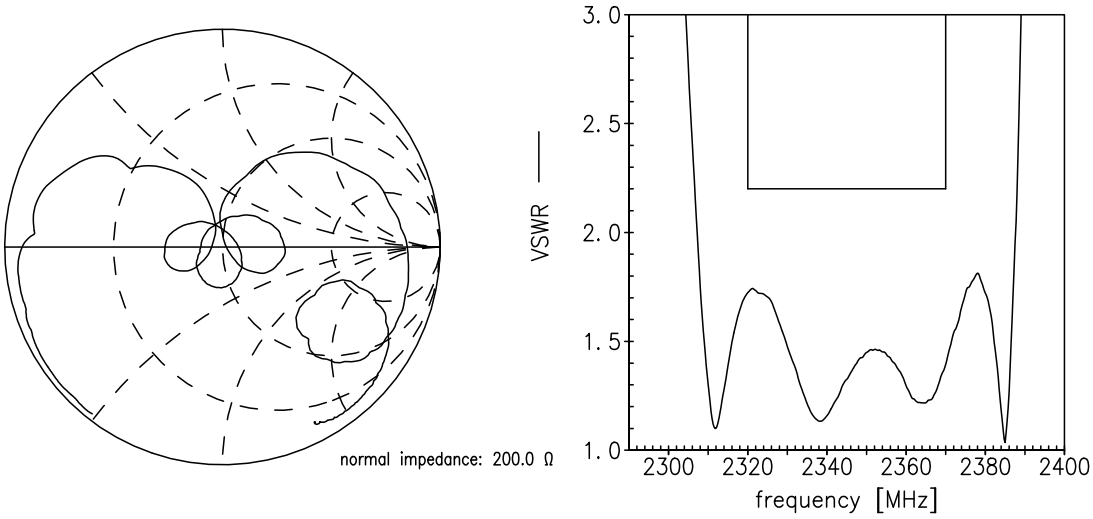
Transfer function (wideband)



Smith charts

S_{11} function





Type	B9490
Ordering code	B39232B9490P810
Marking and package	C61157-A8-A14
Packaging	F61074-V8237-Z000
Date codes	L_1126
S-parameters	B9490_NB.s3p, B9490_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

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