



SAW Components

SAW Filter

TD-LTE Band 40

Series/Type:	B9496
Ordering code:	B39232B9496P810
Date:	August 08, 2012
Version:	2.0

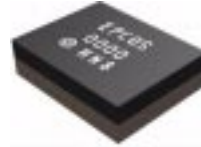
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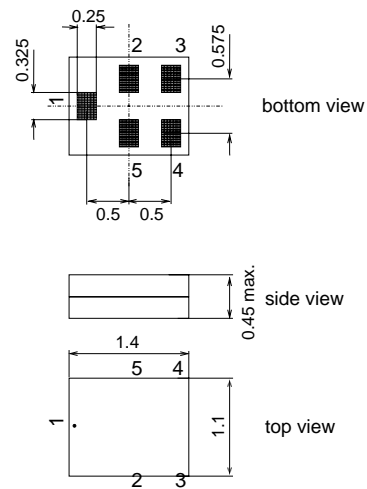
Data sheet


Application

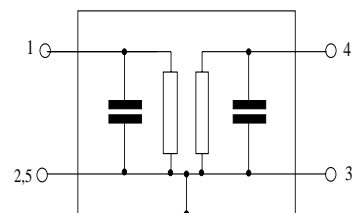
- Low-loss RF filter for mobile telephone TDSCDMA and TD-LTE Band 40 system
- Low amplitude ripple
- Usable passband: 50 MHz
- Impedance at input and output 50 Ω
- Unbalanced to unbalanced operation


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



Data sheet


Characteristics

Operating temperature range: $T = -30\text{ °C to }+85\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

		min.	typ. @ 25°C	max.	
Center frequency	f_C	—	2345.0	—	MHz
Maximum insertion attenuation	α_{\max}	—	1.7	2.4	dB
2320.0 ... 2370.0MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	0.8	1.5	dB
2320.0 ... 2370.0MHz					
Input VSWR		—	1.8	2.1	
2320.0 ... 2370.0MHz					
Output VSWR		—	1.8	2.1	
2320.0 ... 2370.0MHz					
Attenuation	α				
50.0 ... 2215.0MHz		26	31	—	dB
2215.0 ... 2240.0MHz		35	40	—	
2240.0 ... 2280.0MHz		15	26	—	dB
2412.0 ... 2472.0MHz $\alpha_{\text{WLAN}}^{1)}$		23	33	—	
2410.0 ... 2485.0MHz		30	42	—	dB
2485.0 ... 6000.0MHz		27	32	—	


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

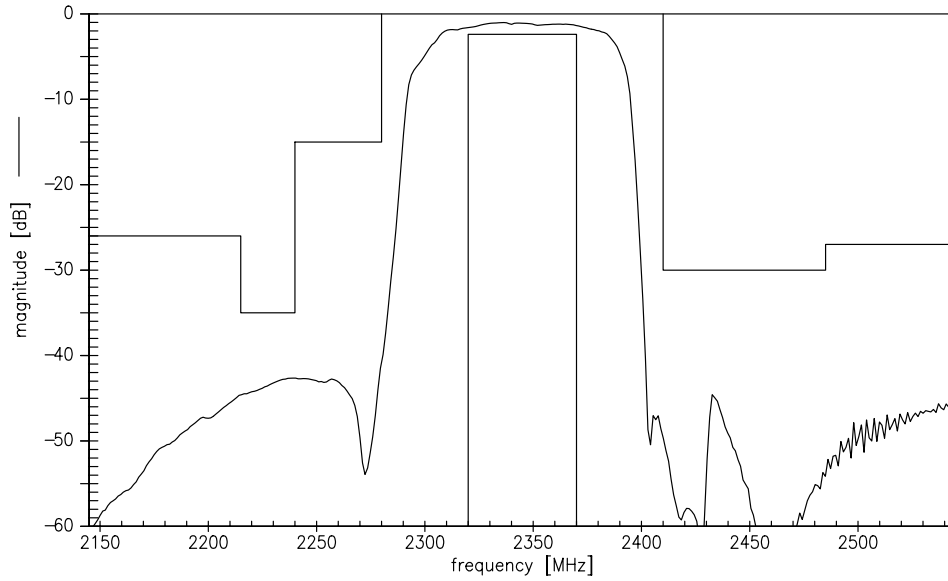
Operable temperature range	T	-40/+85	°C	
Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	5	V	
ESD voltage	V _{ESD}	50 ¹⁾	V	machine model, 10 pulses
Input Power at 2320.0...2370.0 MHz	P _{IN}	22	dBm	continuous wave

1) acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.

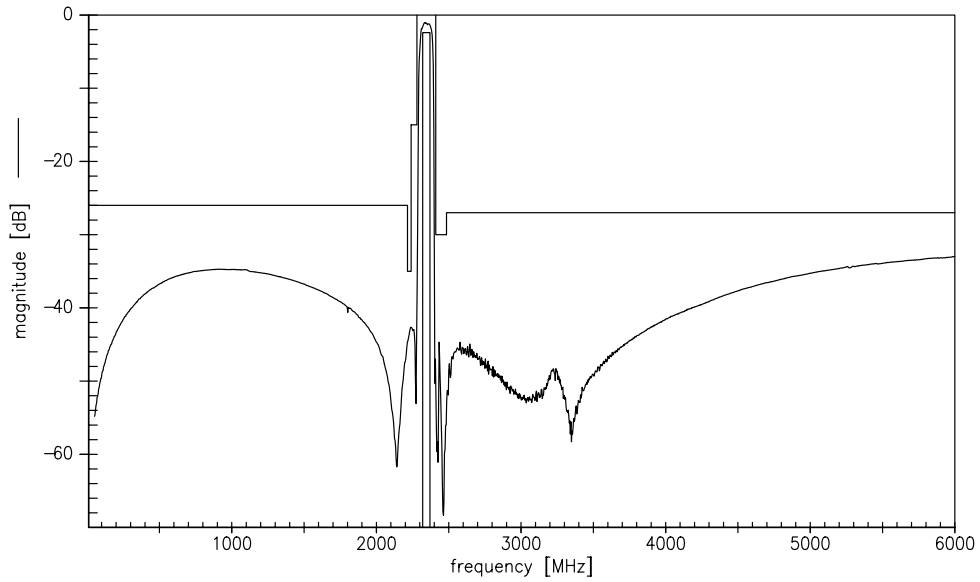
Data sheet



Transfer function



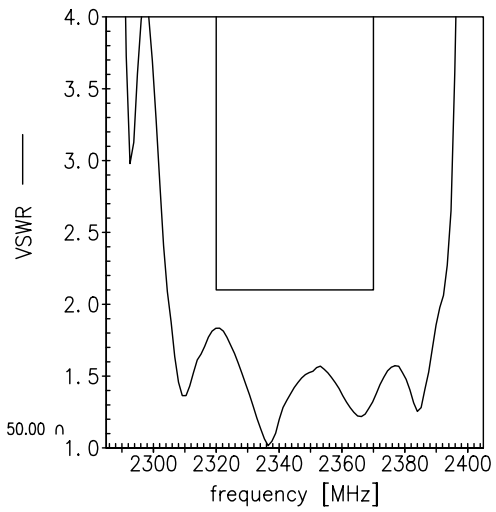
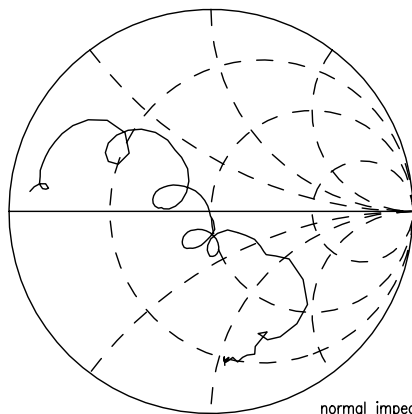
Transfer function (wideband)



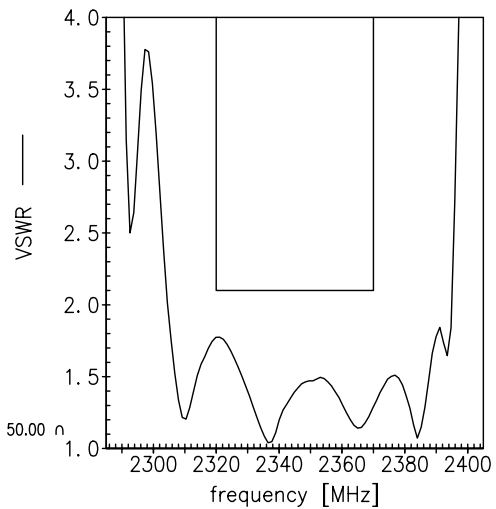
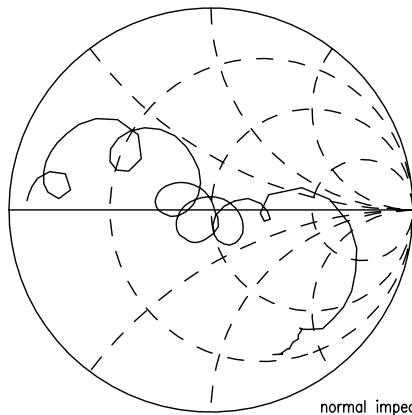


Smith charts

S₁₁ function



S₂₂ function



SAW Components	B9496
SAW Filter	2345.0 MHz
Data sheet	

References

Type	B9496
Ordering code	B39232B9496P810
Marking and package	C61157-A8-A3
Packaging	F61074-V8237-Z000
Date codes	L_1126
S-parameters	B9496_NB.s2p, B9496_WB.s2p 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."
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.
Matching coils	See http://www.tdk.co.jp/tefe02/coil.htm#aname1 http://www.tdk.co.jp/etvcl/index.htm 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.

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