



## **SAW Components**

### **SAW Filter**

WCDMA

<b>Series/Type:</b>	<b>B5017</b>
<b>Ordering code:</b>	<b>B39171-B5017-U310</b>
<b>Date:</b>	<b>Dec 09, 2005</b>
<b>Version:</b>	<b>1</b>



SAW Components

B5017

Low-Loss Filter for WCDMA

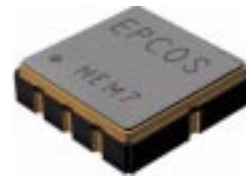
168.5 MHz

Data Sheet

SMD

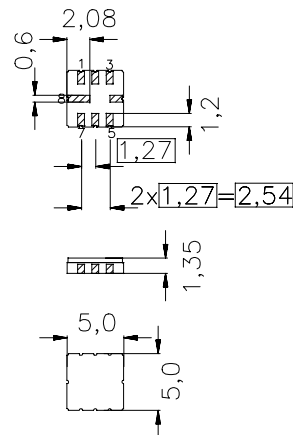
### Application

- Low-loss IF filter for UMTS base stations
- 20 MHz usable bandwidth
- Ceramic SMD package



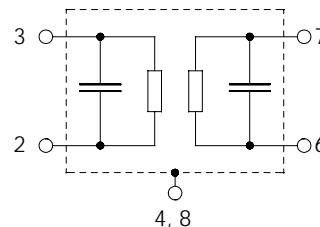
### Features

- Package size 5.0 x 5.0 x 1.35 mm<sup>3</sup>
- Package code QCC8C
- RoHS compatible
- Approx. weight 0.1 g
- Package for Surface Mount Technology (SMT)
- Ni, gold-plated terminals



### Pin configuration

- 3 Input
- 2 Input ground
- 7 Output
- 6 Output ground
- 4, 8 Case ground
- 1, 5 To be grounded



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



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**Data Sheet**



**Characteristics**

Operating temperature range:  $T = -20\text{ °C} \dots +80\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$  and matching circuit  
 Terminating load impedance:  $Z_L = 50\ \Omega$  and matching circuit

		min.	typ. @ 25 °C	max.	
<b>Nominal frequency</b>	$f_N$	—	168.5	—	MHz
<b>Minimum insertion attenuation</b>	$\alpha_{\min}$	—	8.3	9.5	dB
<b>Pass bandwidth</b> $\alpha_{\text{rel}} \leq 1.0\text{ dB}$	$B_{1.0\text{dB}}$	—	23	—	MHz
<b>Amplitude ripple (p-p)</b> $f_N \pm 10.0\text{ MHz}$	$\Delta\alpha$	—	0.6	1.0	dB
<b>Group delay ripple (p-p)</b> $f_N \pm 10.0\text{ MHz}$	$\Delta\tau$	—	40	80	ns
<b>Mean value of absolute group delay</b> $f_N \pm 10.0\text{ MHz}$	$\bar{\tau}$	398	408	418	ns
<b>Relative attenuation (relative to <math>\alpha_{\min}</math>)</b>	$\alpha_{\text{rel}}$				
1.0 ... 100.0 MHz		40	50	—	dB
100.0 ... 149.0 MHz		33	40	—	dB
190.0 ... 250.0 MHz		33	36	—	dB
250.0 ... 310.0 MHz		40	60	—	dB
310.0 ... 410.0 MHz		50	60	—	dB
410.0 ... 1000.0 MHz		40	70	—	dB
<b>Temperature coefficient of frequency</b>	$TC_f$	—	-87	—	ppm/K



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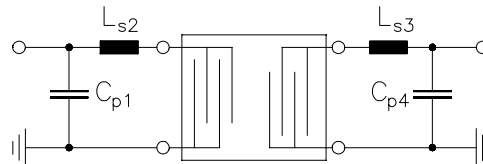
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Matching network to 50 Ω



$$C_{p1} = 22 \text{ pF}$$

$$L_{s2} = 68 \text{ nH}$$

$$L_{s3} = 62 \text{ nH}$$

$$C_{p4} = 22 \text{ pF}$$

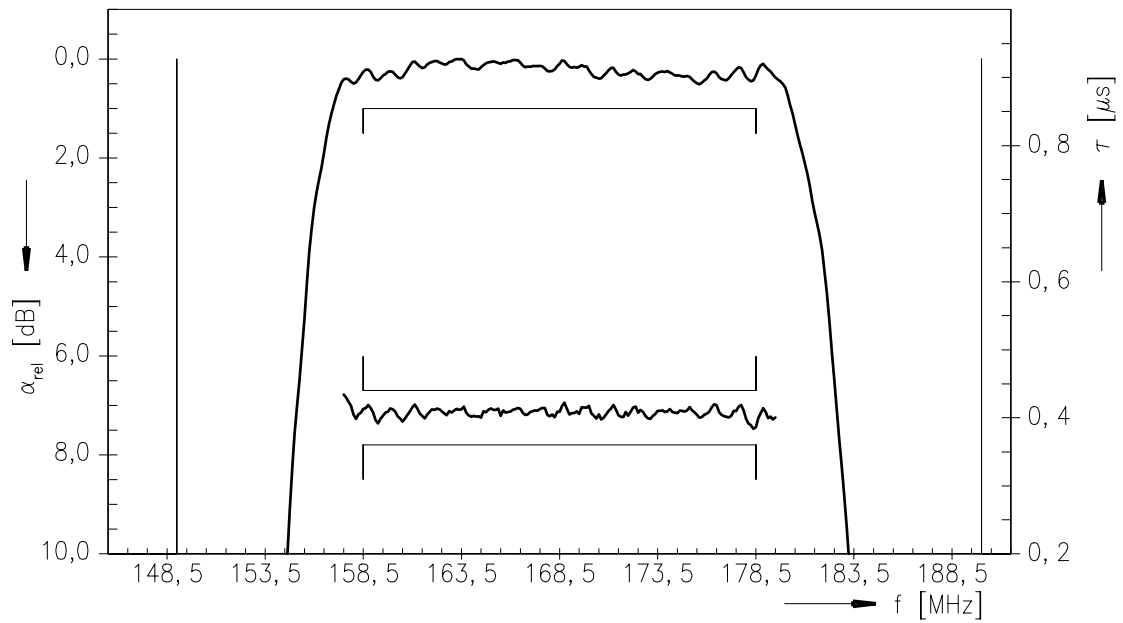
### Maximum ratings

Operable temperature range	T	-40/+85	°C	
Storage temperature range	T <sub>sta</sub>	-40/+85	°C	
DC voltage	V <sub>DC</sub>	0	V	
ESD voltage	V <sub>ESD</sub>	200 <sup>1)</sup>	V	machine model, 1 pulse
Input power	P <sub>IN</sub>	5	dBm	
Input power	P <sub>IN</sub>	20	dBm	for ≤ 100 hours

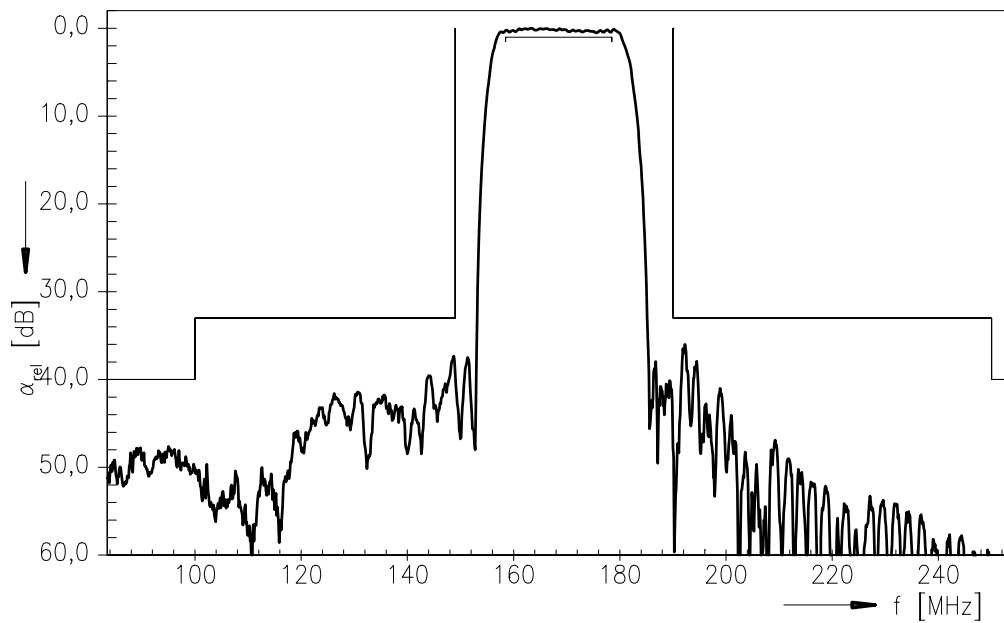
1) acc. to J-STD22A-0115A (machine model. 1 pulse +/-).



Transfer function



Transfer function (wideband)



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



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Data Sheet



<b>Type</b>	B5017	
<b>Ordering code</b>	B39171-B5017-U310	
<b>Marking and Package</b>	C61157-A7-A56	
<b>Packaging</b>	F61074-V8169-Z000	
<b>Date Codes</b>	L_1126	
<b>S-Parameters</b>		
<b>Soldering profile</b>	S_6001	

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