



# SAW Components

Data Sheet B7837





**SAW Components**

**B7837**

**Low-Loss Filter for Mobile Communication**

**942,5 MHz**

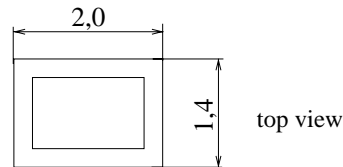
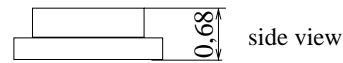
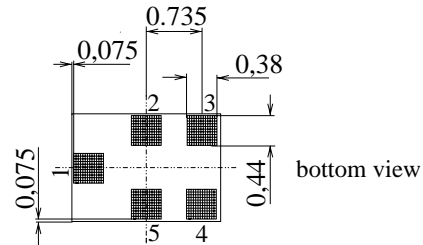
**Data Sheet**



**Chip Size SAW package QCS5E**

**Features**

- Low-loss RF filter for mobile telephone EGSM system, receive path
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 35 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50 Ω to 150 Ω
- Suitable for GPRS class 1 to 12
- Package for **Surface Mounted Technology (SMT)**
- Pb-free



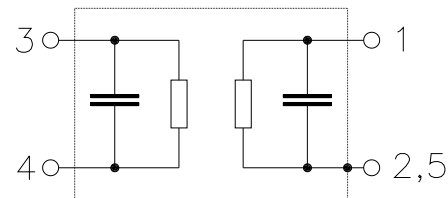
Dimensions in mm, approx. weight 0,007g

**Terminals**

- Ni, gold-plated

**Pin configuration**

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



Type	Ordering code	Marking and Package according to	Packing according to
B7837	B39941-B7837-K410	C61157-A7-A131	F61074-V8151-Z000

Electrostatic Sensitive Device (ESD)

**Maximum ratings**

Operable temperature range	$T$	- 30 / + 85	°C	machine model, 10 pulses
Storage temperature range	$T_{stg}$	- 40 / + 85	°C	
DC voltage	$V_{DC}$	5	V	
ESD voltage	$V_{ESD}$	100*	V	
Input Power at GSM850, GSM900 GSM1800, GSM1900 Tx bands	$P_{IN}$	15	dBm	

\* - acc. to JESD22-A115A (Machine Model), 10 negative & 10 positive pulses



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**Characteristics**

Operating temperature range:  $T = 25\text{ }^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 150\ \Omega \parallel 82\ \text{nH}$  (balanced)

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	942,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$				
	925,0 ... 960,0 MHz	—	1,4	1,7	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
	925,0 ... 960,0 MHz	—	0,7	1,0	dB
<b>Input VSWR</b>					
	925,0 ... 960,0 MHz	—	1,8	2,0	
<b>Output VSWR</b>					
	925,0 ... 960,0 MHz	—	1,8	2,0	
<b>Attenuation</b>					
	0,0 ... 480,0 MHz	45	53	—	dB
	480,0 ... 905,0 MHz	30	34	—	dB
	905,0 ... 915,0 MHz	25	27	—	dB
	980,0 ... 1000,0 MHz	25	29	—	dB
	1000,0 ... 1850,0 MHz	28	38	—	dB
	1850,0 ... 6000,0 MHz	40	44	—	dB
<b>Amplitude balance (<math>S_{31}/S_{21}</math>)</b>					
	925,0 ... 960,0 MHz	-1,0	-0,5 / +0,7	1,0	dB
<b>phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}</math>)</b>					
	925,0 ... 960,0 MHz	-5	-3 / +2	5	degree
<b>Diff. to common mode suppression</b>	$S_{sc12}$				
	925,0 ... 960,0 MHz	22	29	—	dB
	824,0 ... 995,0 MHz	22	29	—	dB
	1648,0 ... 1990,0 MHz	22	45	—	dB
	3296,0 ... 3980,0 MHz	20	48	—	dB



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**Characteristics**

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 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 150 \Omega \parallel 82$  nH (balanced)

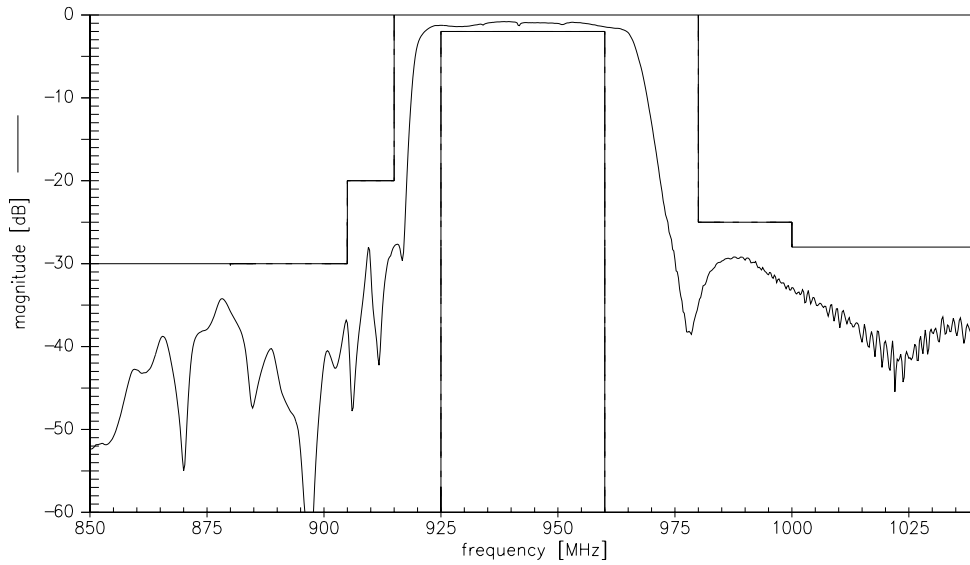
		<b>min.</b>	<b>typ.</b>	<b>max.</b>	
<b>Center frequency</b>	$f_C$	—	942,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$				
925,0 ... 960,0 MHz		—	1,5	2,0 <sup>1)</sup>	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	0,8	1,2	dB
<b>Input VSWR</b>					
925,0 ... 960,0 MHz		—	1,8	2,0	
<b>Output VSWR</b>					
925,0 ... 960,0 MHz		—	1,8	2,0	
<b>Attenuation</b>					
0,0 ... 480,0 MHz		45	53	—	dB
480,0 ... 905,0 MHz		30	34	—	dB
905,0 ... 915,0 MHz		20 <sup>2)</sup>	27	—	dB
980,0 ... 1000,0 MHz		25	29	—	dB
1000,0 ... 1850,0 MHz		28	38	—	dB
1850,0 ... 6000,0 MHz		40	44	—	dB
<b>Amplitude balance (<math> S_{31}/S_{21} </math>)</b>					
925,0 ... 960,0 MHz		-1,0	-0,5 / +0,7	1,0	dB
<b>phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b>					
925,0 ... 960,0 MHz		-5	-3 / +2	5	degree
<b>Diff. to common mode suppression</b>	$S_{sc12}$				
925,0 ... 960,0 MHz		22	29	—	dB
824,0 ... 995,0 MHz		22	29	—	dB
1648,0 ... 1990,0 MHz		22	45	—	dB
3296,0 ... 3980,0 MHz		20	48	—	dB

1) 2,2 dB for  $T = -30$  °C to  $+85$  °C

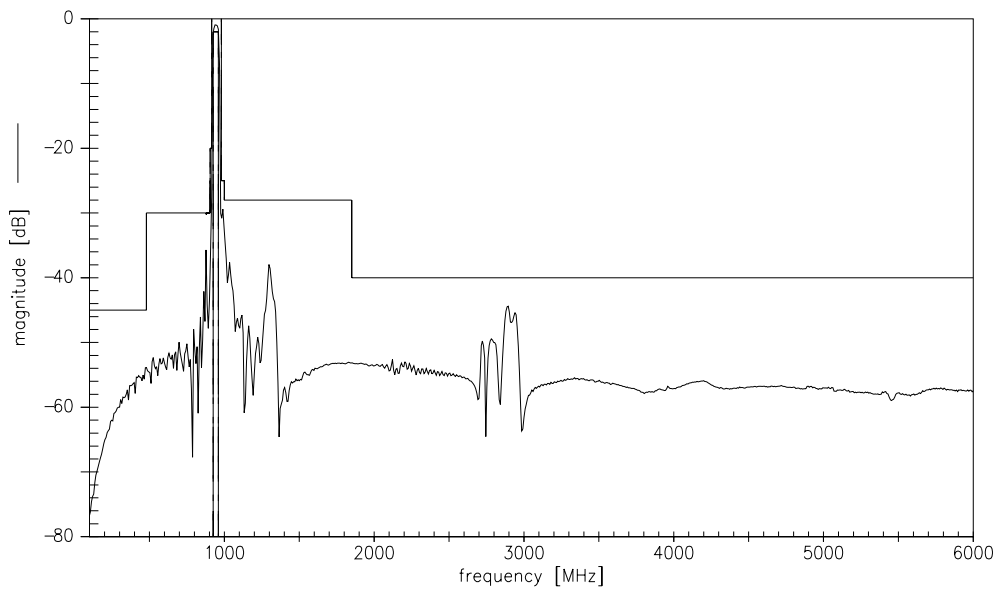
2) 17 dB for  $T = -30$  °C to  $+85$  °C



**Transfer function (passband)**



**Transfer function (wideband)**





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