



# SAW Components

Data Sheet B7717





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**B7717**

**Low-Loss Filter for Mobile Communication**

**1960,0 MHz**

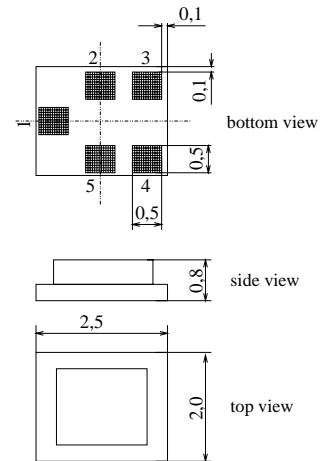
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Chip sized SAW package **QCS5A**

**Features**

- Low-loss RF filter for mobile telephone PCS systems, receive path
- Low amplitude ripple
- Usable passband 60 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50Ω to 200Ω
- Suitable for GPRS class 1 to 12
- Package for **Surface Mounted Technology (SMT)**



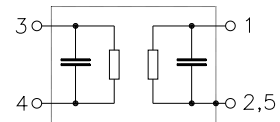
**Terminals**

- Gold-plated Ni

Dimensions in mm, approx. weight 0,015 g

**Pin configuration**

- 1 Input, unbalanced
- 2, 5 Input ground
- 3, 4 Output, balanced
- 2, 5 To be grounded



Type	Ordering code	Marking and Package according to	Packing according to
B7717	B39202-B7717-B610	C61157-A7-A71	F61074-V8104-Z000

Electrostatic Sensitive Device (ESD)

**Maximum ratings**

Operating temperature range	$T$	- 30/+ 85	°C	peak power of GSM signal, duty cycle 4:8
Storage temperature range	$T_{stg}$	- 40/+ 85	°C	
DC voltage	$V_{DC}$	5	V	
ESD voltage	$V_{ESD}$	50	V	
Input power at				
GSM850, GSM900	$P_{IN}$	15	dBm	
GSM1800, GSM1900	$P_{IN}$	12	dBm	
Tx bands				



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**Characteristics**

Operating temperature range:  $T = + 25 \pm 2 \text{ }^\circ\text{C}$   
 Terminating source impedance:  $Z_S = 50 \text{ }\Omega$   
 Terminating load impedance:  $Z_L = 200 \text{ }\Omega$  (balanced) || 15 nH

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	1960,0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	2,6	3,1	dB
1930,0 ... 1990,0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1,0	1,5	dB
1930,0 ... 1990,0 MHz					
<b>Input VSWR</b>		—	1,7	2,2	
1930,0 ... 1990,0 MHz					
<b>Output VSWR</b>		—	1,7	2,2	
1930,0 ... 1990,0 MHz					
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b>		-15	0	15	degree
1930,0 ... 1990,0 MHz					
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>		-1,5	0	1,5	dB
1930,0 ... 1990,0 MHz					
<b>Attenuation</b>	$\alpha$				
0,0 ... 1000,0 MHz		45	50	—	dB
1000,0 ... 1830,0 MHz		25	31	—	dB
1830,0 ... 1900,0 MHz		15	19	—	dB
1900,0 ... 1910,0 MHz		11	18	—	dB
2010,0 ... 2030,0 MHz		8	11	—	dB
2030,0 ... 2070,0 MHz		12	14	—	dB
2070,0 ... 2310,0 MHz		20	22	—	dB
2310,0 ... 2380,0 MHz		35	43	—	dB
2380,0 ... 4600,0 MHz		30	42	—	dB
4600,0 ... 6000,0 MHz		23	50	—	dB



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**Characteristics**

Operating temperature range:  $T = -10$  to  $+75$  °C  
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 200 \Omega$  (balanced) || 15 nH

		<b>min.</b>	<b>typ.</b>	<b>max.</b>	
<b>Center frequency</b>	$f_C$	—	1960,0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$	—	2,8	3,5	dB
1930,0 ... 1990,0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1,2	1,9	dB
1930,0 ... 1990,0 MHz					
<b>Input VSWR</b>		—	1,7	2,4	
1930,0 ... 1990,0 MHz					
<b>Output VSWR</b>		—	1,7	2,4	
1930,0 ... 1990,0 MHz					
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b>		-15	0	15	degree
1930,0 ... 1990,0 MHz					
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>		-1,5	0	1,5	dB
1930,0 ... 1990,0 MHz					
<b>Attenuation</b>	$\alpha$				
0,0 ... 1000,0 MHz		45	50	—	dB
1000,0 ... 1830,0 MHz		25	31	—	dB
1830,0 ... 1900,0 MHz		15	19	—	dB
1900,0 ... 1910,0 MHz		7	15	—	dB
2010,0 ... 2030,0 MHz		5	11	—	dB
2030,0 ... 2070,0 MHz		12	14	—	dB
2070,0 ... 2310,0 MHz		20	22	—	dB
2310,0 ... 2380,0 MHz		35	43	—	dB
2380,0 ... 4600,0 MHz		30	42	—	dB
4600,0 ... 6000,0 MHz		23	50	—	dB



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**Characteristics**

Operating temperature range:  $T = -30$  to  $+85$  °C  
 Terminating source impedance:  $Z_S = 50$   $\Omega$   
 Terminating load impedance:  $Z_L = 200$   $\Omega$  (balanced) || 15 nH

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	1960,0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$	—	2,9	4,0	dB
1930,0 ... 1990,0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1,3	2,4	dB
1930,0 ... 1990,0 MHz					
<b>Input VSWR</b>		—	1,7	2,4	
1930,0 ... 1990,0 MHz					
<b>Output VSWR</b>		—	1,7	2,4	
1930,0 ... 1990,0 MHz					
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b>		-15	0	15	degree
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<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>		-1,5	0	1,5	dB
1930,0 ... 1990,0 MHz					
<b>Attenuation</b>	$\alpha$				
0,0 ... 1000,0 MHz		45	50	—	dB
1000,0 ... 1830,0 MHz		25	31	—	dB
1830,0 ... 1900,0 MHz		15	19	—	dB
1900,0 ... 1910,0 MHz		7	15	—	dB
2010,0 ... 2030,0 MHz		5	11	—	dB
2030,0 ... 2070,0 MHz		12	14	—	dB
2070,0 ... 2310,0 MHz		20	22	—	dB
2310,0 ... 2380,0 MHz		35	43	—	dB
2380,0 ... 4600,0 MHz		30	42	—	dB
4600,0 ... 6000,0 MHz		23	50	—	dB



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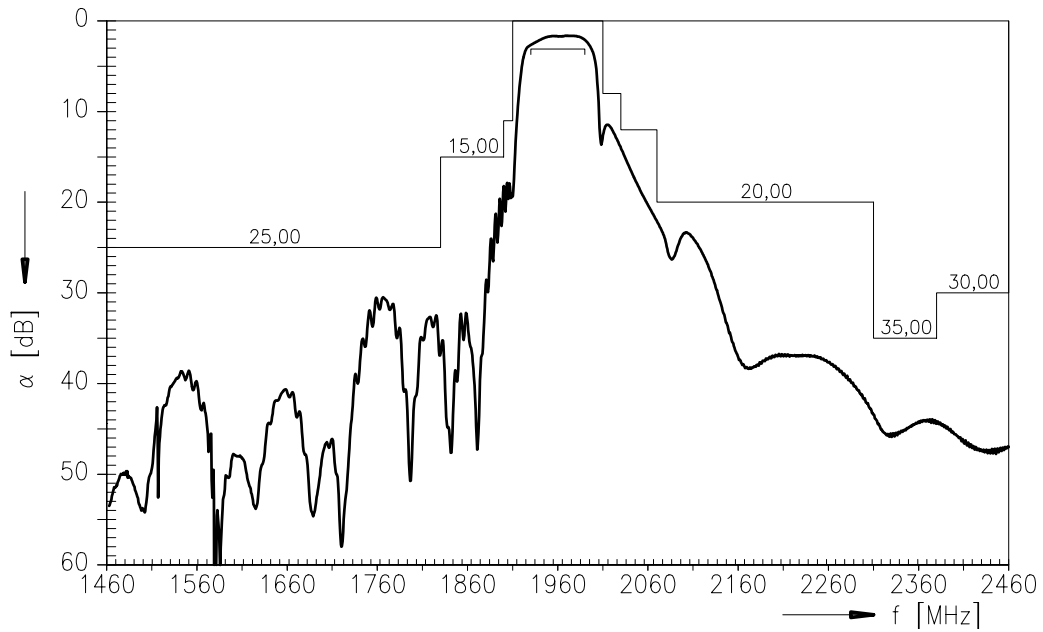
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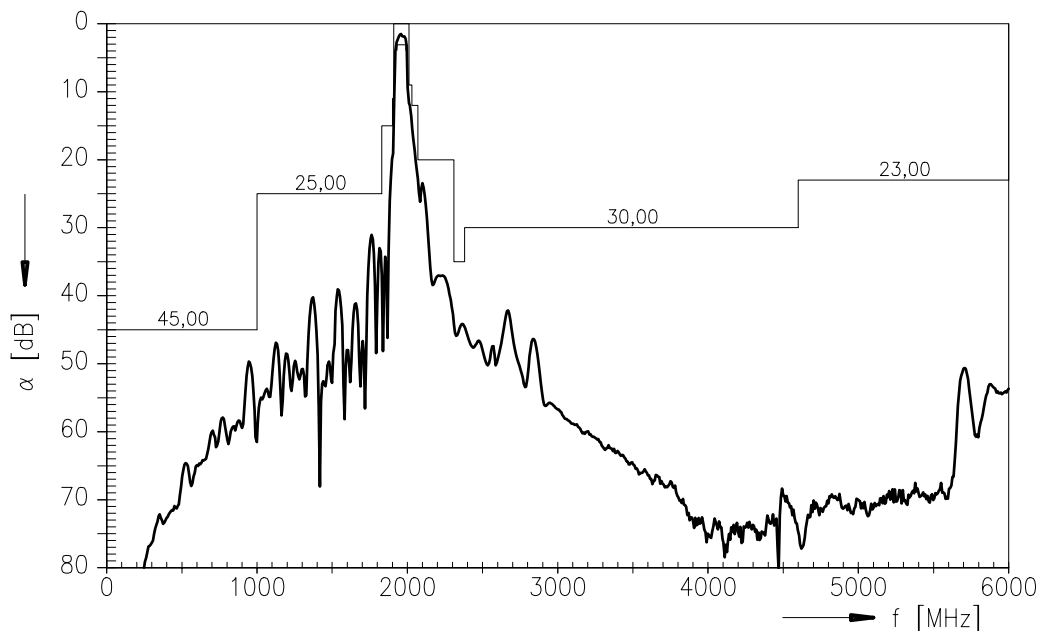
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Transfer function (spec at 25 °C)



Transfer function (wide band):<sup>4</sup>





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