



# SAW Components

Data Sheet B7717, Pb-free

Data Sheet

The image shows the EPCOS logo in white on a dark, textured background. The logo consists of a stylized triangle above the word "EPCOS". The background has a repeating watermark of the Chinese text "维库电子市场网" and the website address "WWW.DZSC.COM" in orange.



**SAW Components**

**B7717**

**Low-Loss Filter for Mobile Communication**

**1960,0 MHz**

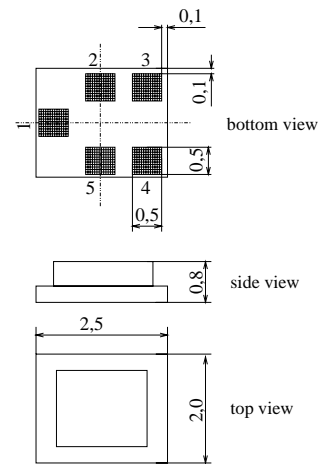
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Chip sized SAW package **QCS5H**

**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 **S**urface **M**ounted **T**echnology (**SMT**)
- Pb-free



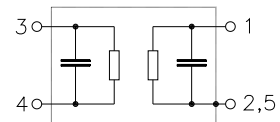
**Terminals**

- 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-K910	C61157-A7-A139	F61074-V8189-Z000

Electrostatic Sensitive Device (ESD)

**Maximum ratings**

Operable temperature range	$T$	- 40/+ 85	°C	Machine Model, 10 pulses
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	peak power of GSM signal, duty cycle 4:8
GSM1800, GSM1900	$P_{IN}$	12	dBm	
Tx bands				

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



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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>	$\alpha_{\max}$				
1930,0 ... 1990,0 MHz		—	2,6	3,1	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
1930,0 ... 1990,0 MHz		—	1,0	1,5	dB
<b>Input VSWR</b>					
1930,0 ... 1990,0 MHz		—	1,7	2,2	
<b>Output VSWR</b>					
1930,0 ... 1990,0 MHz		—	1,7	2,2	
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b>					
1930,0 ... 1990,0 MHz		-15	0	15	degree
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>					
1930,0 ... 1990,0 MHz		-1,5	0	1,5	dB
<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

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	1960,0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$				
1930,0 ... 1990,0 MHz		—	2,8	3,5	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
1930,0 ... 1990,0 MHz		—	1,2	1,9	dB
<b>Input VSWR</b>					
1930,0 ... 1990,0 MHz		—	1,7	2,4	
<b>Output VSWR</b>					
1930,0 ... 1990,0 MHz		—	1,7	2,4	
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b>					
1930,0 ... 1990,0 MHz		-15	0	15	degree
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>					
1930,0 ... 1990,0 MHz		-1,5	0	1,5	dB
<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>	$\alpha_{max}$				
	1930,0 ... 1990,0 MHz	—	2,9	4,0	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
	1930,0 ... 1990,0 MHz	—	1,3	2,4	dB
<b>Input VSWR</b>					
	1930,0 ... 1990,0 MHz	—	1,7	2,4	
<b>Output VSWR</b>					
	1930,0 ... 1990,0 MHz	—	1,7	2,4	
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b>					
	1930,0 ... 1990,0 MHz	-15	0	15	degree
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>					
	1930,0 ... 1990,0 MHz	-1,5	0	1,5	dB
<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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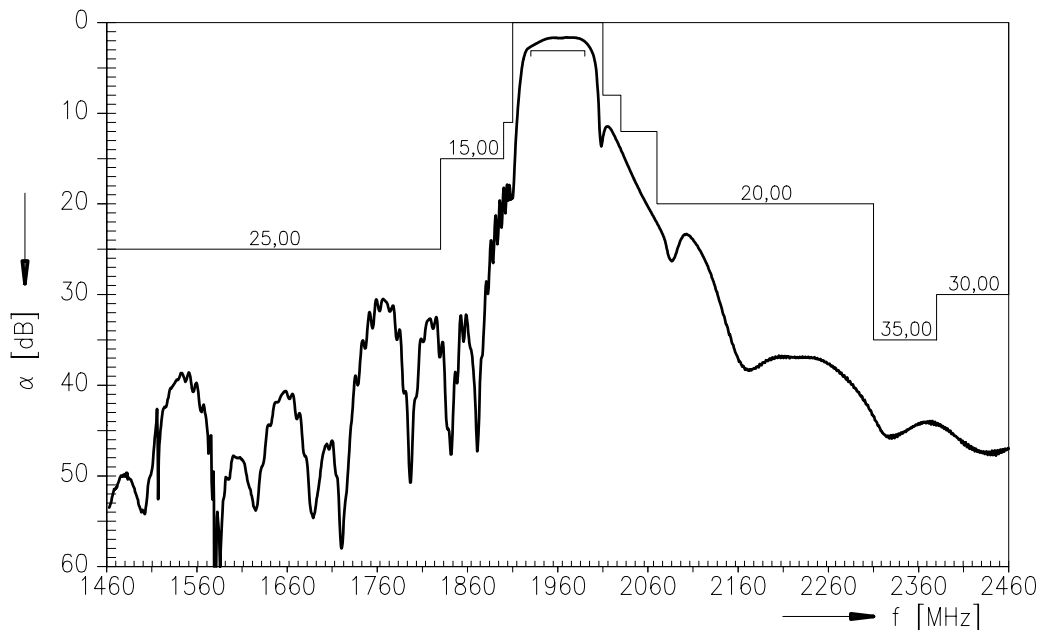
Low-Loss Filter for Mobile Communication

1960,0 MHz

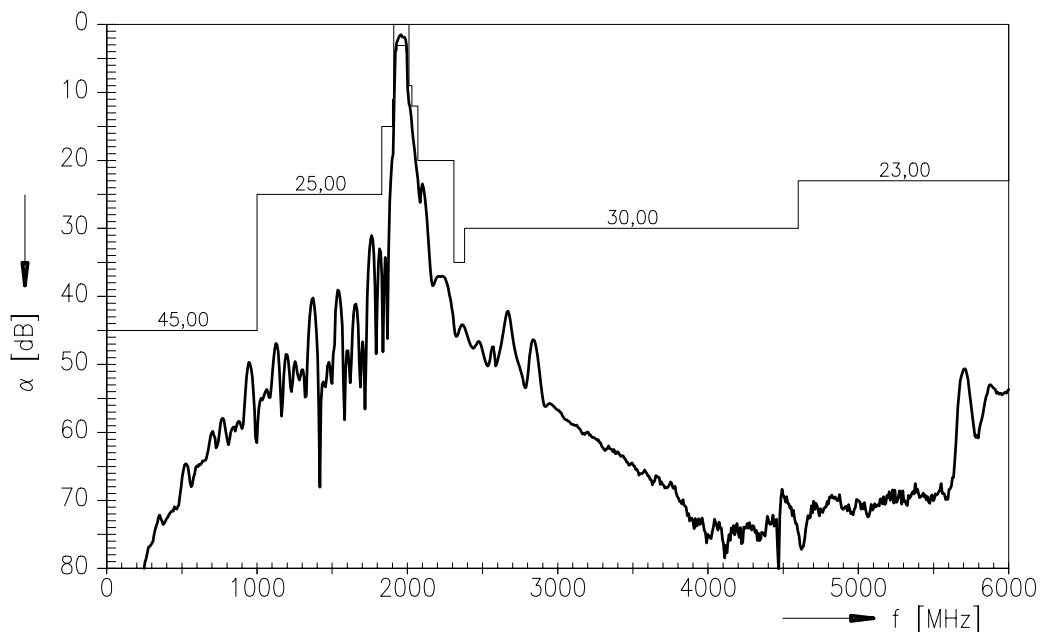
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Transfer function (spec at 25 °C)



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





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