



# SAW Components

Data Sheet B7720





**SAW Components**

**B7720**

**Low-Loss Filter for Mobile Communication**

**1960,0 MHz**

**Data Sheet**



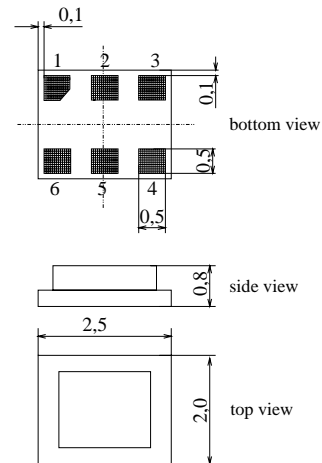
**Chip Sized SAW Package DCS6I**

**Features**

- Low-loss RF filter for mobile telephone PCS systems, receive path
- High selectivity
- Low amplitude ripple
- Usable passband 60 MHz
- Unbalanced to balanced operation
- No external matching required
- Package for **Surface Mounted Technology (SMT)**

**Terminals**

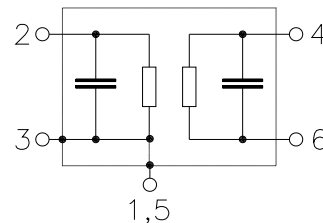
- Gold-plated Ni



Dimensions in mm, approx. weight 0,014 g

**Pin configuration**

- 2 Input
- 4, 6 Balanced output
- 1, 3, 5 To be grounded



Type	Ordering code	Marking and Package according to	Packing according to
B7720	B39202-B7720-C610	C61157-A7-A76	F61074-V8112-Z000

Electrostatic Sensitive Device (ESD)

**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	V	
Input power at				peak power of GSM signal, duty cycle 4:8
GSM850, GSM900	$P_{IN}$	15	dBm	
GSM1800, GSM1900	$P_{IN}$	12	dBm	
GSM1800, GSM1900	$P_{IN}$	13	dBm	
Tx bands				duty cycle 2:8



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**Characteristics**

Operating Temperature Range:  $T = +25 \pm 2^\circ\text{C}$   
 Terminating source impedance:  $Z_S = 50 \Omega$  (unbalanced)  
 Terminating load impedance:  $Z_L = 50 \Omega$  (balanced)

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	1960,0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	2,7	3,1*	dB
	1930,0 ... 1990,0 MHz				
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0,9	1,5	dB
	1930,0 ... 1990,0 MHz				
<b>Input VSWR</b>		—	1,8	2,0	
	1930,0 ... 1990,0 MHz				
<b>Output VSWR</b>		—	1,8	2,0	
	1930,0 ... 1990,0 MHz				
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b>		-15	—	17	°
	1930,0 ... 1990,0 MHz				
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>		-3,0	—	3,0	dB
	1930,0 ... 1990,0 MHz				
<b>Differential to common mode suppression</b>	$S_{sc12}$				
	855,0 ... 995,0 MHz	22,0	29,0	—	dB
	1710,0 ... 1930,0 MHz	20,0	25,0	—	dB
	1930,0 ... 1975,0 MHz	18,0	20,0	—	dB
	1975,0 ... 1990,0 MHz	18,0	18,0	—	dB
	3420,0 ... 3980,0 MHz	22,0	28,0	—	dB
<b>Attenuation</b>	$\alpha$				
	DC ... 1600,0 MHz	28	33	—	dB
	1600,0 ... 1830,0 MHz	25	28	—	dB
	1830,0 ... 1910,0 MHz	12	15	—	dB
	2010,0 ... 2070,0 MHz	14	18	—	dB
	2070,0 ... 4000,0 MHz	23	25	—	dB
	4000,0 ... 5000,0 MHz	18	20	—	dB
	5000,0 ... 6000,0 MHz	16	19	—	dB

\* the insertion attenuation includes also pcb losses of typ. 0,2dB



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**Characteristics**

Operating Temperature Range:  $T = -10$  to  $+80^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$  (unbalanced)  
 Terminating load impedance:  $Z_L = 50\ \Omega$  (balanced)

			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	3,4*	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	1930,0 ... 1990,0 MHz	—	1,0	1,8	dB
<b>Input VSWR</b>		1930,0 ... 1990,0 MHz	—	1,8	2,0	
<b>Output VSWR</b>		1930,0 ... 1990,0 MHz	—	1,8	2,0	
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}</math>)</b>		1930,0 ... 1990,0 MHz	-15	—	17	$^{\circ}$
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>		1930,0 ... 1990,0 MHz	-3,0	—	3,0	dB
<b>Differential to common mode suppression</b>	$S_{sc12}$					
		855,0 ... 995,0 MHz	22,0	29,0	—	dB
		1710,0 ... 1930,0 MHz	20,0	25,0	—	dB
		1930,0 ... 1975,0 MHz	18,0	20,0	—	dB
		1975,0 ... 1990,0 MHz	17,0	18,0	—	dB
		3420,0 ... 3980,0 MHz	22,0	28,0	—	dB
<b>Attenuation</b>	$\alpha$					
		DC ... 1600,0 MHz	28	33	—	dB
		1600,0 ... 1830,0 MHz	25	28	—	dB
		1830,0 ... 1910,0 MHz	10	11	—	dB
		2010,0 ... 2070,0 MHz	10	14	—	dB
		2070,0 ... 4000,0 MHz	23	25	—	dB
		4000,0 ... 5000,0 MHz	18	20	—	dB
		5000,0 ... 6000,0 MHz	16	19	—	dB

\* the insertion attenuation includes also pcb losses of typ. 0,2dB



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**Characteristics**

Operating Temperature Range:  $T = -40$  to  $+85^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$  (unbalanced)  
 Terminating load impedance:  $Z_L = 50\ \Omega$  (balanced)

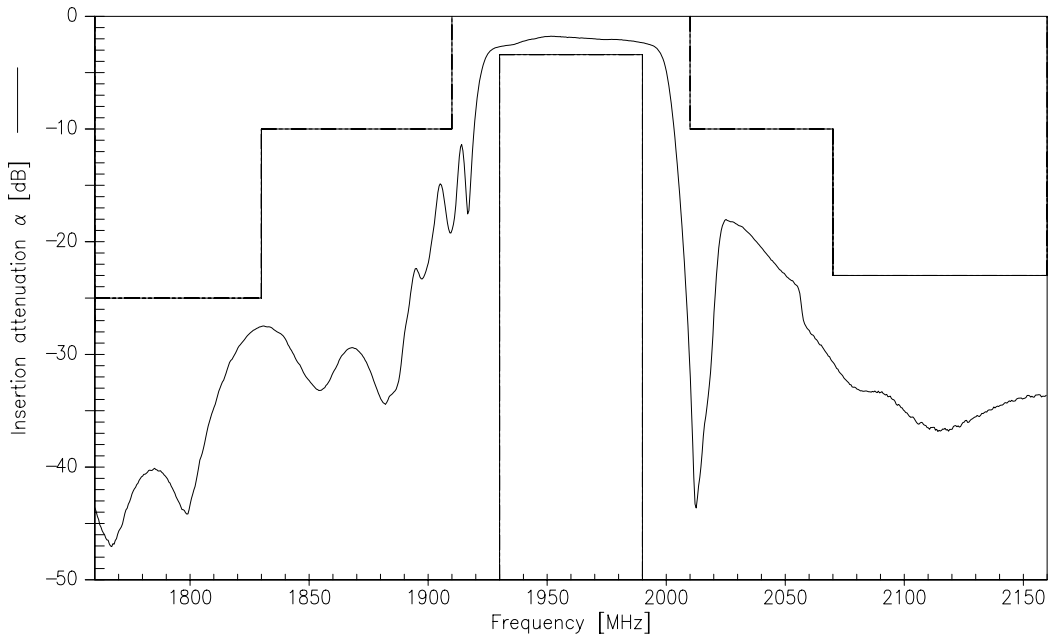
		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	1960,0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	3,6	4,1*	dB
1930,0 ... 1990,0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1,8	2,5	dB
1930,0 ... 1990,0 MHz					
<b>Input VSWR</b>		—	2,0	2,2	
1930,0 ... 1990,0 MHz					
<b>Output VSWR</b>		—	2,0	2,2	
1930,0 ... 1990,0 MHz					
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}</math>)</b>		-15	—	17	°
1930,0 ... 1990,0 MHz					
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>		-3,5	—	3,0	dB
1930,0 ... 1990,0 MHz					
<b>Differential to common mode suppression</b>	$S_{sc12}$				
855,0 ... 995,0 MHz		22,0	29,0	—	dB
1710,0 ... 1930,0 MHz		20,0	25,0	—	dB
1930,0 ... 1975,0 MHz		18,0	20,0	—	dB
1975,0 ... 1990,0 MHz		16,0	18,0	—	dB
3420,0 ... 3980,0 MHz		22,0	28,0	—	dB
<b>Attenuation</b>	$\alpha$				
DC ... 1600,0 MHz		28	33	—	dB
1600,0 ... 1830,0 MHz		25	28	—	dB
1830,0 ... 1910,0 MHz		10	11	—	dB
2010,0 ... 2070,0 MHz		6**	7**	—	dB
2070,0 ... 4000,0 MHz		23	25	—	dB
4000,0 ... 5000,0 MHz		18	20	—	dB
5000,0 ... 6000,0 MHz		16	19	—	dB

\* the insertion attenuation includes also pcb losses of typ. 0,2dB

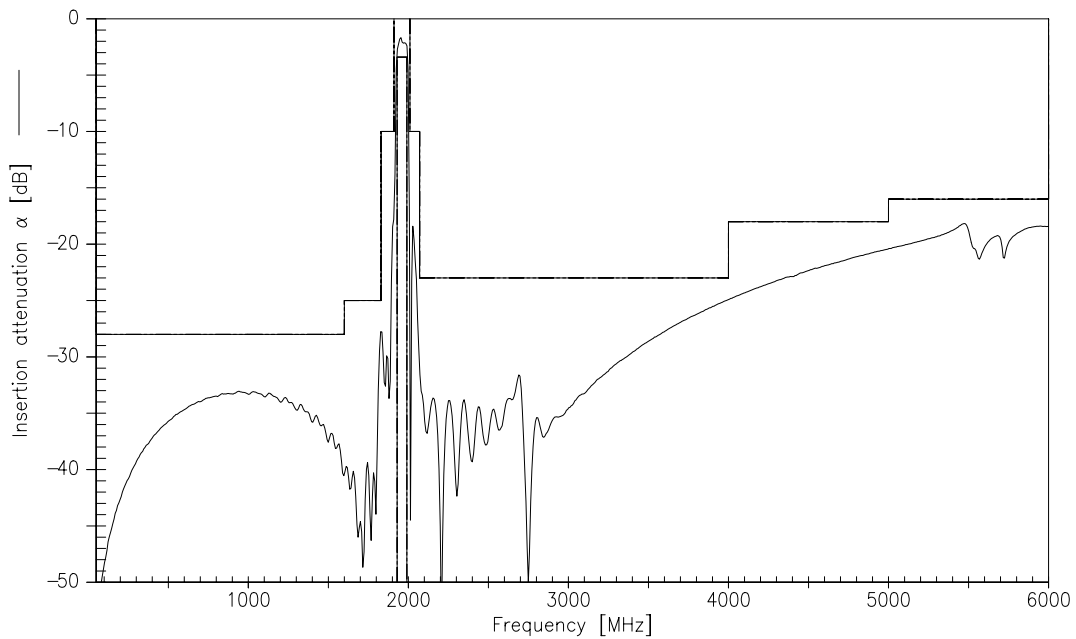
\*\* 8dB min. (9dB typ.) for  $T = -30$  to  $+85^{\circ}\text{C}$



Transfer function (T=-10 ... 80 °C)(narrow band)



Transfer function (wide band)





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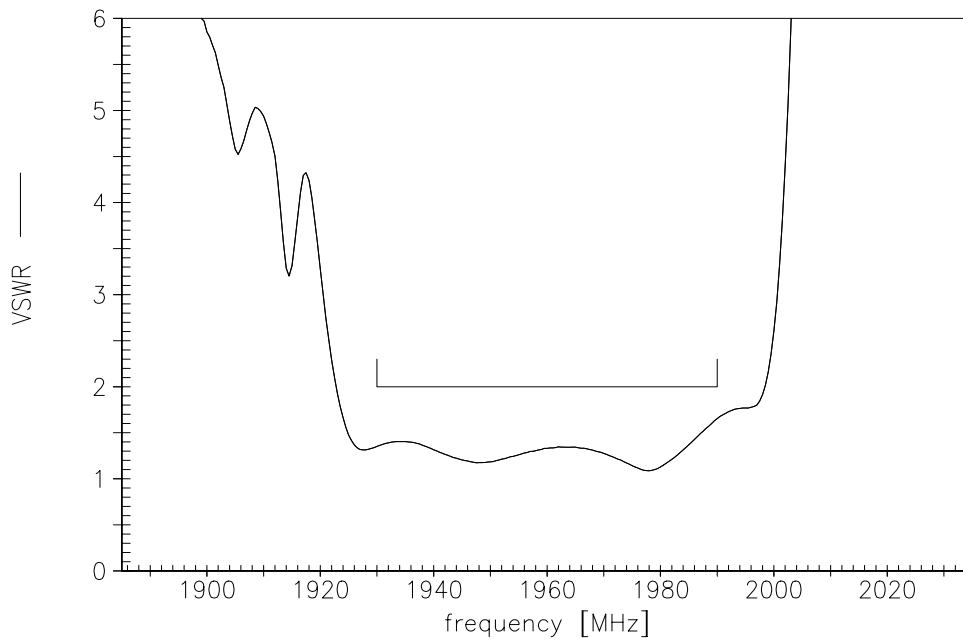


VSWR (T=-10 ... 80 °C)(narrow band)

Input



Output





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