



SAW Components

Data Sheet B7720

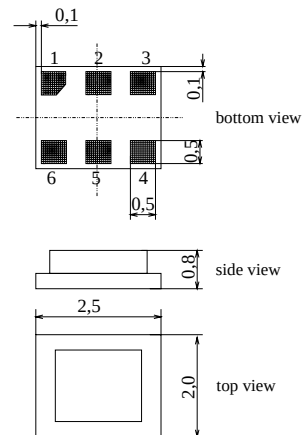


**SAW Components****B7720****Low-Loss Filter for Mobile Communication****1960,0 MHz****Data Sheet****Chip Sized SAW Package DCS6I****Features**

- 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

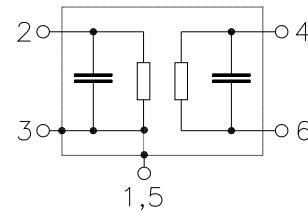
- Gold-plated Ni



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	peak power of GSM signal, duty cycle 4:8 duty cycle 4:8 duty cycle 2:8
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	
GSM1800, GSM1900	P_{IN}	13	dBm	
Tx bands				



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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.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$				
1930,0 ... 1990,0 MHz		—	2,7	3,1*	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0 ... 1990,0 MHz		—	0,9	1,5	dB
Input VSWR					
1930,0 ... 1990,0 MHz		—	1,8	2,0	
Output VSWR					
1930,0 ... 1990,0 MHz		—	1,8	2,0	
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)					
1930,0 ... 1990,0 MHz		-15	—	17	°
Output amplitude balance ($ S_{31} / S_{21} $)					
1930,0 ... 1990,0 MHz		-3,0	—	3,0	dB
Differential to common mode suppression	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
Attenuation	α				
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.	
Center frequency	f_C		—	1960,0	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$					
	1930,0 ... 1990,0 MHz		—	2,8	3,4*	dB
Amplitude ripple (p-p)	$\Delta\alpha$					
	1930,0 ... 1990,0 MHz		—	1,0	1,8	dB
Input VSWR						
	1930,0 ... 1990,0 MHz		—	1,8	2,0	
Output VSWR						
	1930,0 ... 1990,0 MHz		—	1,8	2,0	
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}$)						
	1930,0 ... 1990,0 MHz		-15	—	17	$^{\circ}$
Output amplitude balance ($ S_{31}/S_{21} $)						
	1930,0 ... 1990,0 MHz		-3,0	—	3,0	dB
Differential to common mode suppression	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
Attenuation	α					
	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.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$	—	3,6	4,1*	dB
	1930,0 ... 1990,0 MHz	—	3,6	4,1*	dB
Amplitude ripple (p-p)	$\Delta\alpha$	—	1,8	2,5	dB
	1930,0 ... 1990,0 MHz	—	1,8	2,5	dB
Input VSWR		—	2,0	2,2	
	1930,0 ... 1990,0 MHz	—	2,0	2,2	
Output VSWR		—	2,0	2,2	
	1930,0 ... 1990,0 MHz	—	2,0	2,2	
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}$)		-15	—	17	$^{\circ}$
	1930,0 ... 1990,0 MHz	-15	—	17	$^{\circ}$
Output amplitude balance (S_{31}/S_{21})		-3,5	—	3,0	dB
	1930,0 ... 1990,0 MHz	-3,5	—	3,0	dB
Differential to common mode suppression	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
Attenuation	α				
	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 $+85^{\circ}\text{C}$



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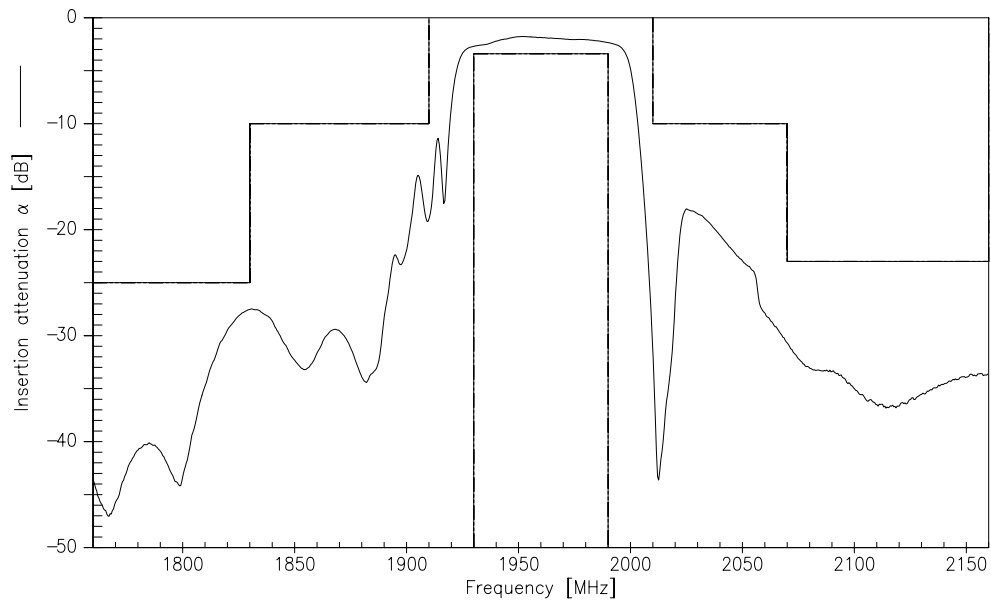
Low-Loss Filter for Mobile Communication

1960,0 MHz

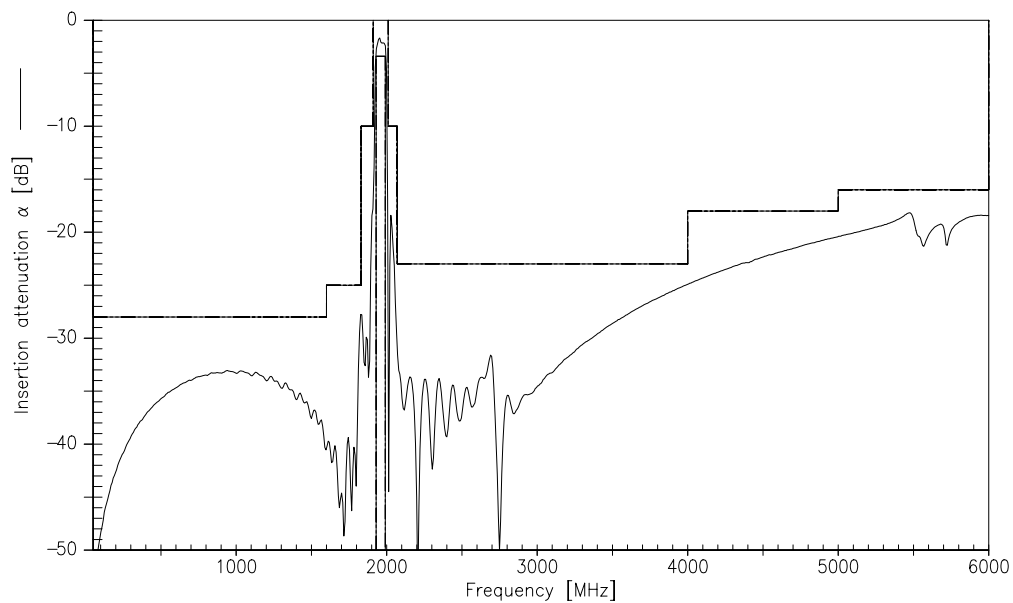
Data Sheet



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



Transfer function (wide band)





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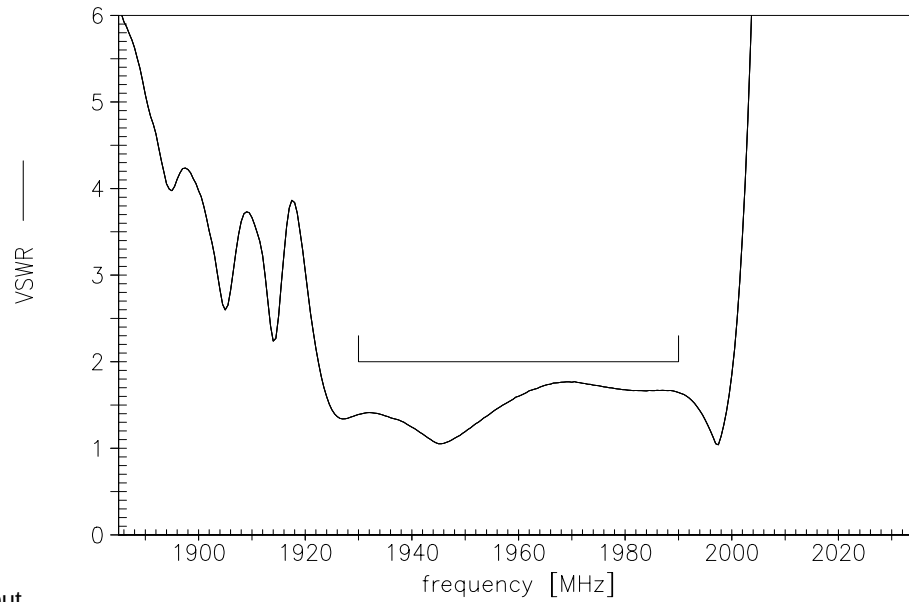
1960,0 MHz

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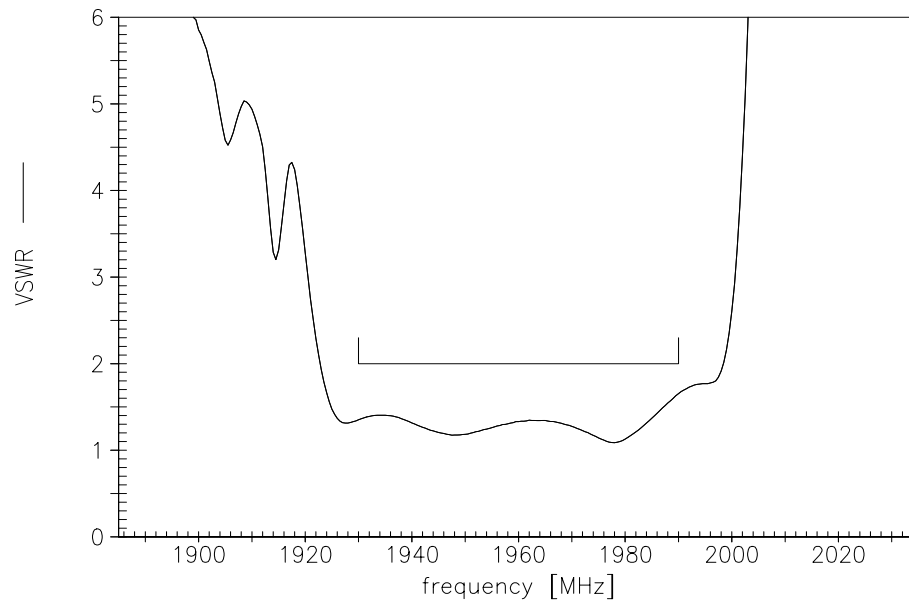


VSWR (T=-10 ... 80 °C)(narrow band)

Input



Output





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Low-Loss Filter for Mobile Communication	1960,0 MHz
Data Sheet	SMD

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