EPCOS

SAW Components

Data Sheet B7720

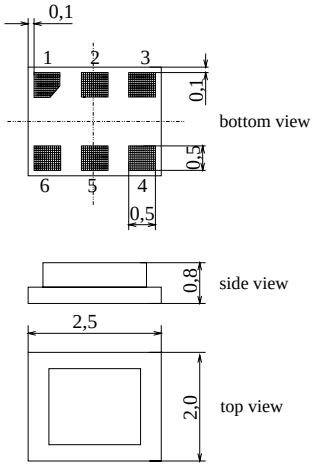
Chip **S**ized **S**AW **P**ackage **DCS6I**

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 **S**urface **M**ounted **T**echnology (**SMT**)

Terminals

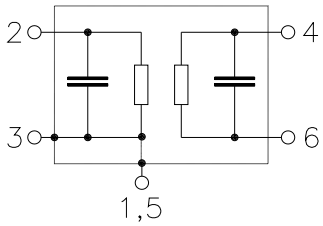
- Gold-plated Ni



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 **S**ensitive **D**evice (**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,
GSM850, GSM900	P_{IN}	15	dBm	duty cycle 4:8
GSM1800,GSM1900	P_{IN}	12	dBm	duty cycle 4:8
GSM1800, GSM1900	P_{IN}	13	dBm	duty cycle 2:8
Tx bands				

Data Sheet SMD

Characteristics

Operating Temperature Range: T = +25 ± 2°C
Terminating source impedance: Z_S = 50 Ω (unbalanced)
Terminating load impedance: Z_L = 50 Ω (balanced)

		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{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 ($\phi(S_{31})-\phi(S_{21})+180°$)					
1930,0 ... 1990,0 MHz		-15	—	17	°
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
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

Data Sheet SMD

Characteristics

Operating Temperature Range: T = -10 to +80˚C
Terminating source impedance: Z_S = 50 Ω (unbalanced)
Terminating load impedance: Z_L = 50 Ω (balanced)

		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{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	˚
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
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

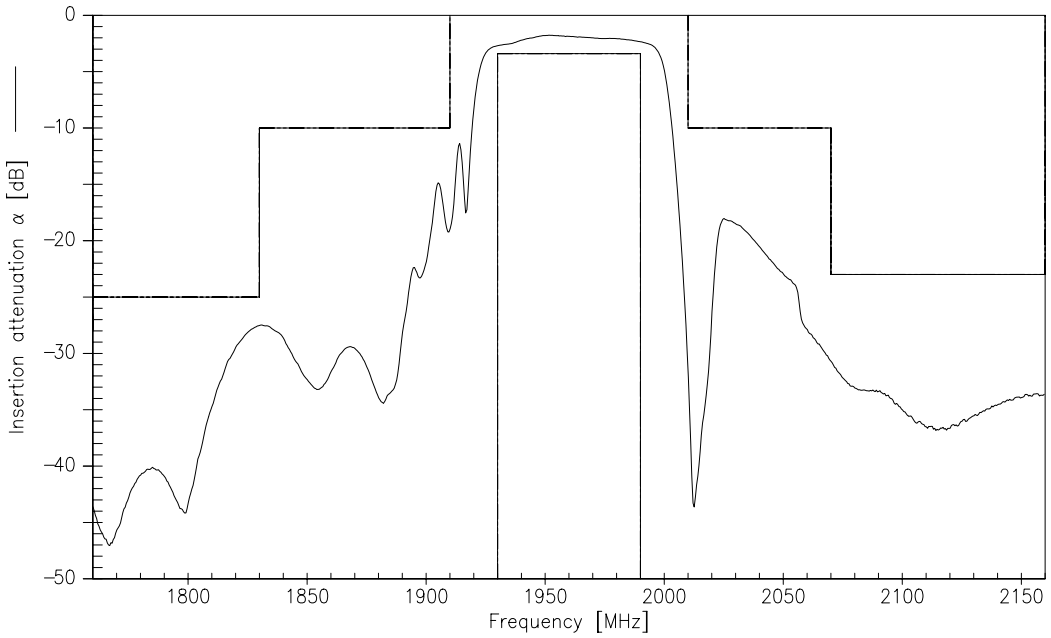
Characteristics

Operating Temperature Range: T = -40 to +85˚C
Terminating source impedance: Z_S = 50 Ω (unbalanced)
Terminating load impedance: Z_L = 50 Ω (balanced)

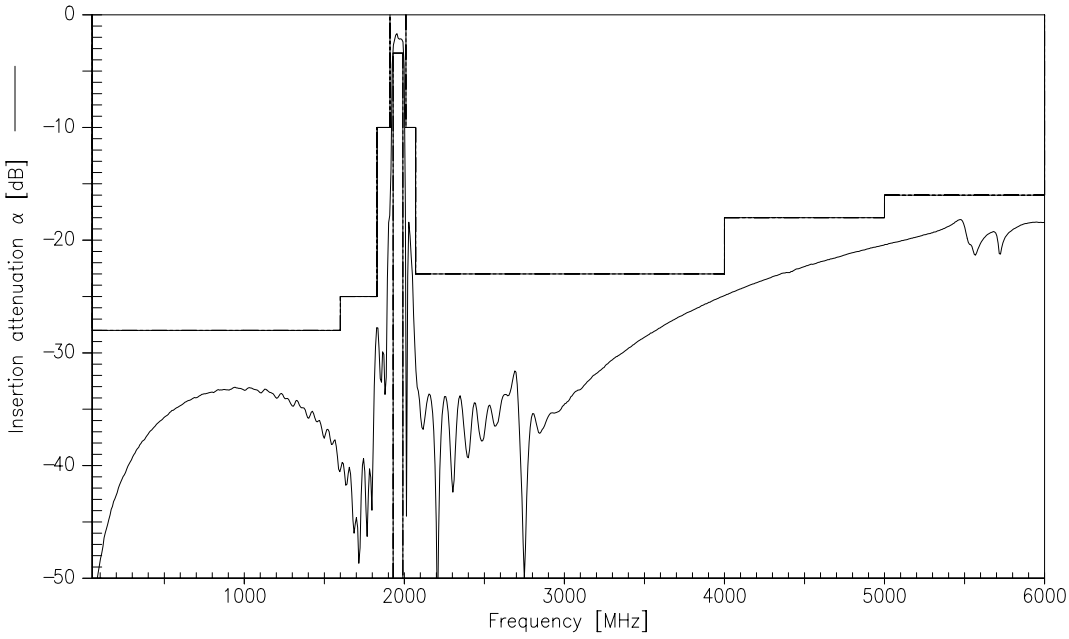
		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{max}				
1930,0 ... 1990,0 MHz		—	3,6	4,1*	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0 ... 1990,0 MHz		—	1,8	2,5	dB
Input VSWR					
1930,0 ... 1990,0 MHz		—	2,0	2,2	
Output VSWR					
1930,0 ... 1990,0 MHz		—	2,0	2,2	
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$)					
1930,0 ... 1990,0 MHz		-15	—	17	°
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
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˚C

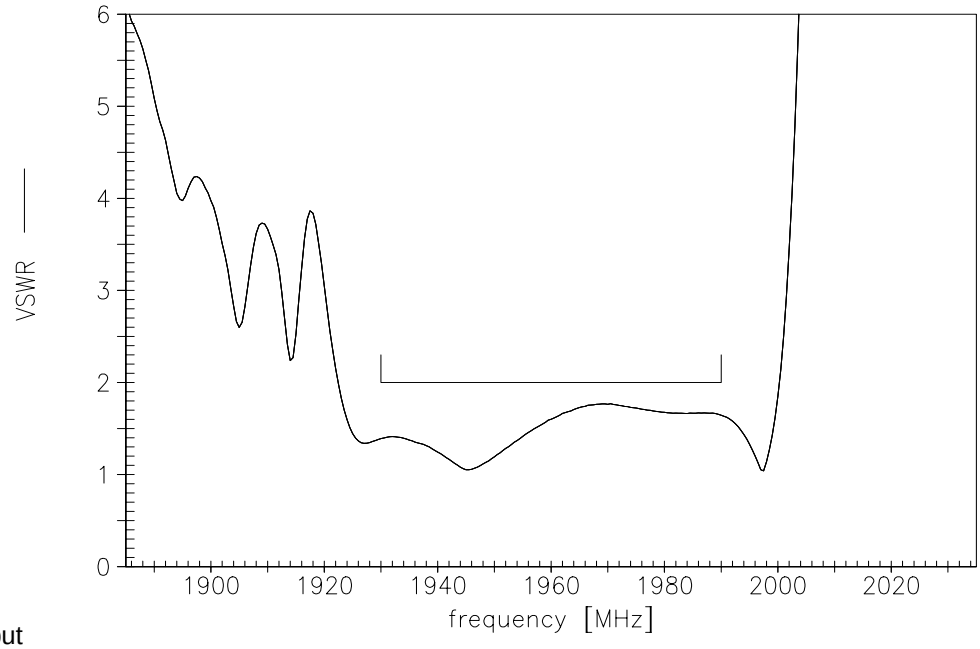
Transfer function (T=-10 ... 80 ˚C)(narrow band)



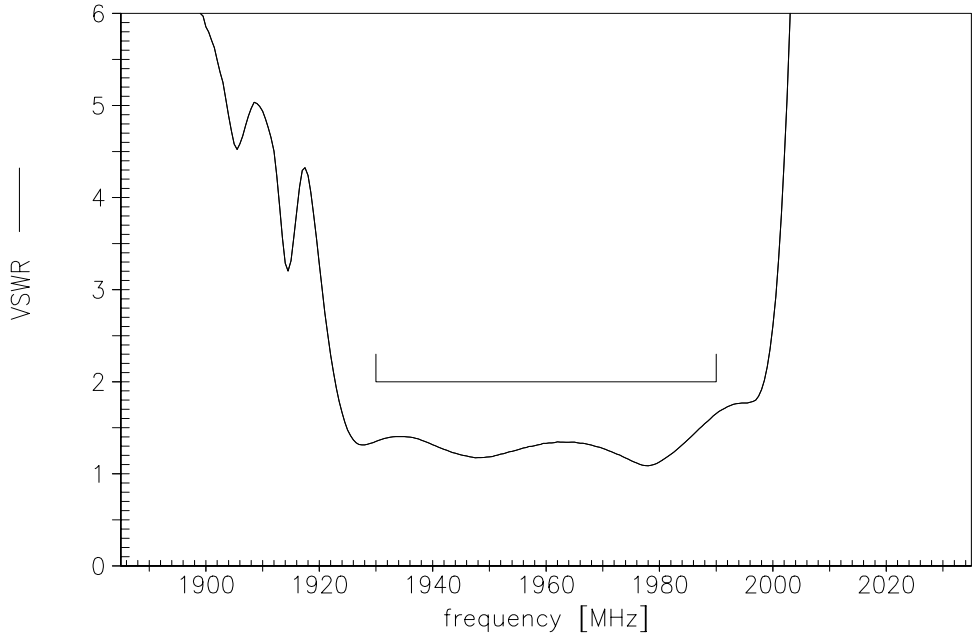
Transfer function (wide band)



VSWR (T=-10 ... 80 ˚C)(narrow band)
Input



Output



Published by EPCOS AG
Surface Acoustic Wave Components Division, SAW MC WT
P.O. Box 80 17 09, 81617 Munich, GERMANY

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