



# SAW Components

Data Sheet B7753





**SAW Components**

**B7753**

**Low-Loss Filter for Mobile Communication**

**881,5 MHz**

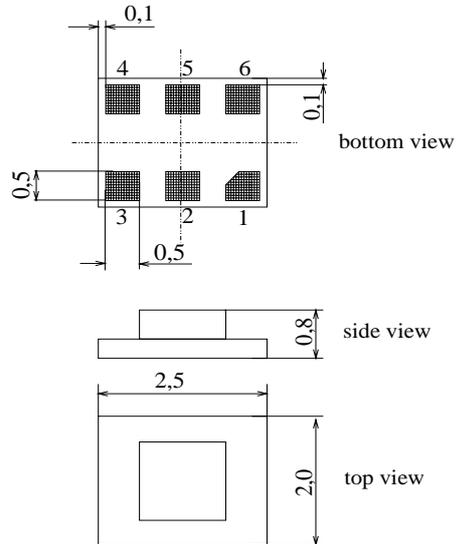
**Data Sheet**



**Chip sized SAW package DCS6K**

**Features**

- Low-loss RF filter for mobile telephone GSM 850 systems, receive path
- Low amplitude ripple
- Usable passband 25 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50 Ω to 150 Ω
- Suitable for GPRS class 1 to 12
- Ceramic package for **Surface Mounted Technology (SMT)**



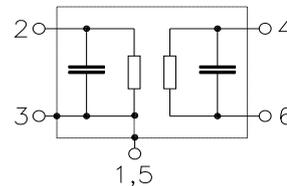
**Terminals**

- Ni, gold-plated

Dimensions in mm, approx. weight 0,014g

**Pin configuration**

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



Type	Ordering code	Marking and Package according to	Packing according to
B7753	B39881-B7753-C910	C61157-A7-A97	F61074-V8153-Z000

Electrostatic Sensitive Device (ESD)

**Maximum ratings**

Operable 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	$V_{ESD}$	50	V	
Input power at GSM850, GSM900, GSM1800 and GSM1900 Tx bands	$P_{IN}$	15	dBm	



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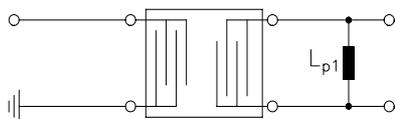


Characteristics

Operating temperature range:  $T = +25\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$  (unbalanced)  
 Terminating load impedance:  $Z_L = 150\ \Omega // 82\text{ nH}$  (balanced)

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	881,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	2,0	2,3	dB
	869,0 ... 894,0 MHz				
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0,5	0,8	dB
	869,0 ... 894,0 MHz				
<b>Unbalanced input VSWR</b>		—	1,9	2,1	
	869,0 ... 894,0 MHz				
<b>Balanced output VSWR</b>		—	1,9	2,1	
	869,0 ... 894,0 MHz				
<b>Common mode Suppression</b>	$S_{sc12}$				dB
	869,0 ... 894,0 MHz	20	35	—	dB
	824,0 ... 995,0 MHz	20	35	—	dB
	1648,0 ... 1990,0 MHz	20	45	—	dB
	3296,0 ... 3980,0 MHz	20	28	—	dB
<b>Attenuation</b>	$\alpha$				dB
	0,0 ... 824,0 MHz	45	65	—	dB
	824,0 ... 849,0 MHz	32	40	—	dB
	914,0 ... 1000,0 MHz	25	30	—	dB
	1000,0 ... 3000,0 MHz	40	65	—	dB
	3000,0 ... 6000,0 MHz	40	55	—	dB

Test matching network



$L_{p1} = 82\text{ nH}$



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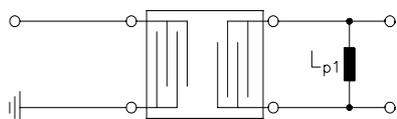
**Characteristics**

Operating temperature range:  $T = -10$  to  $+75$  °C  
 Terminating source impedance:  $Z_S = 50 \Omega$  (unbalanced)  
 Terminating load impedance:  $Z_L = 150 \Omega // 82$  nH (balanced)

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	881,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$				
869,0 ... 894,0 MHz		—	2,3	2,7 <sup>1)</sup>	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
869,0 ... 894,0 MHz		—	0,8	1,2	dB
<b>Unbalanced input VSWR</b>					
869,0 ... 894,0 MHz		—	1,9	2,1	
<b>Balanced output VSWR</b>					
869,0 ... 894,0 MHz		—	1,9	2,1	
<b>Common mode Suppression</b>	$S_{sc12}$				
869,0 ... 894,0 MHz		20	35	—	dB
824,0 ... 995,0 MHz		20	35	—	dB
1648,0 ... 1990,0 MHz		20	45	—	dB
3296,0 ... 3980,0 MHz		20	28	—	dB
<b>Attenuation</b>	$\alpha$				
0,0 ... 824,0 MHz		45	65	—	dB
824,0 ... 849,0 MHz		32	40	—	dB
914,0 ... 1000,0 MHz		25	30	—	dB
1000,0 ... 3000,0 MHz		40	65	—	dB
3000,0 ... 6000,0 MHz		40	55	—	dB

1) Maximum insertion attenuation from -30 to -10 and +75 to +85 °C is 2.7 dB

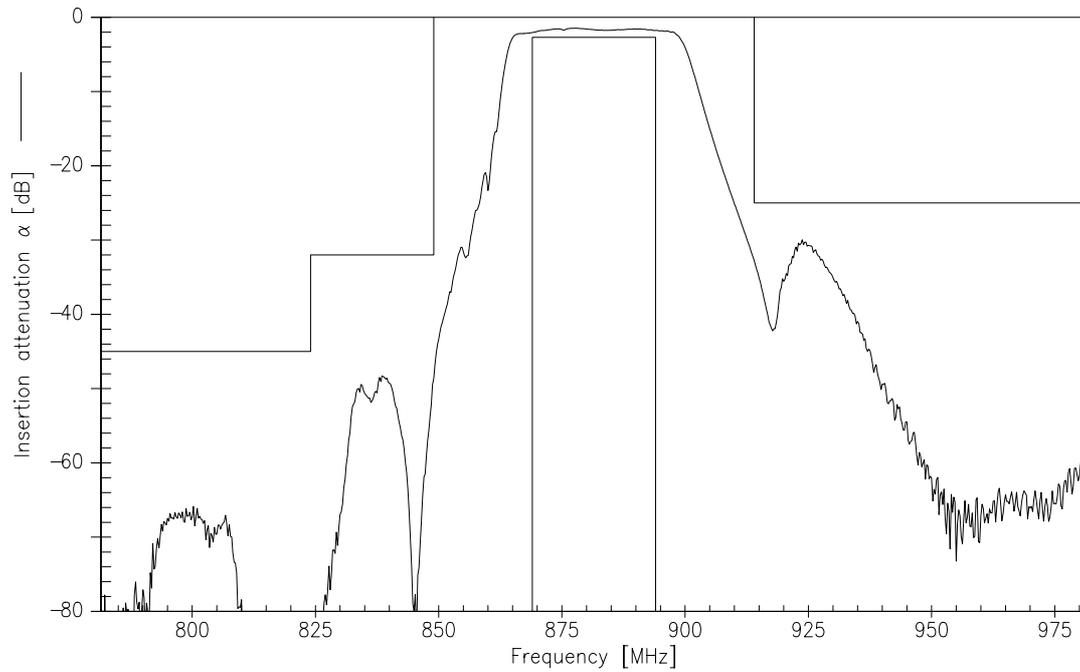
**Test matching network**



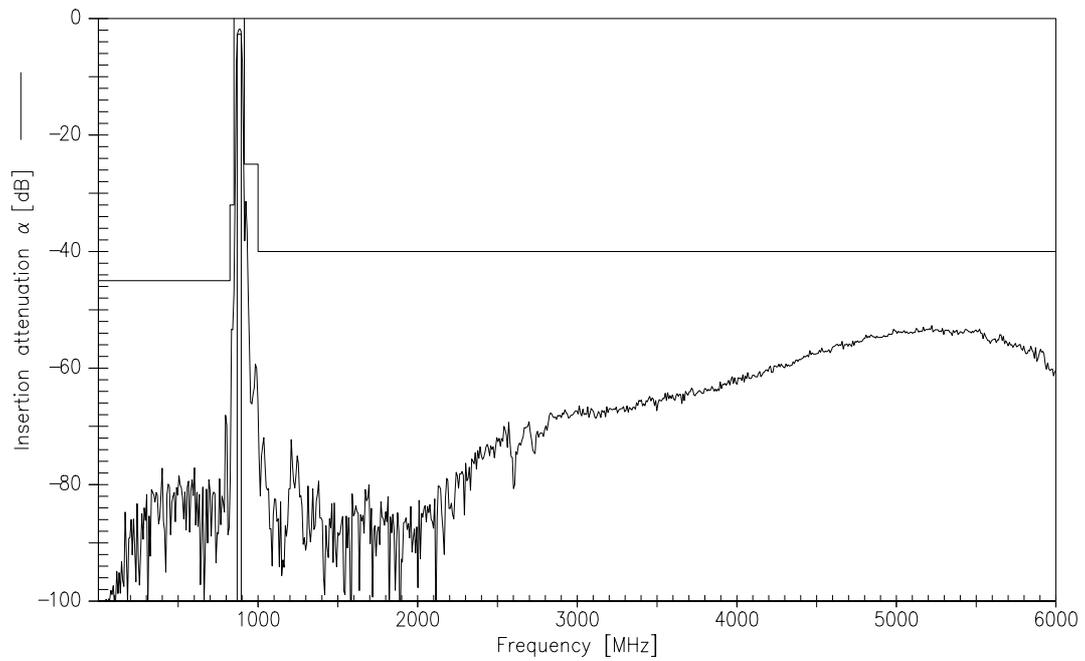
$L_{p1} = 82$  nH



Transfer function (narrowband measurement at 25 °C)



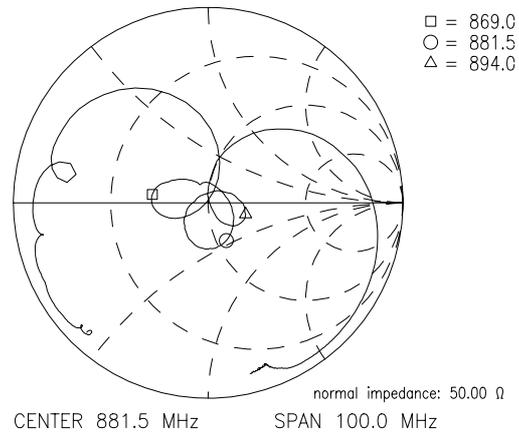
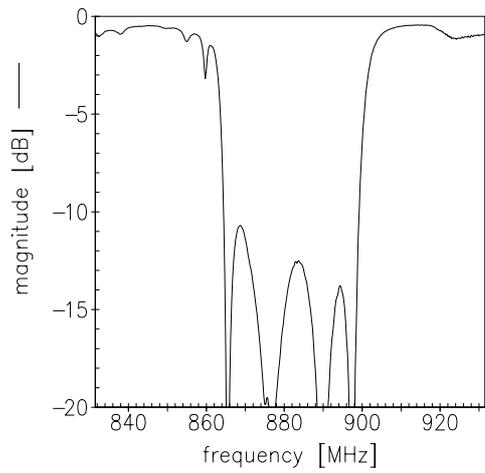
Transfer function (wideband)



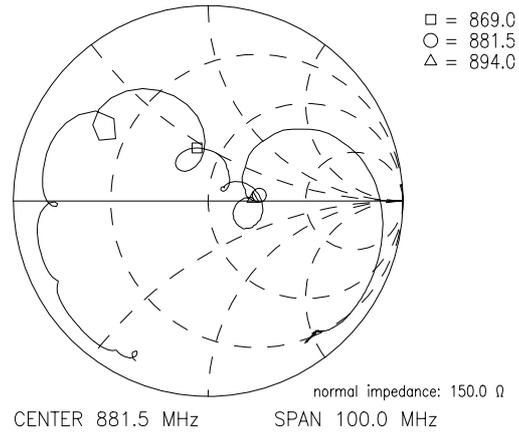
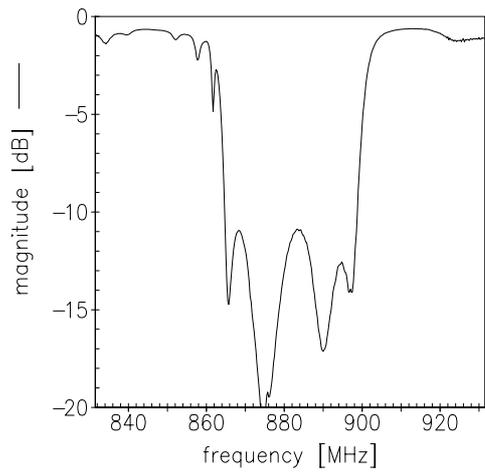


Matching (measurement including test matching network)

$S_{11}$



$S_{22}$





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