



SAW Components

Data Sheet B9020





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Low-Loss Filter for Mobile Communication

1960,0 MHz

Data Sheet



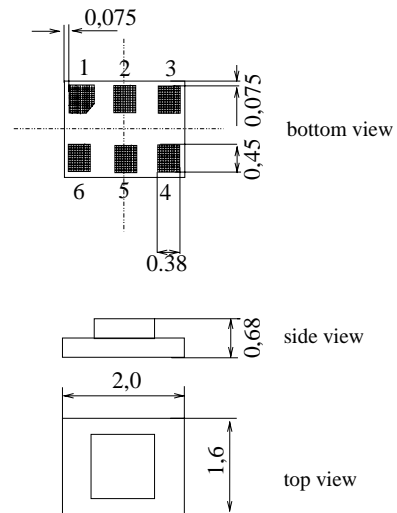
Chip sized SAW package DCS6T

Features

- Low-loss RF filter for mobile telephone PCS systems, receive path
- Very low insertion loss
- Low amplitude ripple
- Usable passband 60 MHz
- Unbalanced to balanced operation
- Impedance transform from 50Ω to 150Ω
- Suitable for GPRS class 1 to 12
- Package for **Surface Mount Technology (SMT)**
- Pb-free

Terminals

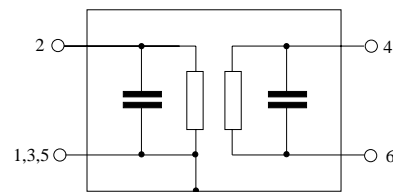
- Ni, gold-plated



Dimensions in mm, approx. weight 0,007 g

Pin configuration

- 2 Input, unbalanced
- 4,6 Output, balanced
- 1,3,5 to be grounded



Type	Ordering code	Marking and Package according to	Packing according to
B9020	B39202-B9020-K310	C61157-A7-A128	F61074-V8152-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	- 30 / + 85	°C	Machine Model, 10 pulses
Storage temperature range	T_{stg}	- 40 / + 85	°C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{DC}	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	
Tx bands				

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



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Characteristics

Operating Temperature Range: $T = 25^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\Omega$ (unbalanced)
 Terminating load impedance: $Z_L = 150\Omega \parallel 56\text{nH}$

		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{max}	—	1,8	2,4	dB
1930,0 ... 1990,0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,7	1,2	dB
1930,0 ... 1990,0 MHz					
Input VSWR		—	1,8	2,0	
1930,0 ... 1990,0 MHz					
Output VSWR		—	1,8	2,0	
1930,0 ... 1990,0 MHz					
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}$)		-4	—	5	°
1930,0 ... 1990,0 MHz					
Output amplitude balance (S_{31}/S_{21})		-1,0	—	1,0	dB
1930,0 ... 1990,0 MHz					
Differential to common mode suppression	$S_{\text{sc}12}$	22,0	26,0	—	dB
1930,0 ... 1990,0 MHz					
Attenuation	α				
DC ... 1510,0 MHz		40	43	—	dB
1510,0 ... 1830,0 MHz		30	35	—	
1830,0 ... 1850,0 MHz		28	30	—	dB
1850,0 ... 1890,0 MHz		23	30	—	
1890,0 ... 1910,0 MHz		13	14	—	dB
2010,0 ... 2070,0 MHz		13	15	—	
2070,0 ... 2400,0 MHz		25	26	—	dB
2400,0 ... 2500,0 MHz		35	42	—	
2500,0 ... 3860,0 MHz		28	34	—	dB
3860,0 ... 3980,0 MHz		45	52	—	
3980,0 ... 6000,0 MHz		40	52	—	dB



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 Terminating source impedance: $Z_S = 50\Omega$ (unbalanced)
 Terminating load impedance: $Z_L = 150\Omega \parallel 56\text{nH}$

			min.	typ.	max.	
Center frequency	f_C		—	1960,0	—	MHz
Maximum insertion attenuation	α_{\max}		—	2,3	2,6	dB
		1930,0 ... 1990,0 MHz				
Amplitude ripple (p-p)	$\Delta\alpha$		—	1,1	1,6	dB
		1930,0 ... 1990,0 MHz				
Input VSWR			—	1,9	2,1	
		1930,0 ... 1990,0 MHz				
Output VSWR			—	1,9	2,1	
		1930,0 ... 1990,0 MHz				
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}$)			-4	—	5	$^{\circ}$
		1930,0 ... 1990,0 MHz				
Output amplitude balance (S_{31}/S_{21})			-1,0	—	1,5	dB
		1930,0 ... 1990,0 MHz				
Differential to common mode suppression	$S_{\text{sc}12}$		22,0	26,0	—	dB
		1930,0 ... 1990,0 MHz				
Attenuation	α					
		DC ... 1510,0 MHz	40	43	—	dB
		1510,0 ... 1830,0 MHz	30	35	—	dB
		1830,0 ... 1850,0 MHz	28	30	—	dB
		1850,0 ... 1890,0 MHz	23	30	—	dB
		1890,0 ... 1910,0 MHz	13	14	—	dB
		2010,0 ... 2070,0 MHz	13	15	—	dB
		2070,0 ... 2400,0 MHz	23	25	—	dB
		2400,0 ... 2500,0 MHz	35	42	—	dB
		2500,0 ... 3860,0 MHz	28	34	—	dB
		3860,0 ... 3980,0 MHz	45	52	—	dB
		3980,0 ... 6000,0 MHz	40	52	—	dB



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Characteristics

Operating Temperature Range: $T = -30$ to $+85^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\Omega$ (unbalanced)
 Terminating load impedance: $Z_L = 150\Omega \parallel 56\text{nH}$

		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{\max}				
1930,0 ... 1990,0 MHz		—	2,4	2,9	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0 ... 1990,0 MHz		—	1,2	1,7	dB
Input VSWR					
1930,0 ... 1990,0 MHz		—	1,9	2,1	
Output VSWR					
1930,0 ... 1990,0 MHz		—	1,9	2,2	
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}$)					
1930,0 ... 1990,0 MHz		-4	—	5	$^{\circ}$
Output amplitude balance (S_{31}/S_{21})					
1930,0 ... 1990,0 MHz		-1,0	—	1,5	dB
Differential to common mode suppression	S_{sc12}				
1930,0 ... 1990,0 MHz		22,0	26,0	—	dB
Attenuation	α				
DC ... 1510,0 MHz		40	43	—	dB
1510,0 ... 1830,0 MHz		30	35	—	dB
1830,0 ... 1850,0 MHz		28	30	—	dB
1850,0 ... 1890,0 MHz		23	30	—	dB
1890,0 ... 1910,0 MHz		12	14	—	dB
2010,0 ... 2070,0 MHz		10	12	—	dB
2070,0 ... 2400,0 MHz		22	24	—	dB
2400,0 ... 2500,0 MHz		35	42	—	dB
2500,0 ... 3860,0 MHz		28	34	—	dB
3860,0 ... 3980,0 MHz		45	52	—	dB
3980,0 ... 6000,0 MHz		40	52	—	dB



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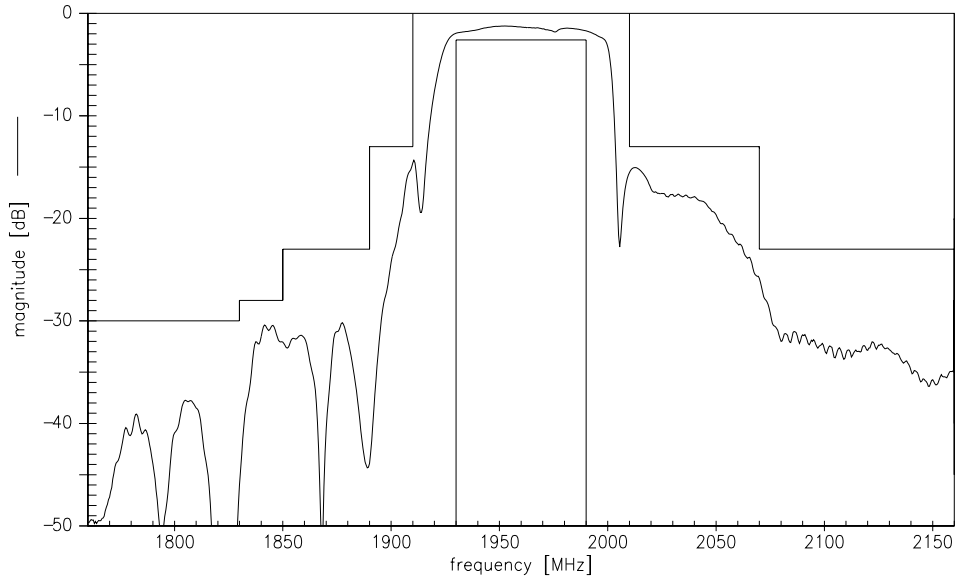
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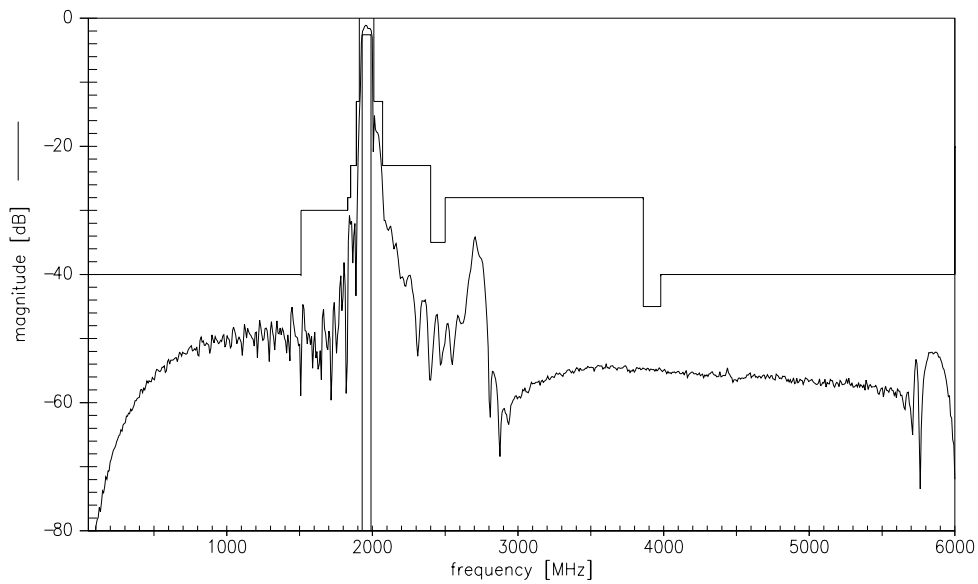
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Transfer function (T=-10 to +80°C)(narrow band)



Transfer function (wide band)





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