



# *SAW Components*

*Data Sheet B4170*

Data Sheet

A large, stylized, 3D-rendered graphic of the EPCOS logo. The letters "EPCOS" are rendered in a white, glowing, sans-serif font, appearing to be part of a larger, curved structure that resembles a stylized globe or a series of overlapping planes. The background is dark and textured.



**SAW Components**

**B4170**

**Low-Loss Filter for Mobile Communication**

**1960,0 MHz**

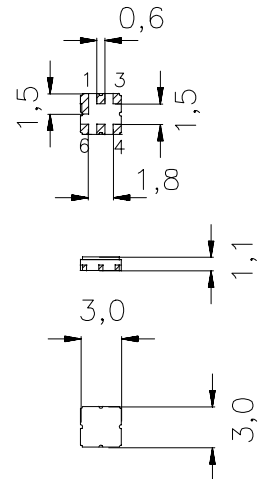
**Preliminary Data**



Ceramic package **DCC6D**

**Features**

- Low-loss RF filter for mobile telephone PCS systems, receive path
- Low amplitude ripple
- Usable passband 60 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50 Ω to 200 Ω
- Package for **Surface Mounted Technology (SMT)**
- Ceramic SMD package



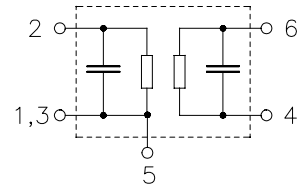
Dimensions in mm, approx. weight 0,037 g

**Terminals**

- Gold-plated Ni

**Pin configuration**

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



Type	Ordering code	Marking and Package according to	Packing according to
B4170	B39202-B4170-U510	C61157-A7-A68	F61074-V8089-Z000

Electrostatic Sensitive Device (ESD)

**Maximum ratings**

Operating temperature range	$T$	-30 / +85	°C	source/load impedance 50Ω/200Ω	
Storage temperature range	$T_{stg}$	-40 / +85	°C		
DC voltage	$V_{DC}$	5	V		
Input power max.	$P_{IN}$				
		1850,0 ... 1910,0 MHz	13	dBm	peak power of GSM signal duty cycle 1:8
		elsewhere	0	dBm	



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**Characteristics**

Operating temperature range:  $T = +25 \pm 2 \text{ }^\circ\text{C}$   
 Terminating source impedance:  $Z_S = 50 \text{ } \Omega$   
 Terminating load impedance:  $Z_L = 200 \text{ } \Omega$  (balanced) || 15 nH

		<b>min.</b>	<b>typ.</b>	<b>max.</b>	
<b>Center frequency</b>	$f_C$	—	1960,0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	3,0	3,5	dB
	1930,0 ... 1990,0 MHz				
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1,0	1,6	dB
	1930,0 ... 1990,0 MHz				
<b>Input VSWR</b>		—	1,9	2,1	
	1930,0 ... 1990,0 MHz				
<b>Output VSWR</b>		—	1,7	2,1	
	1930,0 ... 1990,0 MHz				
<b>Attenuation</b>	$\alpha$				
	0,0 ... 1000,0 MHz	45	72	—	dB
	1000,0 ... 1830,0 MHz	40	60	—	dB
	1830,0 ... 1900,0 MHz	15	19	—	dB
	1900,0 ... 1910,0 MHz	12	17	—	dB
	2010,0 ... 2020,0 MHz	8	12	—	dB
	2020,0 ... 2070,0 MHz	12	18	—	dB
	2070,0 ... 2200,0 MHz	25	40	—	dB
	2200,0 ... 2380,0 MHz	45	55	—	dB
	2380,0 ... 4600,0 MHz	30	40	—	dB
	4600,0 ... 6000,0 MHz	23	30	—	dB



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**Characteristics**

Operating temperature range:  $T = +15$  to  $+60$  °C  
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 200 \Omega$  (balanced) || 15 nH

		<b>min.</b>	<b>typ.</b>	<b>max.</b>	
<b>Center frequency</b>	$f_C$	—	1960,0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$	—	3,0	3,8	dB
1930,0 ... 1990,0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1,0	1,9	dB
1930,0 ... 1990,0 MHz					
<b>Input VSWR</b>		—	1,9	2,1	
1930,0 ... 1990,0 MHz					
<b>Output VSWR</b>		—	1,7	2,1	
1930,0 ... 1990,0 MHz					
<b>Attenuation</b>	$\alpha$				
0,0 ... 1000,0 MHz		45	72	—	dB
1000,0 ... 1830,0 MHz		40	60	—	dB
1830,0 ... 1900,0 MHz		15	19	—	dB
1900,0 ... 1910,0 MHz		8	16	—	dB
2010,0 ... 2020,0 MHz		7	10	—	dB
2020,0 ... 2070,0 MHz		12	17	—	dB
2070,0 ... 2200,0 MHz		25	40	—	dB
2200,0 ... 2380,0 MHz		45	55	—	dB
2380,0 ... 4600,0 MHz		30	40	—	dB
4600,0 ... 6000,0 MHz		23	30	—	dB



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<b>Low-Loss Filter for Mobile Communication</b>	<b>1960,0 MHz</b>

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**Characteristics**

Operating temperature range:  $T = -10$  to  $+80$  °C  
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 200 \Omega$  (balanced) || 15 nH

		<b>min.</b>	<b>typ.</b>	<b>max.</b>	
<b>Center frequency</b>	$f_C$	—	1960,0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$	—	3,2	4,0	dB
	1930,0 ... 1990,0 MHz				
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1,2	2,1	dB
	1930,0 ... 1990,0 MHz				
<b>Input VSWR</b>		—	1,9	2,2	
	1930,0 ... 1990,0 MHz				
<b>Output VSWR</b>		—	1,7	2,2	
	1930,0 ... 1990,0 MHz				
<b>Attenuation</b>	$\alpha$				
	0,0 ... 1000,0 MHz	45	72	—	dB
	1000,0 ... 1830,0 MHz	40	60	—	dB
	1830,0 ... 1900,0 MHz	15	17	—	dB
	1900,0 ... 1910,0 MHz	7	15	—	dB
	2010,0 ... 2020,0 MHz	6	9	—	dB
	2020,0 ... 2070,0 MHz	12	17	—	dB
	2070,0 ... 2200,0 MHz	25	40	—	dB
	2200,0 ... 2380,0 MHz	45	55	—	dB
	2380,0 ... 4600,0 MHz	30	40	—	dB
	4600,0 ... 6000,0 MHz	23	30	—	dB



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**Characteristics**

Operating temperature range:  $T = -30$  to  $+85$  °C  
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 200 \Omega$  (balanced) || 15 nH

		<b>min.</b>	<b>typ.</b>	<b>max.</b>	
<b>Center frequency</b>	$f_C$	—	1960,0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$	—	3,3	4,5	dB
	1930,0 ... 1990,0 MHz				
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1,3	2,4	dB
	1930,0 ... 1990,0 MHz				
<b>Input VSWR</b>		—	1,9	2,2	
	1930,0 ... 1990,0 MHz				
<b>Output VSWR</b>		—	1,7	2,2	
	1930,0 ... 1990,0 MHz				
<b>Attenuation</b>	$\alpha$				
	0,0 ... 1000,0 MHz	45	72	—	dB
	1000,0 ... 1830,0 MHz	40	60	—	dB
	1830,0 ... 1900,0 MHz	15	17	—	dB
	1900,0 ... 1910,0 MHz	7	15	—	dB
	2010,0 ... 2020,0 MHz	6	9	—	dB
	2020,0 ... 2070,0 MHz	12	17	—	dB
	2070,0 ... 2200,0 MHz	25	40	—	dB
	2200,0 ... 2380,0 MHz	45	55	—	dB
	2380,0 ... 4600,0 MHz	30	40	—	dB
	4600,0 ... 6000,0 MHz	23	30	—	dB



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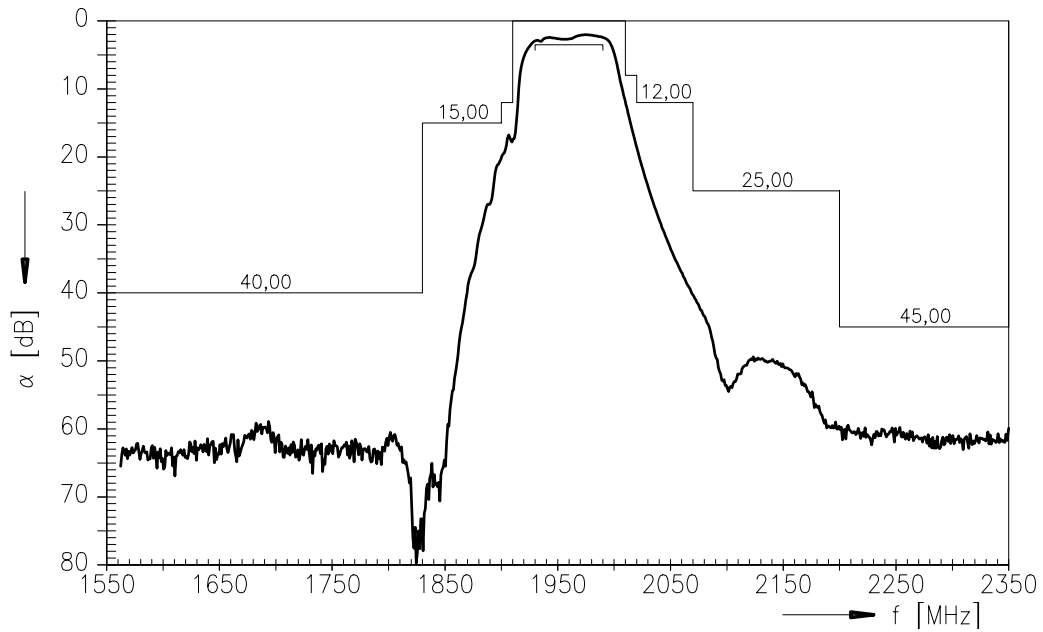
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1960,0 MHz

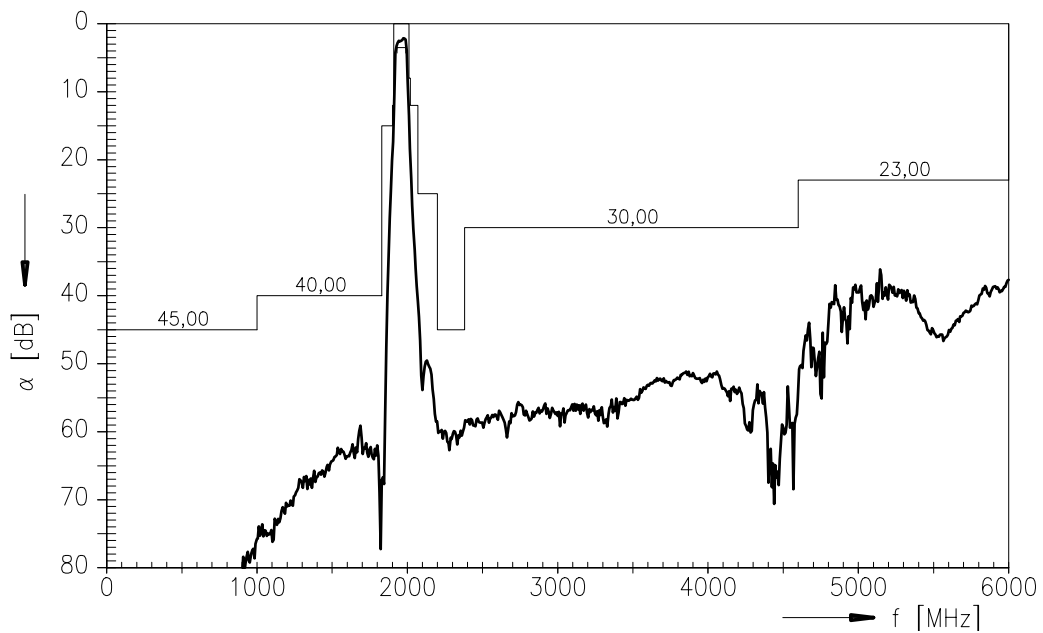
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Transfer function (spec at 25 °C)



Transfer function (wide band):





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Preliminary Data



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