



# RF Filters for Cellular Phones

## Series/Type: B4167

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B39182B4167U510	B39182B4142U410	2009-04-03	2009-07-15	2009-10-15

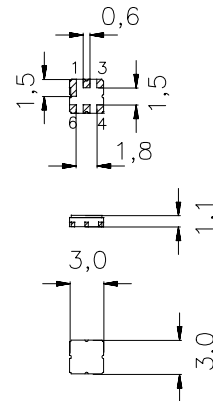
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 Ceramic package **DCC6D**
**Features**

- Low-loss RF filter for mobile telephone PCN systems, receive path
- Low amplitude ripple
- Usable passband 75 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50Ω to 200Ω
- Package for **S**urface **M**ounted **T**echnology (**SMT**)
- Ceramic SMD package

**Terminals**

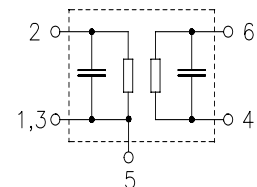
- Ni, gold-plated



Dimensions in mm, approx. weight 0,037 g

**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
B4167	B39182-B4167-U510	C61157-A7-A68	F61074-V8089-Z000

Electrostatic Sensitive Device (ESD)

**Maximum ratings**

Operable temperature range	$T$	- 20 / + 75	°C	source/load impedance 50/200 Ω peak power of GSM signal, duty cycle 2 : 8
Storage temperature range	$T_{stg}$	- 40 / + 85	°C	
DC voltage	$V_{DC}$	5	V	
Input power max.				
1710 ... 1785 MHz	$P_{IN}$	11	dBm	
1805 ... 1880 MHz	$P_{IN}$	11	dBm	
elsewhere	$P_{IN}$	0	dBm	

**Data Sheet**

**Characteristics**

Operating Temperature Range:	$T = +25 \pm 2 \text{ }^\circ\text{C}$
Terminating source impedance:	$Z_S = 50\Omega$ (unbalanced)
Terminating load impedance:	$Z_L = 200\Omega \parallel 22 \text{ nH}$ (balanced)

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	1842,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	2,0	3,5	dB
1805,0 ... 1880,0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0,9	2,0	dB
1805,0 ... 1880,0 MHz					
<b>Input VSWR</b>		—	1,8	2,3	
1805,0 ... 1880,0 MHz					
<b>Output VSWR</b>		—	1,8	2,3	
1805,0 ... 1880,0 MHz					
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>		-1,5	-1,1 / +0,6	1,5	dB
1805,0 ... 1880,0 MHz					
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b>		-12	+/- 6	12	°
1805,0 ... 1880,0 MHz					
<b>Attenuation</b>	$\alpha$	40	50	—	dB
0,0 ... 1000,0 MHz					
1000,0 ... 1550,0 MHz		30	40	—	dB
1550,0 ... 1705,0 MHz		25	28	—	
1705,0 ... 1785,0 MHz		12	18	—	dB
1920,0 ... 1980,0 MHz		12	17	—	
1980,0 ... 2010,0 MHz		18	22	—	dB
2010,0 ... 2500,0 MHz		20	26	—	
2500,0 ... 3840,0 MHz		25	35	—	dB
3840,0 ... 6000,0 MHz		20	32	—	

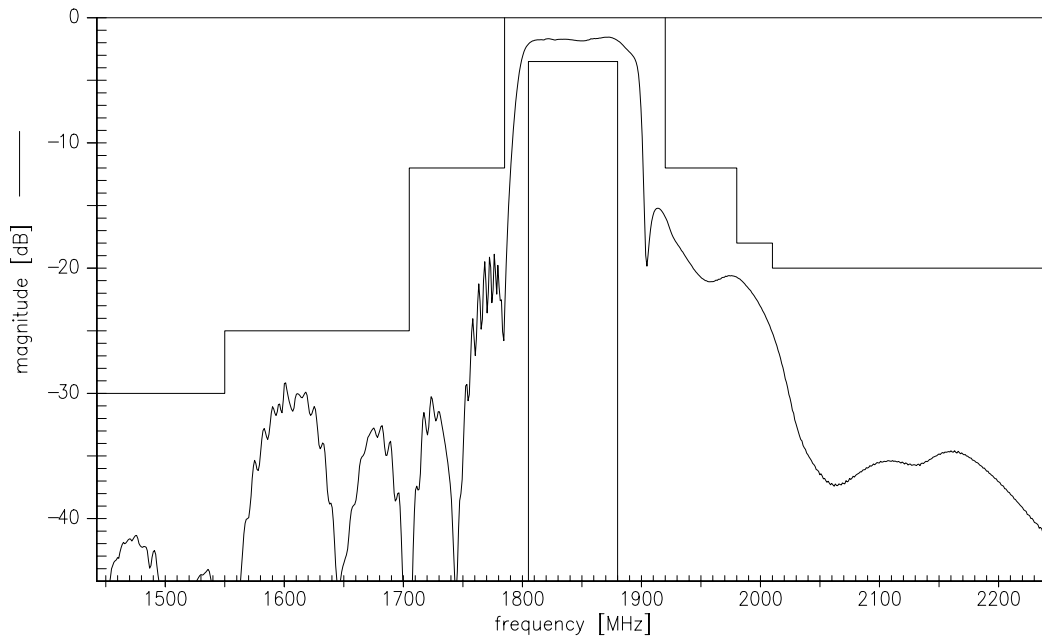

**Characteristics**

Operating Temperature Range:  $T = -10$  to  $+80^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\Omega$  (unbalanced)  
 Terminating load impedance:  $Z_L = 200\Omega$  (balanced) ||  $22$  nH

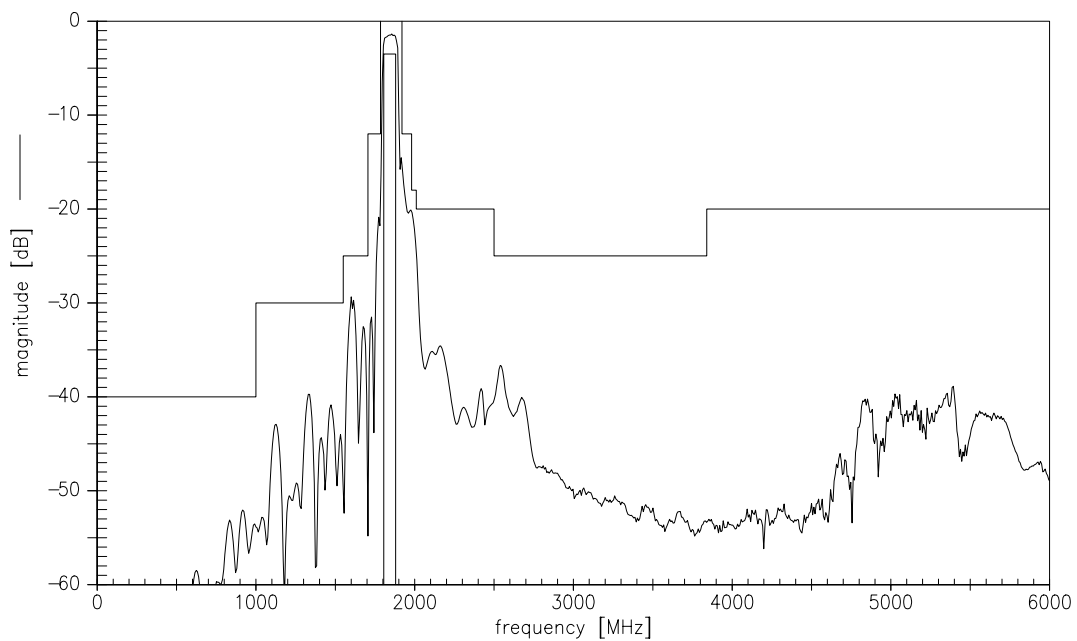
		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	1842,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	2,5	4,0	dB
1805,0 ... 1880,0	MHz				
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1,4	2,5	dB
1805,0 ... 1880,0	MHz				
<b>Input VSWR</b>		—	1,8	2,4	
1805,0 ... 1880,0	MHz				
<b>Output VSWR</b>		—	1,8	2,4	
1805,0 ... 1880,0	MHz				
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>		-1,5	-1,1 / +0,6	1,5	dB
1805,0 ... 1880,0	MHz				
<b>Output phase balance (<math>\phi(S_{31})-\phi(S_{21})+180^{\circ}</math>)</b>		-15	+/- 6	15	°
1805,0 ... 1880,0	MHz				
<b>Attenuation</b>	$\alpha$				
0,0 ... 1000,0	MHz	40	50	—	dB
1000,0 ... 1550,0	MHz	30	40	—	dB
1550,0 ... 1705,0	MHz	25	28	—	dB
1705,0 ... 1785,0	MHz	10	15	—	dB
1920,0 ... 1980,0	MHz	10	17	—	dB
1980,0 ... 2010,0	MHz	18	22	—	dB
2010,0 ... 2500,0	MHz	20	26	—	dB
2500,0 ... 3840,0	MHz	25	35	—	dB
3840,0 ... 6000,0	MHz	20	32	—	dB



**Transfer function**



**Transfer function (wide band)**



**Published by EPCOS AG****Surface Acoustic Wave Components Division, OFW E MF****P.O. Box 80 17 09, D-81617 München**

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