



# SAW filters for infrastructure systems

## Series/Type: B3605

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B39700B3605Z510	B39700B5018Z510	2011-04-01	2011-06-30	2011-09-30

For further information please contact your nearest EPCOS sales office, which will also support you in selecting a suitable substitute. The addresses of our worldwide sales network are presented at [www.epcos.com/sales](http://www.epcos.com/sales).

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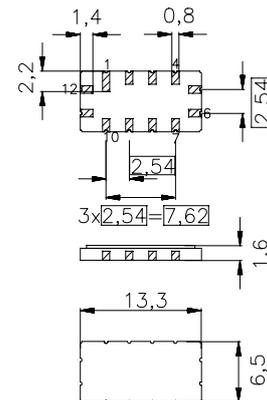
**SAW Components**
**B3605**
**Low-Loss Filter**
**70,00 MHz**
**Data Sheet**

 Ceramic package **QCC12**
**Features**

- High performance IF bandpass filter
- Constant group delay
- Hermetically sealed ceramic package
- Filter surface passivated

**Terminals**

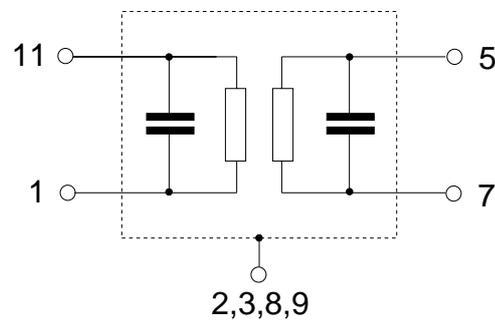
- Gold plated



Dimensions in mm, approx. weight 0,4 g

**Pin configuration**

11	Input
1	Input - ground
5	Output
7	Output - ground
2, 3, 8, 9	Case - ground
4, 6, 10, 12	Ground



Type	Ordering code	Marking and Package according to	Packing according to
B3605	B39700-B3605-Z510	C61157-A7-A55	F61074-V8163-Z000

**Electrostatic Sensitive Device (ESD)**
**Maximum ratings**

Operable temperature range	$T$	- 40/+ 85	°C	source impedance 50 $\Omega$
Storage temperature range	$T_{stg}$	- 40/+ 85	°C	
DC voltage	$V_{DC}$	0	V	
Source power	$P_s$	10	dBm	

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**Characteristics**

Operating temperature:	$T = -40\text{ }^{\circ}\text{C} \dots 85\text{ }^{\circ}\text{C}$
Terminating source impedance:	$Z_S = 50\ \Omega$ and matching circuit(Unbalanced)
Terminating load impedance:	$Z_L = 50\ \Omega$ and matching circuit(Unbalanced)
Group delay aperture	80 kHz

		<b>min.</b>	<b>typ.</b>	<b>max.</b>	
<b>Center frequency</b> (Center between 6dB points)	$f_C$	69,50	70,00	70,50	MHz
<b>Insertion attenuation at <math>f_C</math></b>	$\alpha_C$	—	9,6	10,8	dB
<b>Amplitude ripple (p-p)</b> 67,00 ... 73,00 MHz	$\Delta\alpha$	—	0,6	1,0	dB
<b>Phase ripple (p-p)</b> 65,50 ... 74,50 MHz	$\Delta\phi$	—	15,0	18,0	$^{\circ}$
<b>Pass bandwidth</b>					
$\alpha_{rel} \leq 1\text{ dB}$	$B_{1dB}$	8,1	8,3	—	MHz
$\alpha_{rel} \leq 3\text{ dB}$	$B_{3dB}$	9,1	9,3	—	MHz
$\alpha_{rel} \leq 30\text{ dB}$	$B_{30dB}$	—	12,8	13,2	MHz
<b>Relative attenuation (relative to <math>\alpha_C</math>)</b>	$\alpha_{rel}$				
50,00 ... 62,50 MHz		43	47	—	dB
62,50 ... 63,00 MHz		34	38	—	dB
77,00 ... 77,50 MHz		28	36	—	dB
77,50 ... 90,00 MHz		35	41	—	dB
<b>Group delay at <math>f_C</math></b>	$\tau_C$	—	1,1	—	$\mu\text{s}$
<b>Group delay ripple (p-p)</b> 65,50 ... 74,50 MHz	$\Delta\tau$	—	80	200	ns
<b>Temperature coefficient of frequency</b>	$TC_f$	—	-87	—	ppm/K

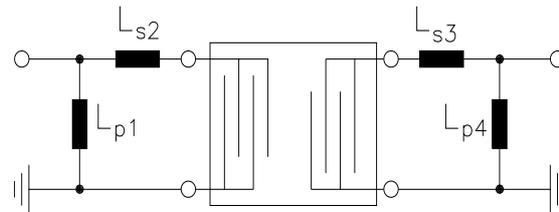
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<b>Insertion attenuation at <math>f_C</math></b>	$\alpha_C$	—	9,8	10,8	dB
<b>Amplitude ripple (p-p)</b> 67,00 ... 73,00 MHz	$\Delta\alpha$	—	0,6	1,0	dB
<b>Phase ripple (p-p)</b> 65,50 ... 74,50 MHz	$\Delta\varphi$	—	17,0	20,0	$^{\circ}$
<b>Pass bandwidth</b>					
$\alpha_{rel} \leq 1\text{ dB}$	$B_{1dB}$	8,1	8,3	—	MHz
$\alpha_{rel} \leq 3\text{ dB}$	$B_{3dB}$	9,1	9,3	—	MHz
$\alpha_{rel} \leq 30\text{ dB}$	$B_{30dB}$	—	12,8	13,2	MHz
<b>Relative attenuation (relative to <math>\alpha_C</math>)</b>	$\alpha_{rel}$				
50,00 ... 62,50 MHz		43	45	—	dB
62,50 ... 63,00 MHz		34	38	—	dB
77,00 ... 77,50 MHz		26	35	—	dB
77,50 ... 90,00 MHz		35	38	—	dB
<b>Group delay at <math>f_C</math></b>	$\tau_C$	—	1,1	—	$\mu\text{s}$
<b>Group delay ripple (p-p)</b> 65,50 ... 74,50 MHz	$\Delta\tau$	—	80	200	ns
<b>Temperature coefficient of frequency</b>	$TC_f$	—	- 87	—	ppm/K

Data Sheet

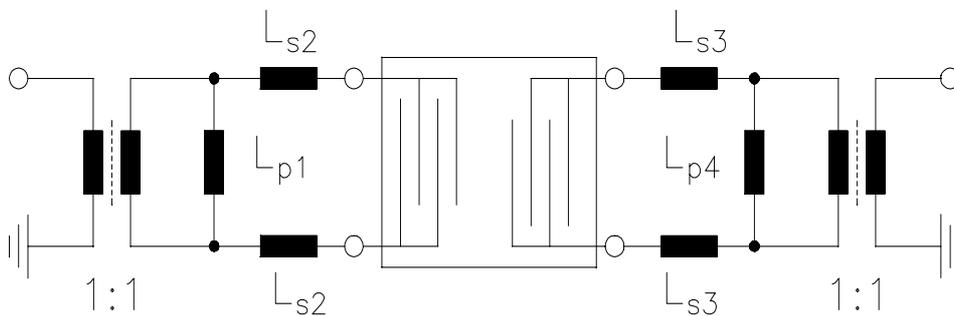
Matching circuit: unbalanced - unbalanced



$L_{s1}=180\text{nH}$   
 $L_{s2}=100\text{nH}$

$L_{s3}=18\text{nH}$   
 $L_{s4}=270\text{nH}$

Matching circuit: balanced - balanced



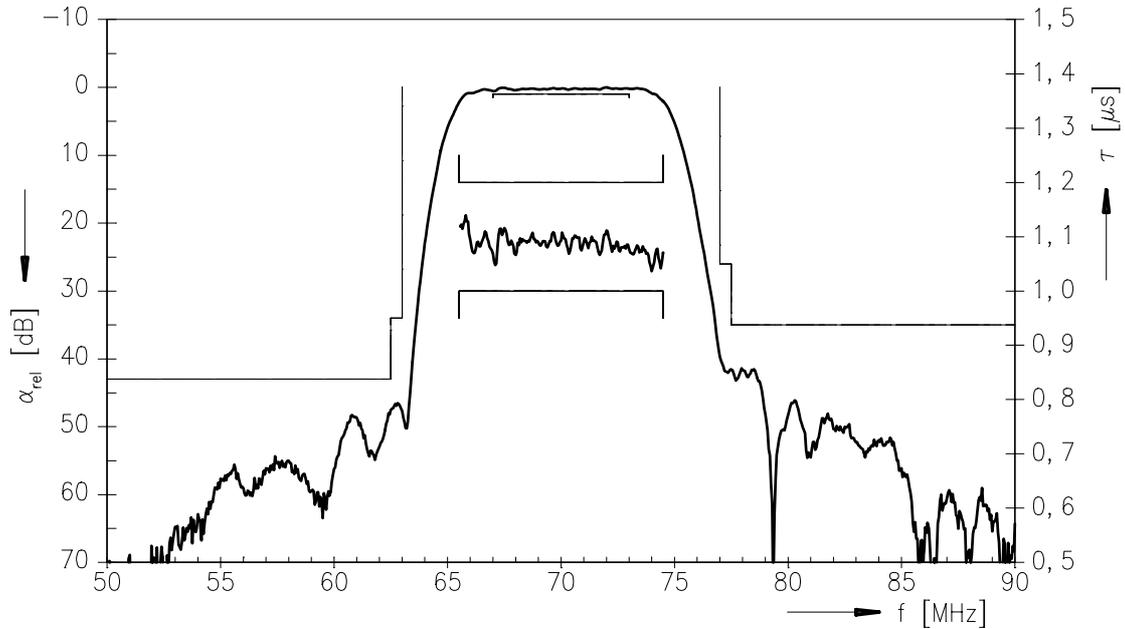
$L_{s1}=180\text{nH}$   
 $L_{s2}=56\text{nH}$

$L_{s3}=10\text{nH}$   
 $L_{s4}=270\text{nH}$

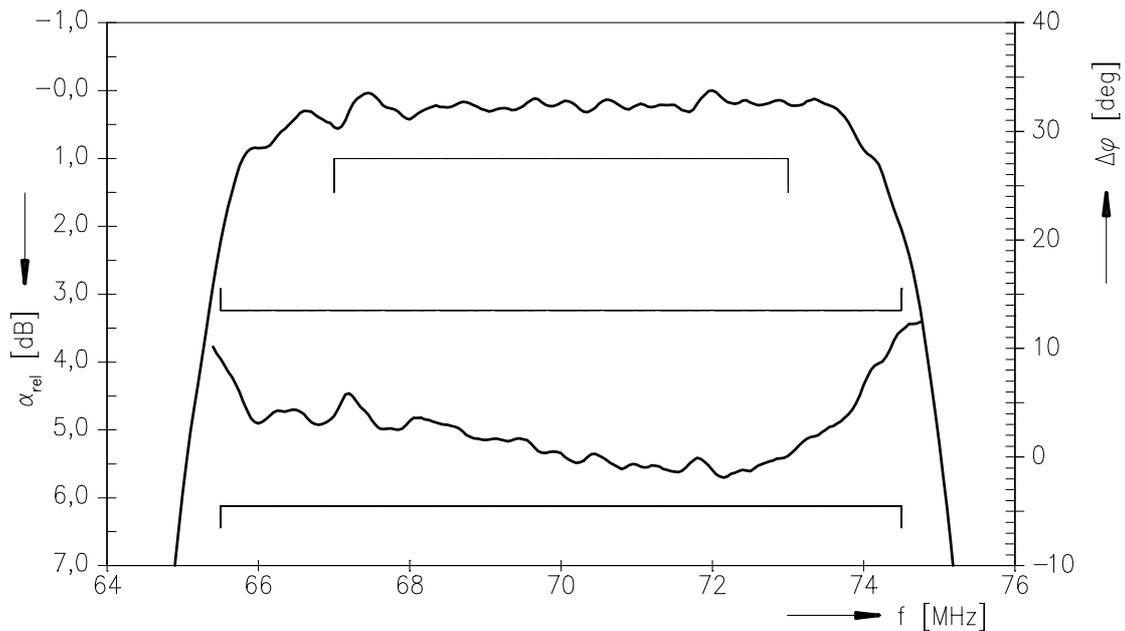
Note: Component values depend on PCB layout.

Data Sheet

Normalized frequency response(unbalanced-unbalanced)

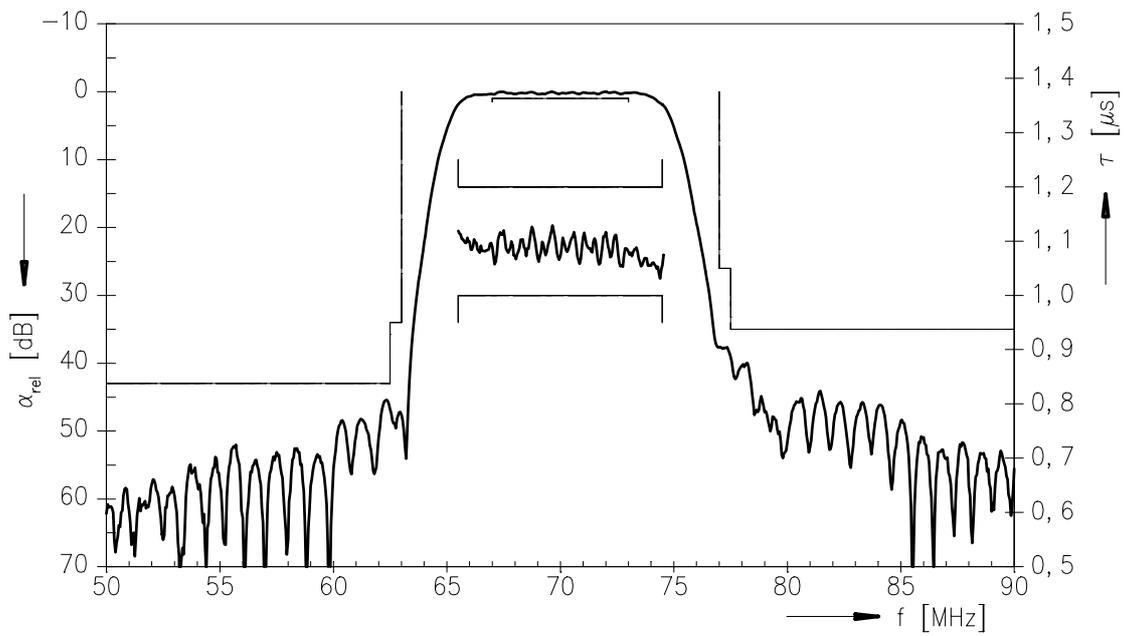


Normalized frequency response

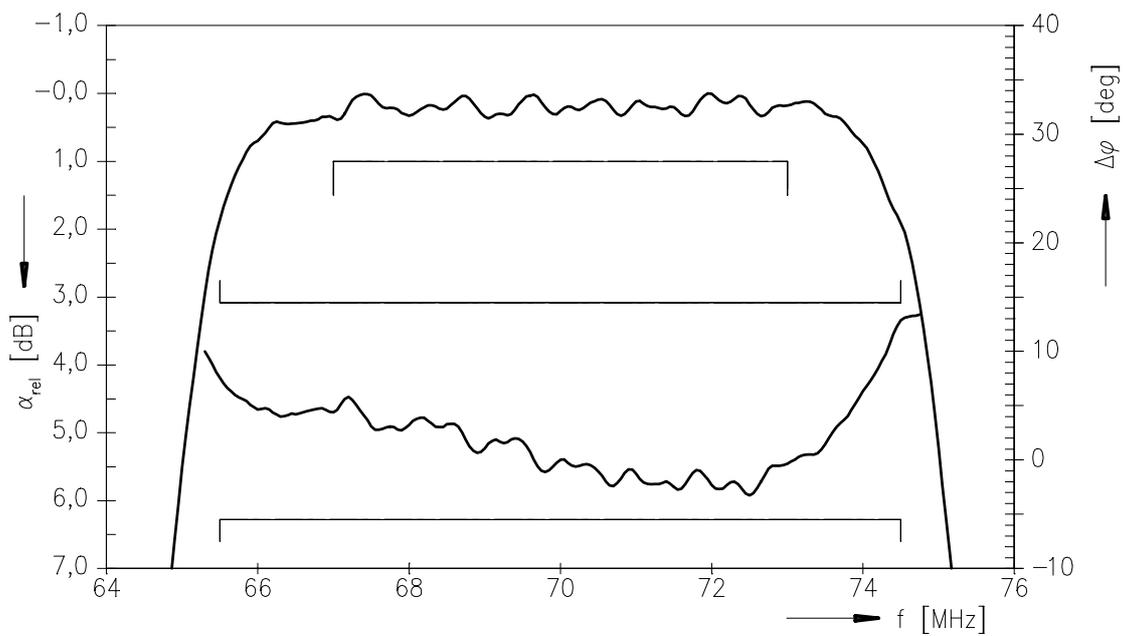


Data Sheet

Normalized frequency response(balanced-balanced)



Normalized frequency response



**Data Sheet****Attachment**

- 1) For a duration < 50 ms source power may be raised to 20 dBm.
- 2) Pyroelectric pulse amplitude < 50 mV.
- 3) If external impedances are the same, input port and output port may be reversed without any changes of the performance.

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