



SAW Components

Data Sheet B3605





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B3605

Low-Loss Filter

70,00 MHz

Data Sheet

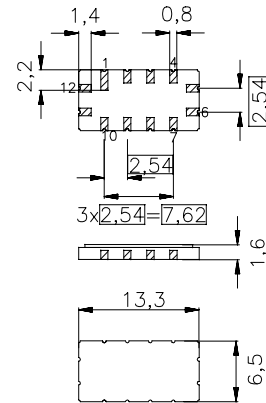
Ceramic package QCC12

Features

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

Terminals

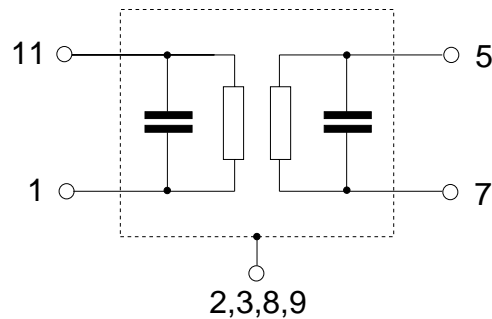
- Gold plated



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


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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

		min.	typ.	max.	
Center frequency (Center between 6dB points)	f_C	69,50	70,00	70,50	MHz
Insertion attenuation at f_C	α_C	—	9,6	10,8	dB
Amplitude ripple (p-p) 67,00 ... 73,00 MHz	$\Delta\alpha$	—	0,6	1,0	dB
Phase ripple (p-p) 65,50 ... 74,50 MHz	$\Delta\varphi$	—	15,0	18,0	$^{\circ}$
Pass bandwidth					
$\alpha_{rel} \leq 1\text{ dB}$	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
Relative attenuation (relative to α_C)	α_{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
Group delay at f_C	τ_C	—	1,1	—	μs
Group delay ripple (p-p) 65,50 ... 74,50 MHz	$\Delta\tau$	—	80	200	ns
Temperature coefficient of frequency	TC_f	—	-87	—	ppm/K



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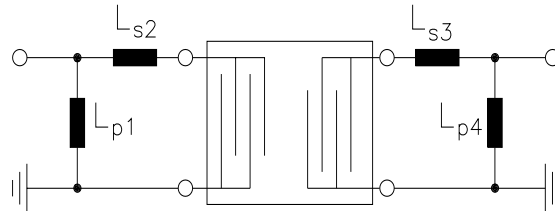
Operating temperature: $T = -40\text{ }^{\circ}\text{C} \dots 85\text{ }^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\ \Omega$ and matching circuit(Balanced)
 Terminating load impedance: $Z_L = 50\ \Omega$ and matching circuit(Balanced)
 Group delay aperture: 80 kHz

		min.	typ.	max.	
Center frequency (Center between 6dB points)	f_C	69,50	70,00	70,50	MHz
Insertion attenuation at f_C	α_C	—	9,8	10,8	dB
Amplitude ripple (p-p) 67,00 ... 73,00 MHz	$\Delta\alpha$	—	0,6	1,0	dB
Phase ripple (p-p) 65,50 ... 74,50 MHz	$\Delta\varphi$	—	17,0	20,0	$^{\circ}$
Pass bandwidth					
$\alpha_{rel} \leq 1\text{ dB}$	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
Relative attenuation (relative to α_C)	α_{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
Group delay at f_C	τ_C	—	1,1	—	μs
Group delay ripple (p-p) 65,50 ... 74,50 MHz	$\Delta\tau$	—	80	200	ns
Temperature coefficient of frequency	TC_f	—	- 87	—	ppm/K



Data Sheet

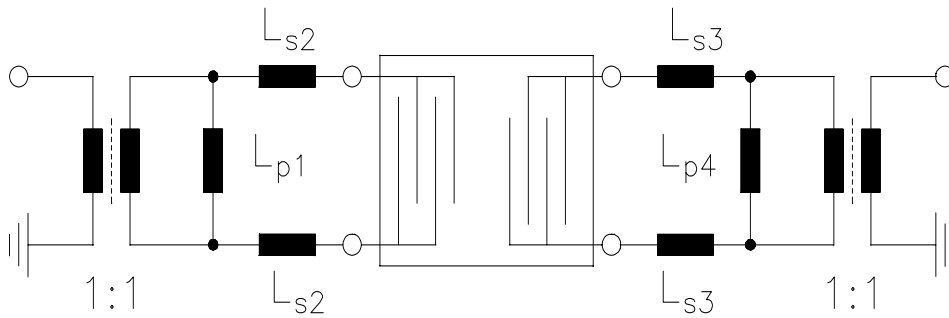
Matching circuit: unbalanced - unbalanced



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

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

Matching circuit: balanced - balanced



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

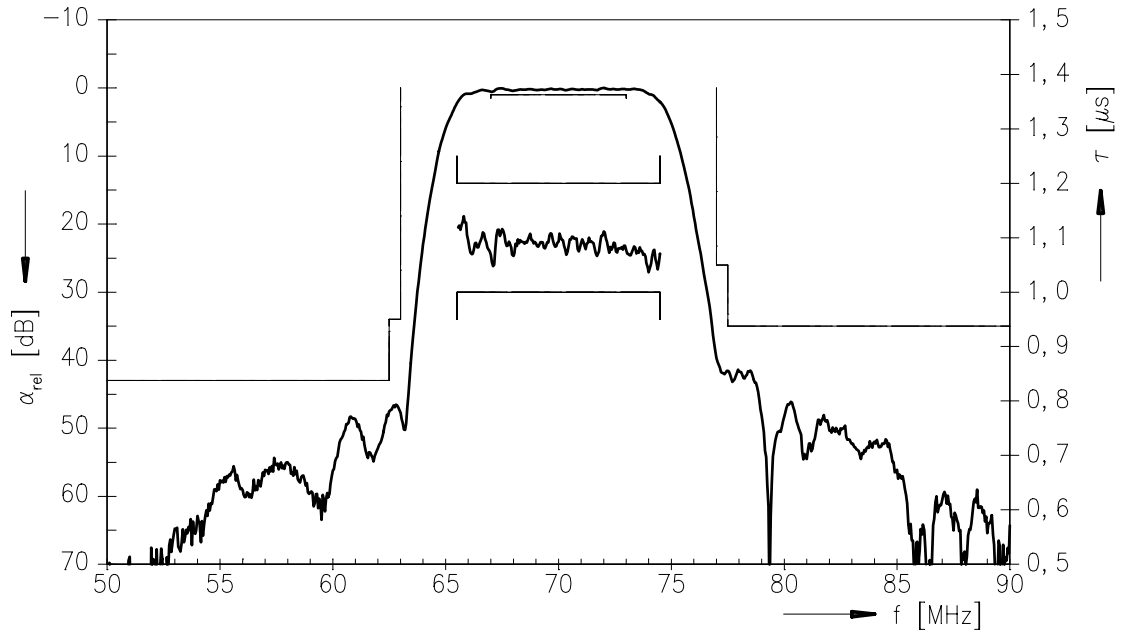
$L_{s3}=10\text{nH}$
 $L_{s4}=270\text{nH}$

Note: Component values depend on PCB layout.

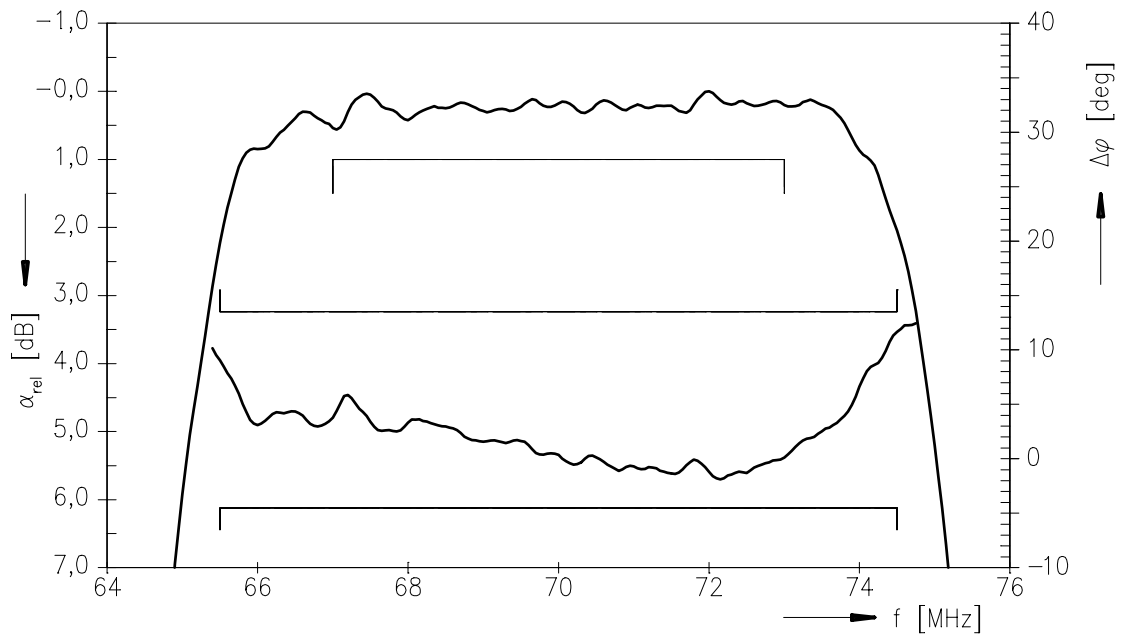


Data Sheet

Normalized frequency response(unbalanced-unbalanced)



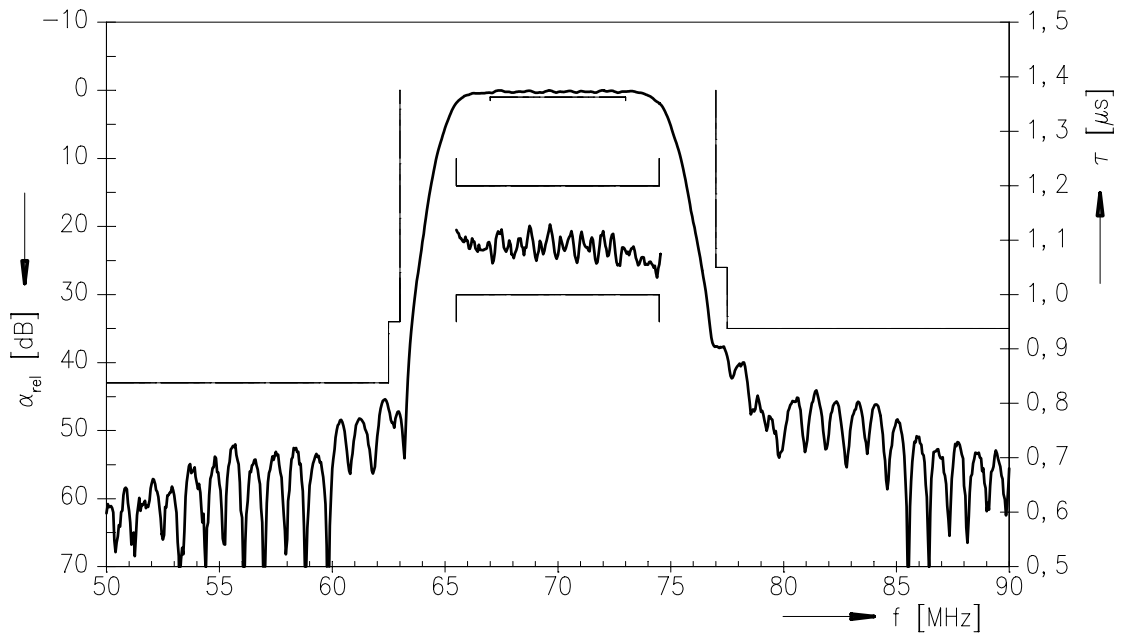
Normalized frequency response



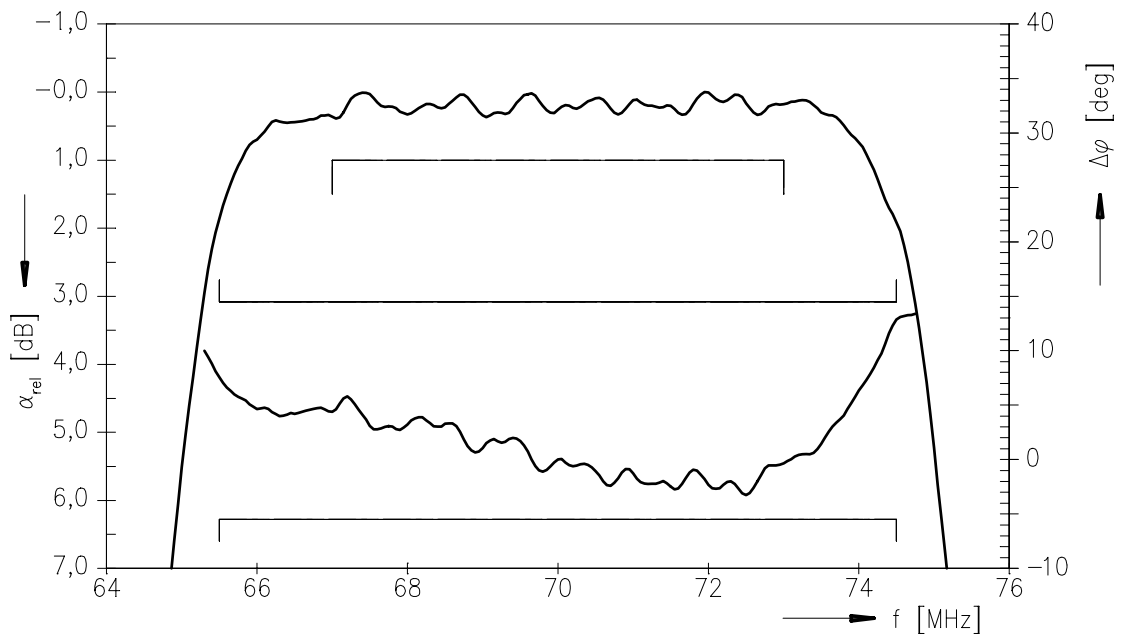


Data Sheet

Normalized frequency response(balanced-balanced)



Normalized frequency response





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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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