



# SAW Components

Data Sheet B4069





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B4069

Low-Loss Filter

770,0 MHz

Data Sheet

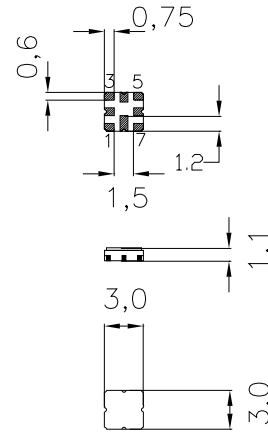
SMD ceramic package QCC8D

Features

- Low loss IF filter for HiperLAN
- Balanced to balanced operation
- Package for Surface Mounted Technology (SMT)

Terminals

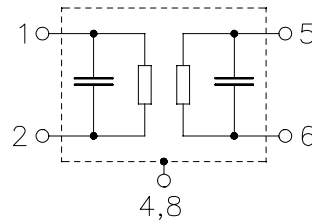
- Ni, gold-plated



Dimensions in mm, approx. weight 0,037 g

Pin configuration

- 1 Input
- 2 Input or grounded input
- 5 Output
- 6 Output or grounded output
- 3, 7 To be grounded
- 4, 8 Case - ground



Type	Ordering code	Marking and Package according to	Packing according to
B4069	B39771-B4069-U810	C61157-A7-A72	F61074-V8101-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	$T$	-20 /+ 80	°C	
Storage temperature range	$T_{stg}$	- 40/+ 85	°C	
DC voltage	$V_{DC}$	0	V	
Source power	$P_s$	0	dBm	source impedance 250 $\Omega$



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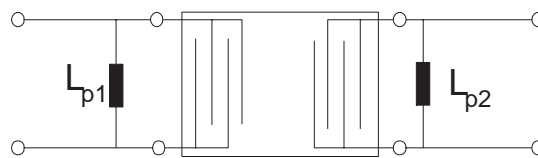
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**Characteristics**

Operating temperature range:  $T_A = -20 \dots +80 \text{ }^\circ\text{C}$   
 Terminating source impedance:  $Z_S = 250 \text{ } \Omega \parallel 125\text{nH}$   
 Terminating load impedance:  $Z_L = 250 \text{ } \Omega \parallel 125\text{nH}$

		min.	typ.	max.	
<b>Nominal frequency</b>	$f_N$	—	770,0	—	MHz
<b>Minimum insertion attenuation</b>	$\alpha_{\min}$	—	1,7	3,5	dB
<b>Amplitude ripple in passband (p-p)</b>	$\Delta\alpha$				
	$f_N \pm 7,0 \text{ MHz}$	—	0,8	1,1	dB
	$f_N \pm 8,5 \text{ MHz}$	—	0,9	2,0	dB
<b>Group delay ripple (p-p)</b>	$\Delta\tau$				
	$f_N \pm 8,5 \text{ MHz}$	—	25	50	ns
<b>Relative Attenuation (relative to <math>\alpha_{\min}</math>)</b>	$\alpha_{\text{rel}}$				
	$f_N - 20,0 \text{ MHz}$	20	30	—	dB
	$f_N + 20,0 \text{ MHz}$	15	23	—	dB
	$f_N - 30,0 \text{ MHz}$	35	40	—	dB
	$f_N + 30,0 \text{ MHz}$	25	32	—	dB
	$f_N \pm 40,0 \text{ MHz}$	40	60	—	dB
	$f_N \pm 60,0 \text{ MHz}$	45	63	—	dB
	$f_N \pm 80,0 \text{ MHz}$	45	68	—	dB
	$f_N \pm 100,0 \text{ MHz}$	45	73	—	dB
	$f_N \pm 120,0 \text{ MHz}$	50	70	—	dB

**Matching network (Simulated)**



$L_{p1} = 125\text{nH}$

$L_{p2} = 125\text{nH}$



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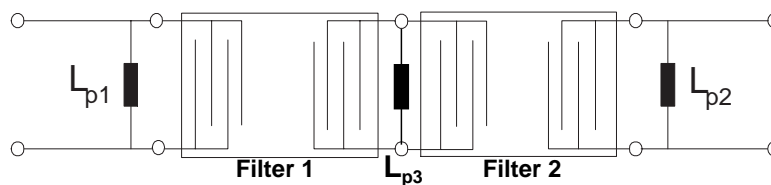
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**Characteristics (2 Cascaded filters with || 125nH between filters)**

Operating temperature range:  $T_A = -20 \dots +80 \text{ }^\circ\text{C}$   
 Terminating source impedance:  $Z_S = 250 \text{ } \Omega \parallel 125\text{nH}$   
 Terminating load impedance:  $Z_L = 250 \text{ } \Omega \parallel 125\text{nH}$

		min.	typ.	max.	
<b>Nominal frequency</b>	$f_N$	—	770,0	—	MHz
<b>Minimum insertion attenuation</b>	$\alpha_{\min}$	—	3,5	7,0	dB
<b>Amplitude ripple in passband (p-p)</b>	$\Delta\alpha$				
	$f_N \pm 7,0 \text{ MHz}$	—	1,5	2,2	dB
	$f_N \pm 8,5 \text{ MHz}$	—	1,8	4,0	dB
<b>Group delay ripple (p-p)</b>	$\Delta\tau$				
	$f_N \pm 8,5 \text{ MHz}$	—	50	100	ns
<b>Relative Attenuation (relative to <math>\alpha_{\max}</math>)</b>	$\alpha_{\text{rel}}$				
	$f_N - 20,0 \text{ MHz}$	45	54	—	dB
	$f_N + 20,0 \text{ MHz}$	30	48	—	dB
	$f_N - 30,0 \text{ MHz}$	70	78	—	dB
	$f_N + 30,0 \text{ MHz}$	50	66	—	dB
	$f_N \pm 40,0 \text{ MHz}$	80	116	—	dB
	$f_N \pm 60,0 \text{ MHz}$	90	125	—	dB
	$f_N \pm 80,0 \text{ MHz}$	90	136	—	dB
	$f_N \pm 100,0 \text{ MHz}$	90	140	—	dB
	$f_N \pm 120,0 \text{ MHz}$	100	135	—	dB

**Matching network (Simulated)**



$L_{p1} = 125\text{nH}$

$L_{p2} = 125\text{nH}$

$L_{p3} = 125\text{nH}$



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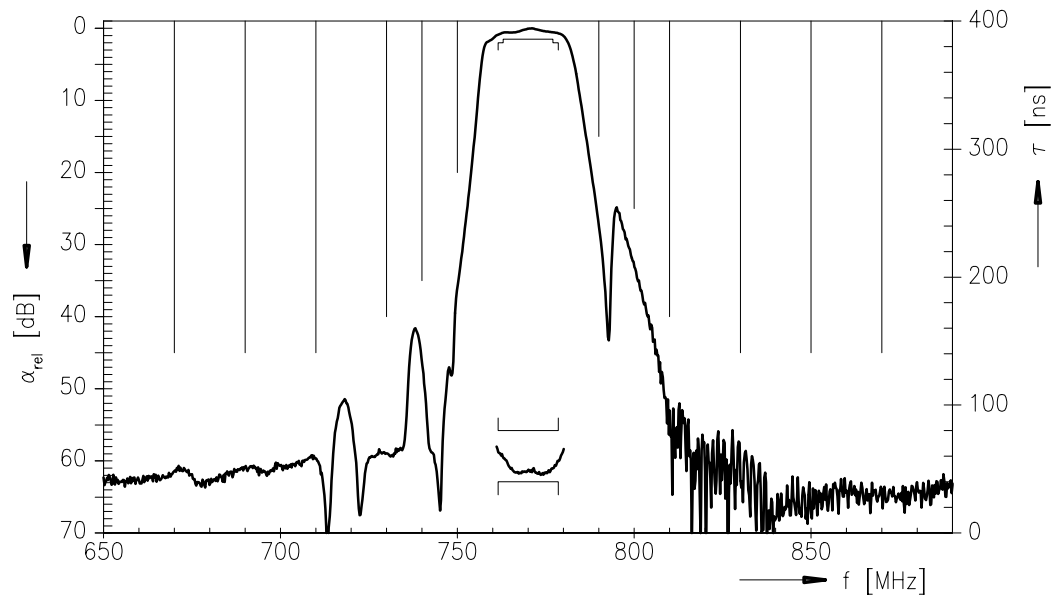
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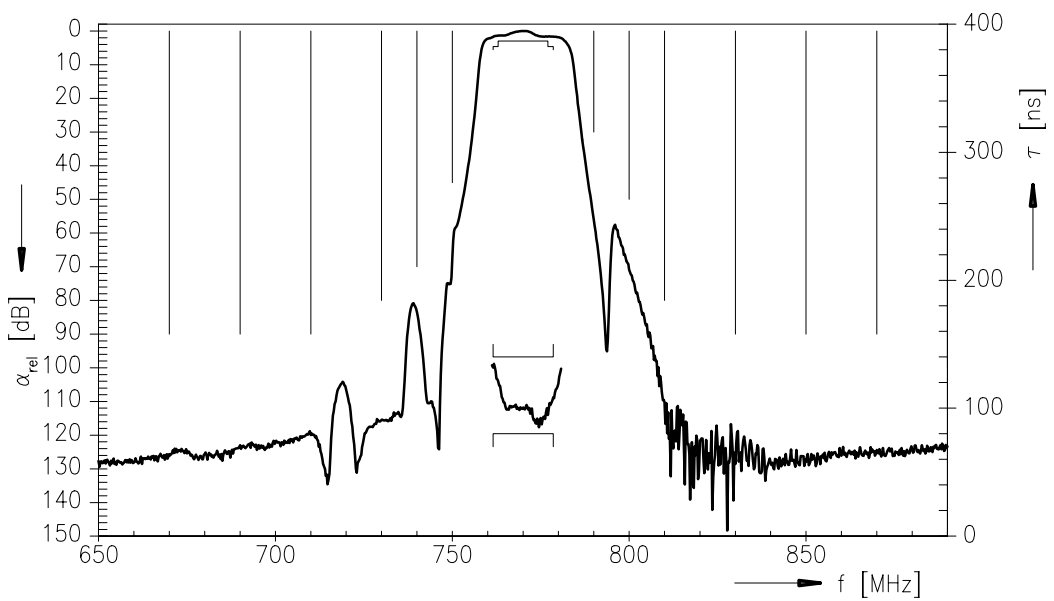
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Normalised Transfer Function (Single filter)



Normalised Transfer Function (2 Cascaded filters)

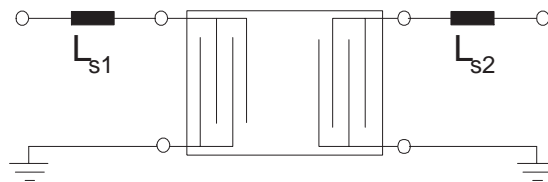




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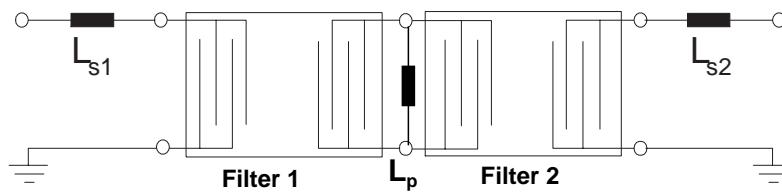
Matching network (element values may depend on pcb layout)

50 Ω unbalanced for single filter (test circuit for unbalanced input / output environment):



$$L_{s1} = 22\text{nH}$$
$$L_{s2} = 18\text{nH}$$

50 Ω unbalanced for cascaded filters (test circuit for unbalance input/ output environment):



$$L_{s1} = 22\text{nH}$$
$$L_{s2} = 18\text{nH}$$
$$L_p = 22\text{nH}$$



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