



# SAW Components

Data Sheet B3688





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B3688

Low-Loss Filter

499,25 MHz

Data Sheet

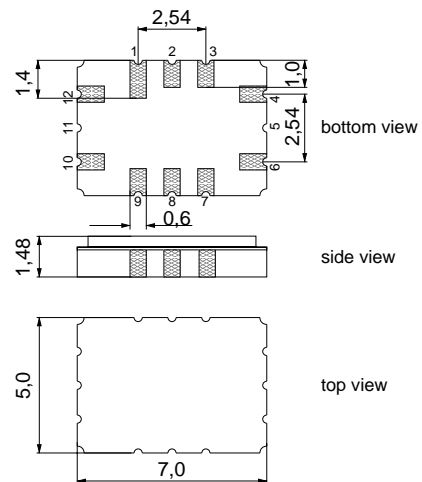
Ceramic package QCC12C

Features

- Low-loss filter
- Temperature stable
- Package for Surface Mounted Technology (SMT)
- Hermetically sealed ceramic package

Terminals

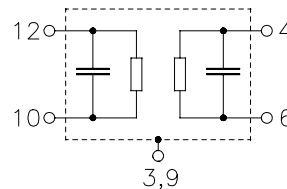
- Gold-plated



Dimensions in mm, approx. weight 0,2 g

Pin configuration

- |            |                              |
|------------|------------------------------|
| 10         | Input                        |
| 12         | Input ground or bal. input   |
| 4          | Output                       |
| 6          | Output ground or bal. output |
| 3, 9       | Case - ground                |
| 1, 2, 7, 8 | To be grounded               |



Type	Ordering code	Marking and Package according to	Packing according to
B3688	B39501-B3688-H310	C61157-A7-A95	F61074-V8170-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	$T$	- 45/+ 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 $\Omega$



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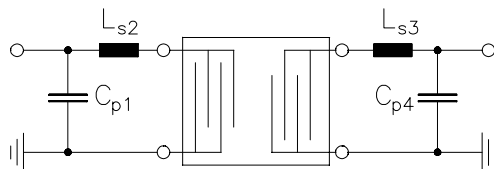
**Data Sheet**

**Characteristics**

Operating temperature:  $T = -25 \dots +75 \text{ }^\circ\text{C}$   
 Terminating source impedance:  $Z_S = 50 \text{ } \Omega$  and matching network  
 Terminating load impedance:  $Z_L = 50 \text{ } \Omega$  and matching network

		min.	typ.	max.	
<b>Nominal frequency</b>	$f_N$	—	499,25	—	MHz
<b>Insertion attenuation at <math>f_N</math> (<math>T=25 \text{ }^\circ\text{C}</math>)</b>	$\alpha_N$	6,0	8,0	9,0	dB
<b>Variation of insertion att. (rel. to <math>\alpha_N</math>)</b>	$\alpha_{rel}$	—	—	$\pm 0,9$	dB
<b>Frequency response</b>					
3 dB Lower frequency	$f_{L \text{ 3dB}}$	—	498,27	498,75	MHz
3 dB Upper frequency	$f_{U \text{ 3dB}}$	499,75	500,23	—	MHz
35 dB Lower frequency	$f_{L \text{ 35dB}}$	496,25	496,75	—	MHz
35 dB Upper frequency	$f_{U \text{ 35dB}}$	—	501,85	502,25	MHz
<b>Amplitude ripple (peak to adjacent valley)</b>					
$f_N \pm 100 \text{ kHz}$		—	—	0,5	dB
<b>Relative attenuation</b>					
$f_N - 200,0 \text{ MHz} \dots f_N - 10,0 \text{ MHz}$	$\alpha_{rel}$	40	55	—	dB
$f_N - 10,0 \text{ MHz} \dots f_N - 3,0 \text{ MHz}$		35	48	—	dB
$f_N + 3,0 \text{ MHz} \dots f_N + 10,0 \text{ MHz}$		35	43	—	dB
$f_N + 10,0 \text{ MHz} \dots f_N + 200,0 \text{ MHz}$		40	51	—	dB
<b>Temperature coefficient of frequency <sup>1)</sup></b>	$TC_f$	—	- 0,036	—	ppm/K <sup>2</sup>
<b>Turnover temperature</b>	$T_0$	—	25	—	$^\circ\text{C}$

**Matching circuit:**



$C_{p1} = 14\text{pF} \text{ }^2)$   
 $L_{s2} = 21\text{nH} \text{ }^2)$   
 $L_{s3} = 22\text{nH} \text{ }^2)$   
 $C_{p4} = 13\text{pF} \text{ }^2)$

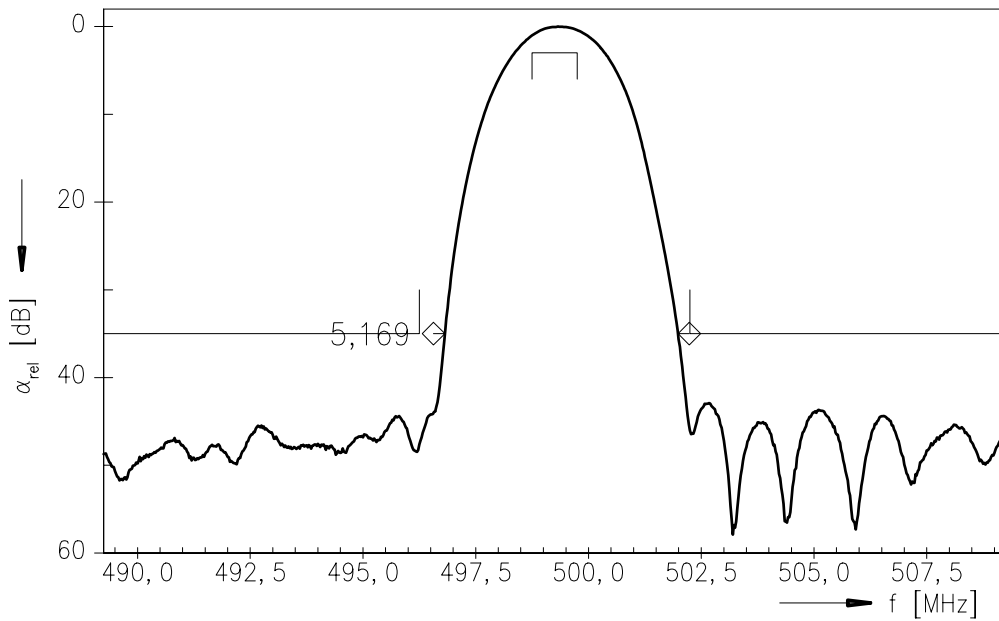
<sup>1)</sup> Temperature dependance of  $f_c$ :  $f_c(T_A) = f_c(T_0)(1 + TC_f(T_A - T_0)^2)$

<sup>2)</sup> Element values depend on PCB layout

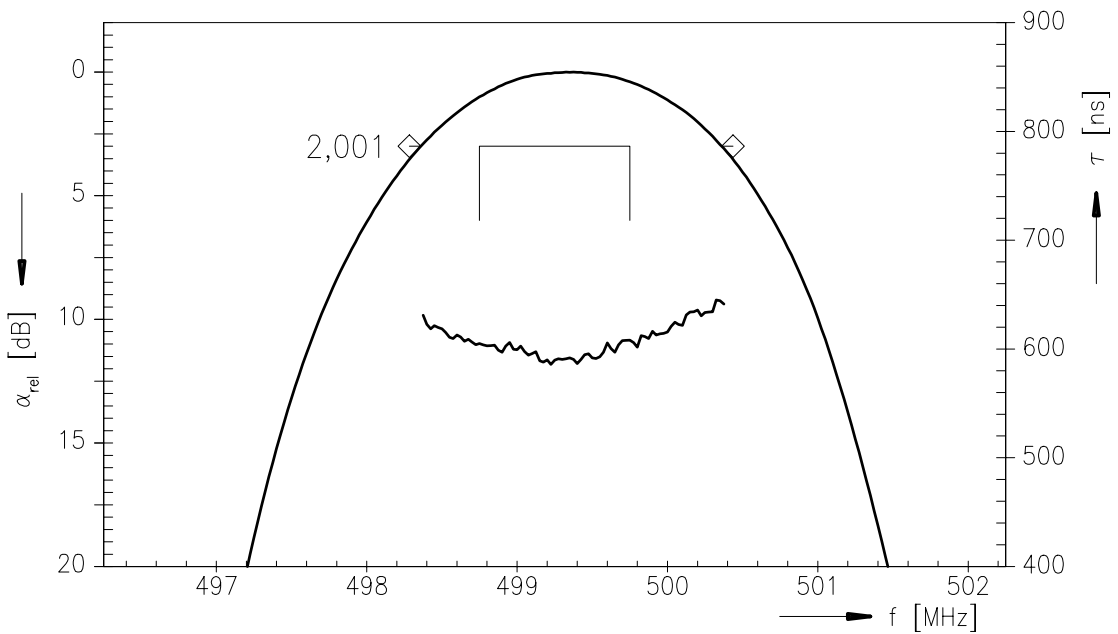


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Normalized frequency response



Normalized frequency response (pass band)





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