



# SAW Components

Data Sheet B3817





**SAW Components**

**B3817**

**Low-Loss Filter**

**208,0 MHz**

**Data Sheet**

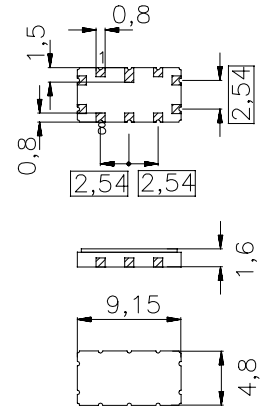
Ceramic package **QCC10B**

**Features**

- IF low-loss filter for W-CDMA base station
- Temperature stable
- Usable bandwidth 3,84 MHz
- Ceramic SMD package

**Terminals**

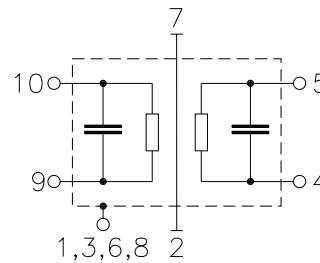
- Gold plated



Dimensions in mm, appr. weight 0,23 g

**Pin configuration**

- |            |                 |
|------------|-----------------|
| 10         | Input           |
| 9          | Input ground    |
| 5, 4       | Balanced output |
| 1, 3, 6, 8 | Case ground     |
| 2, 7       | To be grounded  |



Type	Ordering code	Marking and Package according to	Packing according to
B3817	B39211-B3817-Z710	C61157-A7-A49	F61074-V8172-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	$P_s$	0	dBm	


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Operating temperature range:  $T = 0 \dots 70 \text{ }^\circ\text{C}$   
 Terminating source impedance:  $Z_S = 50 \text{ } \Omega$  and matching network  
 Terminating load impedance:  $Z_L = 200 \text{ } \Omega$  and matching network

		min.	typ.	max.	
<b>Nominal frequency</b>	$f_N$	—	208,0	—	MHz
<b>Minimum insertion attenuation</b> (including matching network)	$\alpha_{\min}$ $f_N \pm 1,92 \text{ MHz}$	—	11,7	13,0	dB
<b>Passband width</b>	$\alpha_{\text{rel}} \leq 1 \text{ dB}$	$B_{1\text{dB}}$	—	4,2	— MHz
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$ $f_N \pm 1,92 \text{ MHz}$	—	0,7	1,0	dB
<b>Phase ripple (p-p)</b>	$\Delta\varphi$ $f_N \pm 1,92 \text{ MHz}$	—	7	10	$^\circ$
<b>Phase ripple (rms)</b>	$\Delta\varphi$ $f_N \pm 1,92 \text{ MHz}$	—	1,1	—	$^\circ$ rms
<b>Absolute group delay</b> mean value within $f_N \pm 1,92 \text{ MHz}$	$\tau_{\text{mean}}$	790	795	800	ns
<b>Relative attenuation (relative to <math>\alpha_{\min}</math>)</b>	$\alpha_{\text{rel}}$				
$f_N \pm 2,53 \text{ MHz} \dots f_N \pm 2,70 \text{ MHz}$		9	10	—	dB
$f_N \pm 2,70 \text{ MHz} \dots f_N \pm 2,75 \text{ MHz}$		15	20	—	dB
$f_N \pm 2,75 \text{ MHz} \dots f_N \pm 2,90 \text{ MHz}$		20	30	—	dB
$f_N \pm 2,90 \text{ MHz} \dots f_N \pm 3,30 \text{ MHz}$		25	30	—	dB
$f_N \pm 3,30 \text{ MHz} \dots f_N \pm 10 \text{ MHz}$		30	35	—	dB
$f_N \pm 10 \text{ MHz} \dots f_N \pm 28 \text{ MHz}$		40	50	—	dB
$f_N \pm 28 \text{ MHz} \dots f_N \pm 60 \text{ MHz}$		55	60	—	dB
<b>Input IP3</b>		40	—	—	dBm
<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	—	$^\circ\text{C}$

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


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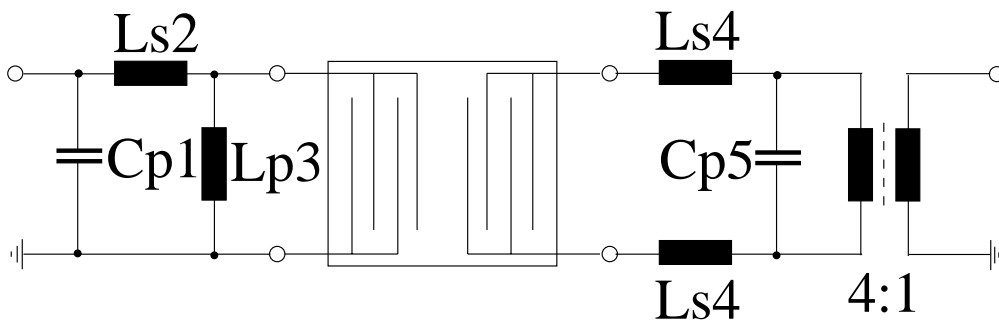
		<b>min.</b>	<b>typ.</b>	<b>max.</b>	
<b>Nominal frequency</b>	$f_N$	—	208,0	—	MHz
<b>Minimum insertion attenuation</b> (including matching network)	$\alpha_{\min}$ $f_N \pm 1,92 \text{ MHz}$	—	11,7	13,5	dB
<b>Passband width</b>	$\alpha_{\text{rel}} \leq 1 \text{ dB}$	$B_{1\text{dB}}$	4,2	—	MHz
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<b>Relative attenuation (relative to <math>\alpha_{\min}</math>)</b>	$\alpha_{\text{rel}}$				
$f_N \pm 2,53 \text{ MHz} \dots f_N \pm 2,70 \text{ MHz}$		8	10	—	dB
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1) Temperature dependance of  $f_c$ :  $f_c(T_A) = f_c(T_0)(1 + TC_f(T_A - T_0)^2)$



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Matching network (element values depend on PCB layout):



$$C_{p1} = 39 \text{ pF}$$
$$L_{s2} = 68 \text{ nH}$$

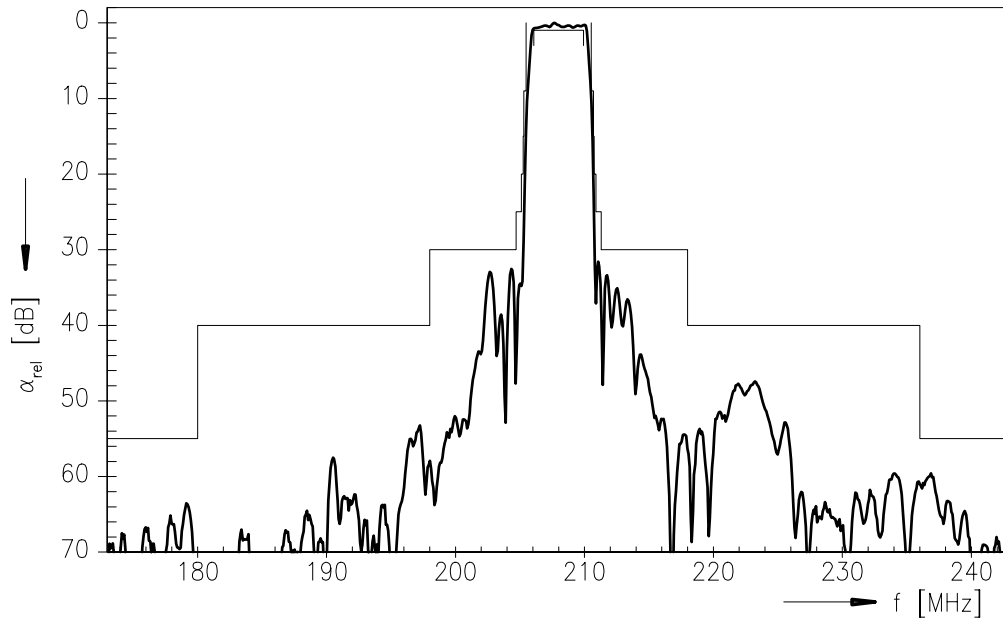
$$L_{p3} = 390 \text{ nH}$$
$$L_{s4} = 47 \text{ nH}$$

$$C_{p5} = 22 \text{ pF}$$

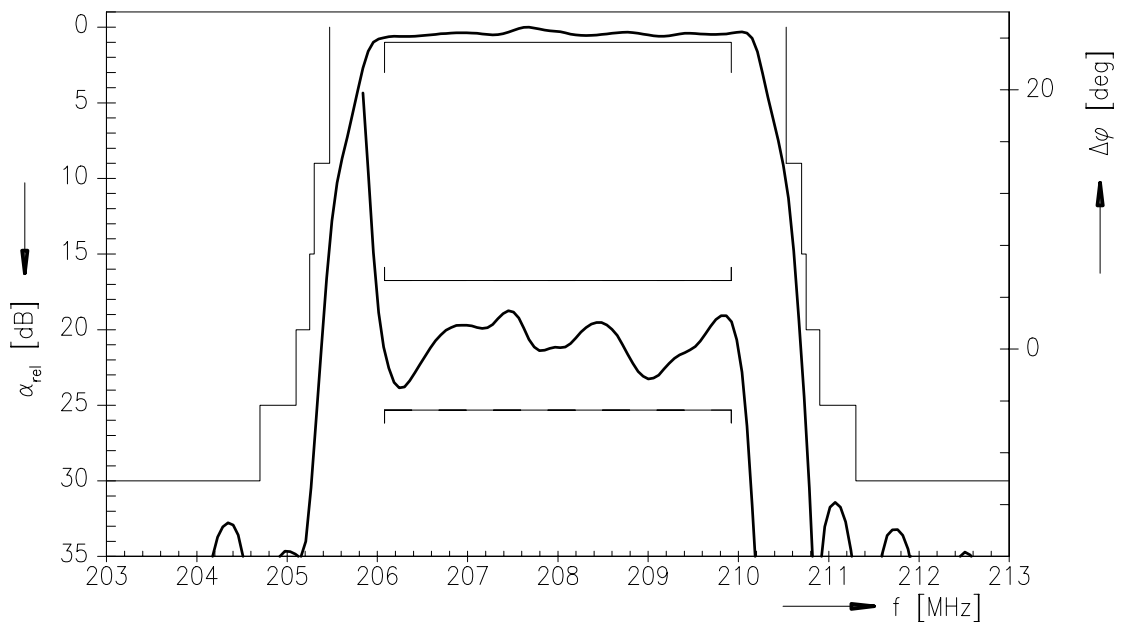


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Transfer function



Transfer function (pass band)





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