



# SAW Components

Data Sheet B4939

Data Sheet

An abstract, grayscale background graphic featuring a globe with a grid pattern. Overlaid on the globe is a large, stylized, 3D-effect word "EPCOS" in a light gray color, tilted diagonally across the lower half of the page.

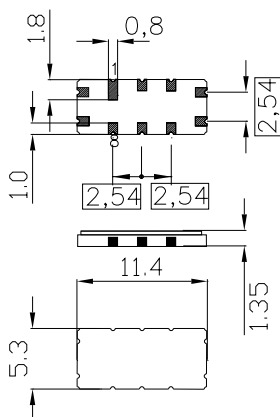
EPCOS

**Ceramic package QCC10C**
**Features**

- Low-loss IF filter for mobile telephone
- Channel selection in CDMA systems
- Very small size
- Low insertion attenuation
- Balanced and unbalanced operation possible
- Filter surface passivated
- Ceramic SMD package

**Terminals**

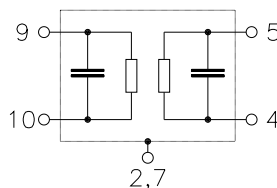
- Gold-plated Ni



Dimensions in mm, approx. weight 0,24 g

**Pin configuration**

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



Type	Ordering code	Marking and Package according to	Packing according to
B4939	B39111-B4939-U910	C61157-A7-A73	D6104-V8104-Z000

Electrostatic Sensitive Device (ESD)

**Maximum ratings**

Operating temperature range	$T$	- 20/+ 75	°C	
Storage temperature range	$T_{\text{stg}}$	- 40/+ 85	°C	
DC voltage	$V_{\text{DC}}$	0	V	
Source power	$P_{\text{s}}$	10	dBm	

**Preliminary Data Sheet**

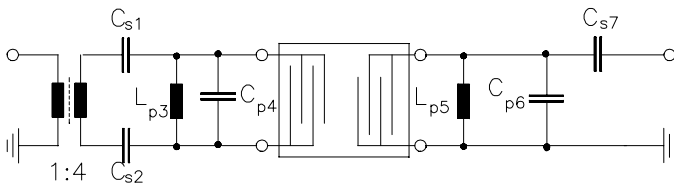


**Characteristics**

Operating temperature range:  $T = -20 \dots +75 \text{ }^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 1070\Omega \parallel 130 \text{ nH}$   
 Terminating load impedance:  $Z_L = 1050\Omega \parallel 110 \text{ nH}$

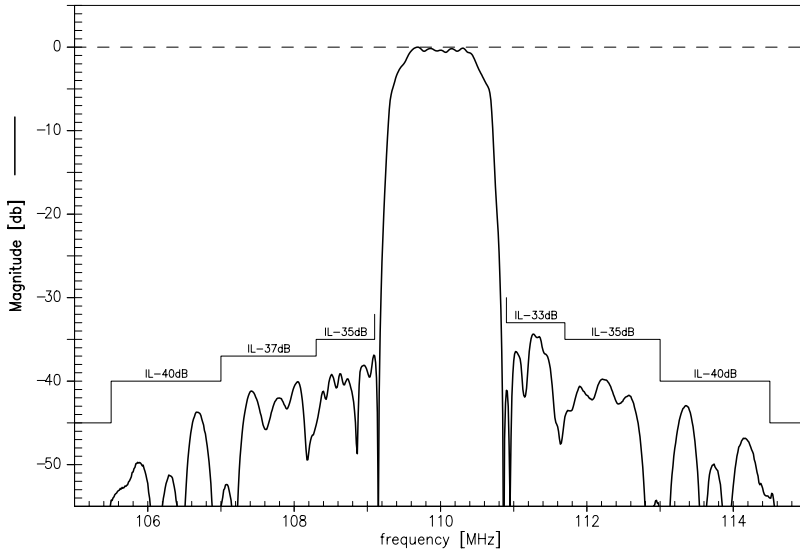
		min.	typ.	max.	
<b>Nominal frequency</b>	$f_N$	—	110,0	—	MHz
<b>Minimum insertion attenuation</b> (including losses in matching circuit)	$\alpha_{\min}$	—	8,6	10,0	dB
<b>Amplitude ripple (p-p)</b> $f_N - 0,3 \text{ MHz} \dots f_N + 0,3 \text{ MHz}$	$\Delta\alpha$	—	0,4	0,7	dB
<b>Phase Linearity (rms)</b> $f_N - 0,614 \text{ MHz} \dots f_N + 0,614 \text{ MHz}$	$\Delta\tau$	—	1,5	3,0	$^{\circ}$
<b>Relative attenuation (relative to <math>\alpha_{\min}</math>)</b> $f_N - 0,614 \text{ MHz} \dots f_N + 0,614 \text{ MHz}$	$\alpha_{\text{rel}}$	—	4,0	5,0	dB
$f_N - 30 \text{ MHz} \dots f_N - 4,5 \text{ MHz}$		45	55	—	dB
$f_N - 4,5 \text{ MHz} \dots f_N - 3,0 \text{ MHz}$		40	45	—	dB
$f_N - 3,0 \text{ MHz} \dots f_N - 1,7 \text{ MHz}$		37	40	—	dB
$f_N - 1,7 \text{ MHz}$		40	43	—	dB
$f_N - 1,7 \text{ MHz} \dots f_N - 0,9 \text{ MHz}$		35	37	—	dB
$f_N - 0,9 \text{ MHz}$		35	37	—	dB
$f_N + 0,9 \text{ MHz}$		35	37	—	dB
$f_N + 0,9 \text{ MHz} \dots f_N + 1,7 \text{ MHz}$		33	35	—	dB
$f_N + 1,7 \text{ MHz}$		40	43	—	dB
$f_N + 1,7 \text{ MHz} \dots f_N + 3,0 \text{ MHz}$		35	39	—	dB
$f_N + 3,0 \text{ MHz} \dots f_N + 4,5 \text{ MHz}$		40	43	—	dB
$f_N + 4,5 \text{ MHz} \dots f_N + 30 \text{ MHz}$		45	50	—	dB

**Test Matching Network to bal. 200 $\Omega$  / unbal. 50 $\Omega$**  (element values depend on PCB layout)

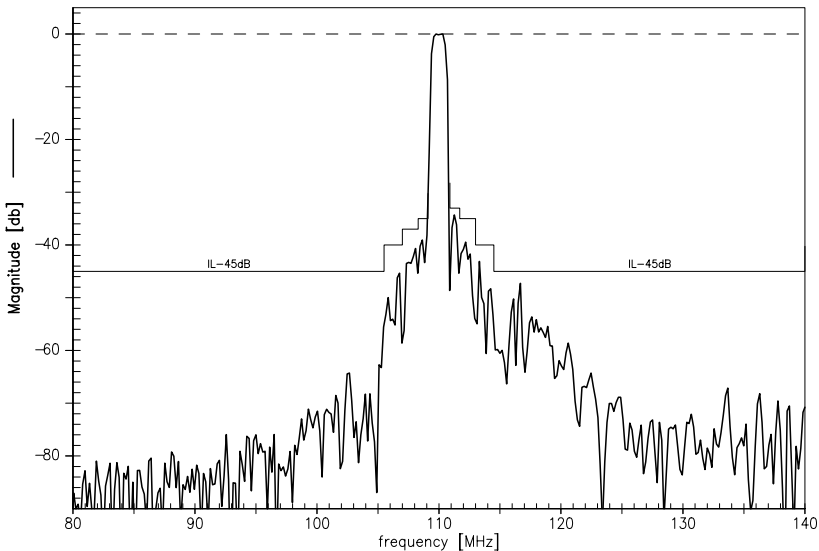




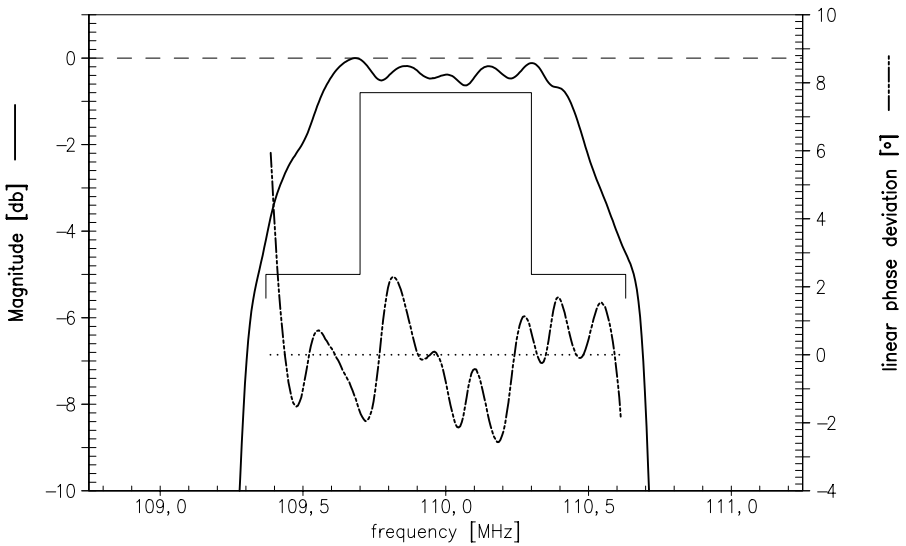
Transfer function (balanced - unbalanced):



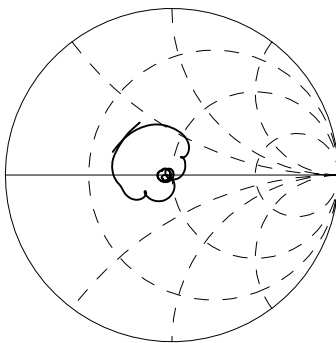
Transfer function (wideband):



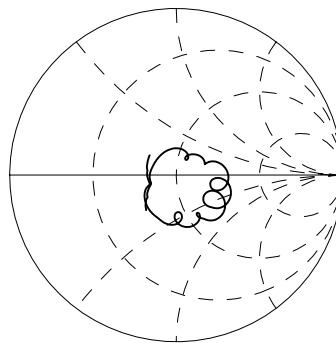
Transfer function (passband)



input reflection



output reflection



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