



SAW Components

Data Sheet B3817

Data Sheet

A large, stylized, and somewhat abstract graphic of the EPCOS logo. The letters "EPCOS" are rendered in a bold, sans-serif font, appearing to be part of a larger, curved structure that resembles a globe or a stylized wave. The graphic is in grayscale and has a high-contrast, almost glowing appearance.



SAW Components

B3817

Low-Loss Filter

208,0 MHz

Data Sheet

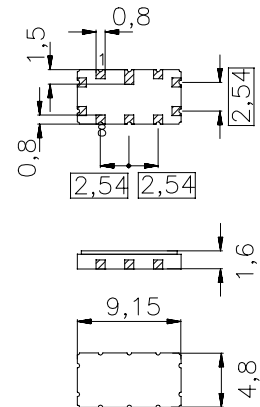
Ceramic package **QCC10B**

Features

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

Terminals

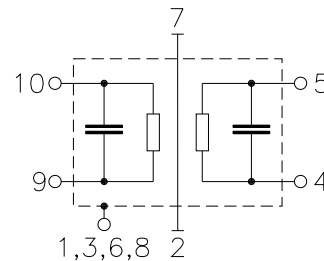
- Gold plated



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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Characteristics

| | |
|-------------------------------|--------------------------------------------------|
| 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. | |
|-----------------------------------------------------------------------------|-------------------------------------------------------------|------|--------|------|--------------------|
| Nominal frequency | f_N | — | 208,0 | — | MHz |
| Minimum insertion attenuation (including matching network) | α_{\min} $f_N \pm 1,92 \text{ MHz}$ | — | 11,7 | 13,0 | dB |
| Passband width | $\alpha_{\text{rel}} \leq 1 \text{ dB}$ $B_{1\text{dB}}$ | — | 4,2 | — | MHz |
| Amplitude ripple (p-p) | $\Delta\alpha$ $f_N \pm 1,92 \text{ MHz}$ | — | 0,7 | 1,0 | dB |
| Phase ripple (p-p) | $\Delta\phi$ $f_N \pm 1,92 \text{ MHz}$ | — | 7 | 10 | $^{\circ}$ |
| Phase ripple (rms) | $\Delta\phi$ $f_N \pm 1,92 \text{ MHz}$ | — | 1,1 | — | $^{\circ}$ rms |
| Absolute group delay mean value within $f_N \pm 1,92 \text{ MHz}$ | τ_{mean} | 790 | 795 | 800 | ns |
| Relative attenuation (relative to α_{\min}) | α_{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 |
| Input IP3 | | 40 | — | — | dBm |
| Temperature coefficient of frequency¹⁾ | TC_f | — | -0,036 | — | ppm/K ² |
| Turnover temperature | T_0 | — | 25 | — | $^{\circ}\text{C}$ |

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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Characteristics

Operating temperature range: $T = -40 \dots 85 \text{ }^{\circ}\text{C}$
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. | |
|-----------------------------------------------------------------------------|-------------------------------------------------------------|------|---------|------|------------------------|
| Nominal frequency | f_N | — | 208,0 | — | MHz |
| Minimum insertion attenuation (including matching network) | α_{\min} $f_N \pm 1,92 \text{ MHz}$ | — | 11,7 | 13,5 | dB |
| Passband width | $\alpha_{\text{rel}} \leq 1 \text{ dB}$ $B_{1\text{dB}}$ | — | 4,2 | — | MHz |
| Amplitude ripple (p-p) | $\Delta\alpha$ $f_N \pm 1,92 \text{ MHz}$ | — | 0,7 | 1,0 | dB |
| Phase ripple (p-p) | $\Delta\phi$ $f_N \pm 1,92 \text{ MHz}$ | — | 7 | 10 | $^{\circ}$ |
| Phase ripple (rms) | $\Delta\phi$ $f_N \pm 1,92 \text{ MHz}$ | — | 1,1 | — | $^{\circ} \text{ rms}$ |
| Absolute group delay mean value within $f_N \pm 1,92 \text{ MHz}$ | τ_{mean} | 790 | 795 | 800 | ns |
| Relative attenuation (relative to α_{\min}) | α_{rel} | | | | |
| $f_N \pm 2,53 \text{ MHz} \dots f_N \pm 2,70 \text{ MHz}$ | | 8 | 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 |
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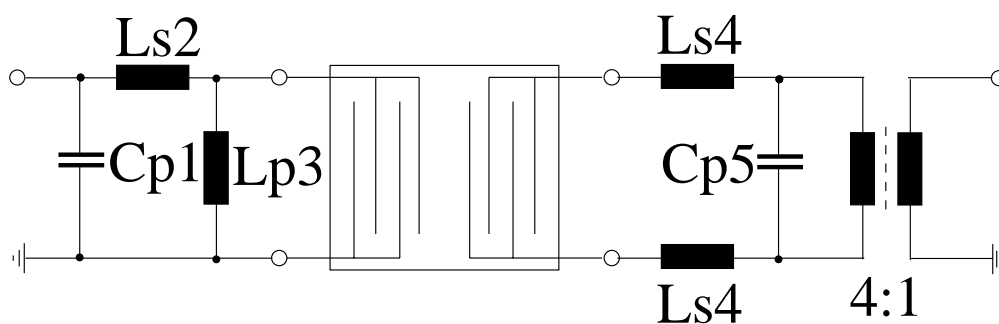
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Matching network (element values depend on PCB layout):



$$C_{p1} = 39 \text{ pF}$$

$$L_{s2} = 68 \text{ nH}$$

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

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

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



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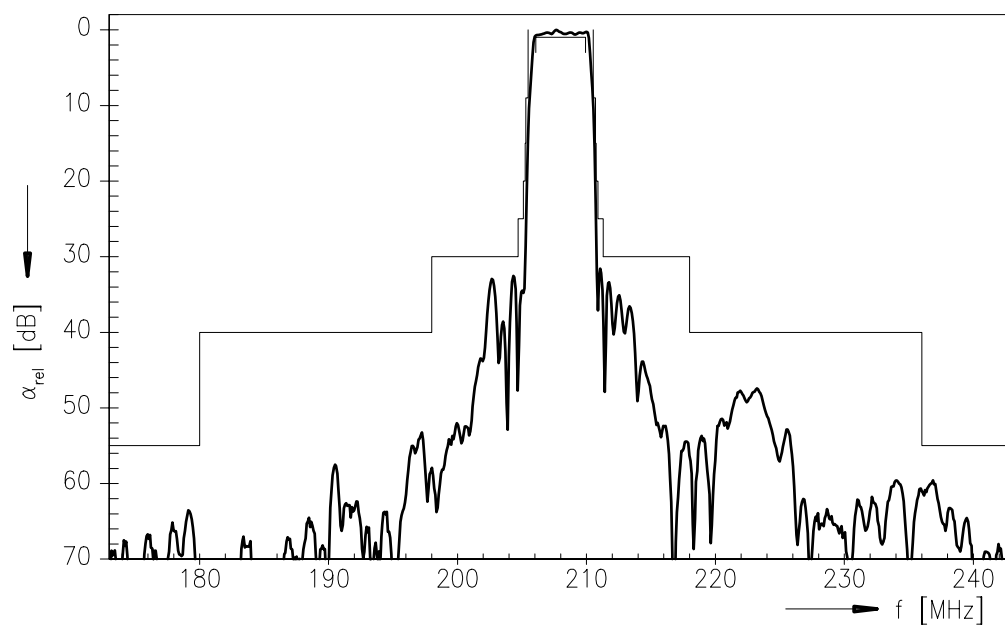
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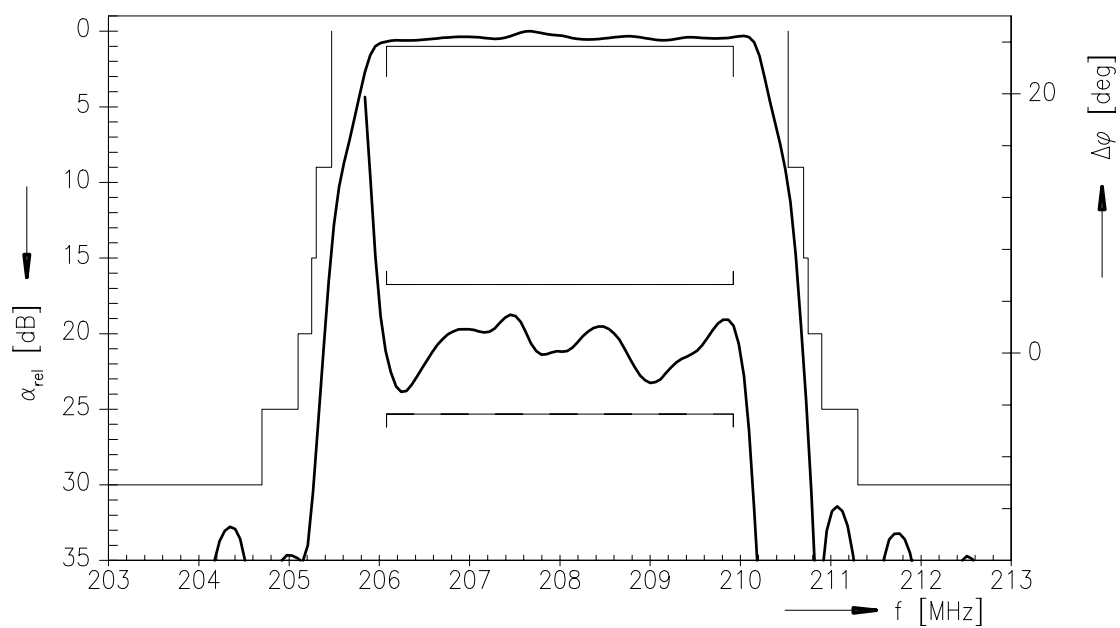
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Transfer function



Transfer function (pass band)





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