



Siemens Matsushita Components

SAW Components Low Loss Filter

B4839
282,00 MHz

Data Sheet

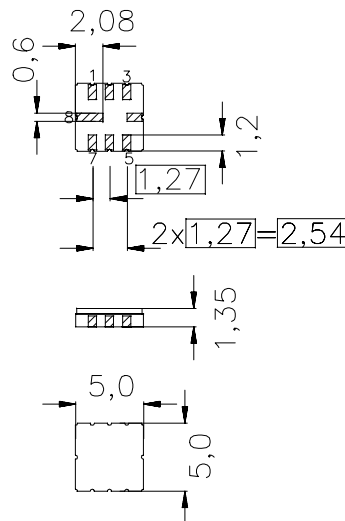
Features

- Low-loss IF filter for mobile telephone
- Channel selection in GSM, PCN, PCS systems
- Ceramic SMD package
- Very small size

Terminals

- Gold-plated Ni

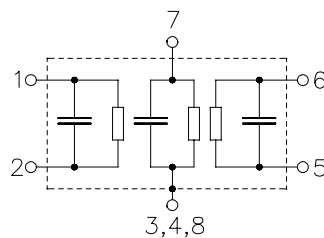
Ceramic package QCC8C



Dimensions in mm, approx. weight 0,10 g

Pin configuration

| | |
|-------|------------------|
| 1,2 | Input, balanced |
| 5,6 | Output, balanced |
| 7 | External coil |
| 3,4,8 | To be grounded |



| Type | Ordering code | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| B4839 | B39281-B4839-U310 | C61157-A7-A56 | F61074-V8070-Z000 |

Electrostatic Sensitive Device (ESD)

Maximum ratings

| | | | |
|----------------------------|-----------|-----------|-----|
| Operable temperature range | T | -20 / +75 | °C |
| Storage temperature range | T_{stg} | -35 / +85 | °C |
| DC voltage | V_{DC} | 0 | V |
| Source power | P_s | 10 | dBm |



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Characteristics

Operating temperature: $T = -20$ to $+75^{\circ}\text{C}$
Terminating source impedance: $Z_S = 1000\ \Omega \parallel -1,1\ \text{pF}$
Terminating load impedance: $Z_L = 1000\ \Omega \parallel -1,1\ \text{pF}$

| | | min. | typ. | max. | |
|--|-----------------------|------|----------------------|------|------------------------------|
| Nominal frequency | f_N | — | 282,00 | — | MHz |
| Minimum insertion attenuation (Including losses in baluns and matching network) | α_{\min} | 4,0 | 5,2 | 6,0 | dB |
| Amplitude ripple (p-p) $f_N - 67,5\ \text{kHz} \quad \dots \quad f_N + 67,5\ \text{kHz}$ | $\Delta\alpha$ | — | 0,3 | 1,5 | dB |
| Group delay ripple (p-p) $f_N - 80,0\ \text{kHz} \quad \dots \quad f_N + 80,0\ \text{kHz}$ | $\Delta\tau$ | — | 0,8 | 1,8 | μs |
| Relative attenuation (relative to α_{\min}) | α_{rel} | | | | |
| $f_N - 20,00\ \text{MHz} \quad \dots \quad f_N - 5,00\ \text{MHz}$ | | 45 | 47 | — | dB |
| $f_N - 5,00\ \text{MHz} \quad \dots \quad f_N - 1,60\ \text{MHz}$ | | 40 | 47 | — | dB |
| $f_N - 1,60\ \text{MHz} \quad \dots \quad f_N - 0,80\ \text{MHz}$ | | 35 | 45 | — | dB |
| $f_N - 0,80\ \text{MHz} \quad \dots \quad f_N - 0,60\ \text{MHz}$ | | 35 | 45 | — | dB |
| $f_N - 0,60\ \text{MHz} \quad \dots \quad f_N - 0,40\ \text{MHz}$ | | 18 | 38 | — | dB |
| $f_N + 0,40\ \text{MHz} \quad \dots \quad f_N + 0,60\ \text{MHz}$ | | 18 | 29 | — | dB |
| $f_N + 0,60\ \text{MHz} \quad \dots \quad f_N + 0,80\ \text{MHz}$ | | 35 | 37 | — | dB |
| $f_N + 0,80\ \text{MHz} \quad \dots \quad f_N + 1,60\ \text{MHz}$ | | 35 | 39 | — | dB |
| $f_N + 1,60\ \text{MHz} \quad \dots \quad f_N + 5,00\ \text{MHz}$ | | 40 | 50 | — | dB |
| $f_N + 5,00\ \text{MHz} \quad \dots \quad f_N + 20,00\ \text{MHz}$ | | 45 | 53 | — | dB |
| Impedance within the passband | | | | | |
| Input: $Z_{\text{IN}} = R_{\text{IN}} \parallel C_{\text{IN}}$ | | — | 1000 \parallel 1,1 | — | $\Omega \parallel \text{pF}$ |
| Output: $Z_{\text{OUT}} = R_{\text{OUT}} \parallel C_{\text{OUT}}$ | | — | 1000 \parallel 1,1 | — | $\Omega \parallel \text{pF}$ |
| Temperature coefficient of frequency ¹⁾ | TC_f | — | 0,031 | — | ppm/ K^2 |
| Frequency inversion point | T_0 | — | 25 | — | $^{\circ}\text{C}$ |

¹⁾ Temperature dependence of f_c : $f_c(T) = f_c(T_0)(1 + TC_f(T - T_0)^2)$



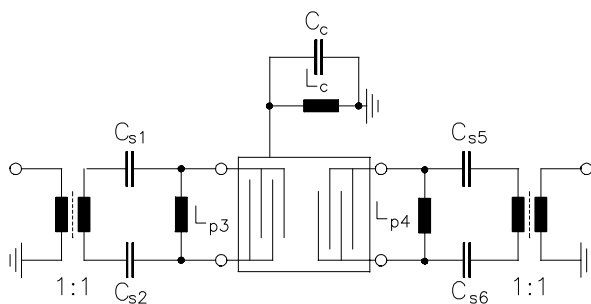
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Test matching network to 50 Ω (element values depend on PCB layout):



$$C_{s1} = C_{s6} = 3,9\text{pF}$$

$$C_{s2} = C_{s5} = 5,6\text{pF}$$

$$L_{p3} = L_{p4} = 68\text{nH}$$

$$L_c = 68\text{nH} \parallel 1,5\text{pF}$$



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Transfer function (normalized)

