



SAW Components

Data Sheet B7838

Data Sheet

An abstract, grayscale graphic featuring a globe with a grid of latitude and longitude lines. Overlaid on the globe is a large, stylized, 3D-effect word "EPCOS" in a light gray color. The word is tilted and appears to be floating or attached to the globe's surface. The overall composition is dark and moody, with a focus on the company's global presence and technological focus.



SAW Components

B7838

Low-Loss Filter for Mobile Communication

881,5 MHz

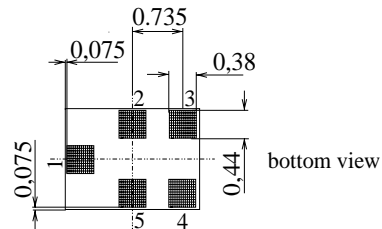
Data Sheet



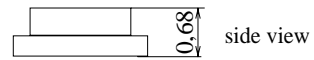
Chip sized SAW package QCS5C

Features

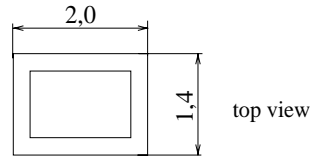
- Low-loss RF filter for mobile telephone GSM850/AMPS system, receive path
- Usable passband 25 MHz
- Unbalanced to balanced operation
- Excellent symmetry
- Impedance transformation from 50 Ω to 100 Ω
- Suitable for GPRS class 1 to 12
- Ceramic package for **Surface Mounted Technology (SMT)**



bottom view



side view



top view

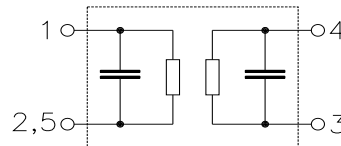
Terminals

- Ni, gold-plated

Dimensions in mm, approx. weight 0,007g

Pin configuration

- | | |
|------|------------------|
| 1 | Unbalanced input |
| 3, 4 | Balanced output |
| 2, 5 | To be grounded |



Type	Ordering code	Marking and Package according to	Packing according to
B7838	B39881-B7838-C710	C61157-A7-A111	F61074-V8151-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	- 30 / + 85	$^{\circ}\text{C}$	Machine Model, 10 pulses peak power of GSM signal, duty cycle 4:8
Storage temperature range	T_{stg}	- 40 / + 85	$^{\circ}\text{C}$	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	100*	V	
Input power at GSM850, GSM900, GSM1800 and GSM1900 Tx bands	P_{IN}	15	dBm	

* -acc. to JESD22-A115A (Machine Model), 10 negative & 10 positive pulses



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Characteristics

Operating temperature range: $T = +25\text{ }^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\text{ }\Omega$ (unbalanced)
 Terminating load impedance: $Z_L = 100\text{ }\Omega$ (balanced)

		min.	typ.	max.	
Center frequency	f_C	—	881,5	—	MHz
Maximum insertion attenuation	α_{\max}	—	1,7	2,0	dB
	869,0 ... 894,0 MHz				
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,5	0,8	dB
	869,0 ... 894,0 MHz				
Input return loss		10,0	11,0	—	dB
	869,0 ... 894,0 MHz				
Output return loss		10,0	11,0	—	dB
	869,0 ... 894,0 MHz				
Output amplitude balance (S_{31} / S_{21})		-0,5	0	0,5	dB
	869,0 ... 894,0 MHz				
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^{\circ}$)		-5	0	5	degree
	869,0 ... 894,0 MHz				
Attenuation	α				
	0,0 ... 840,0 MHz	47	55	—	dB
	840,0 ... 849,0 MHz	47	50	—	dB
	914,0 ... 950,0 MHz	24	27	—	dB
	950,0 ... 6000,0 MHz	45	55	—	dB



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Characteristics

Operating temperature range: $T = -30$ to $+85$ °C
Terminating source impedance: $Z_S = 50 \Omega$ (unbalanced)
Terminating load impedance: $Z_L = 100 \Omega$ (balanced)

		min.	typ.	max.	
Center frequency	f_C	—	881,5	—	MHz
Maximum insertion attenuation	α_{\max}				
869,0 ... 894,0 MHz		—	1,9	2,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
869,0 ... 894,0 MHz		—	0,7	1,0	dB
Input return loss					
869,0 ... 894,0 MHz		10,0	11,0	—	dB
Output return loss					
869,0 ... 894,0 MHz		10,0	11,0	—	dB
Output amplitude balance (S_{31} / S_{21})					
869,0 ... 894,0 MHz		-0,5	0	0,5	dB
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)					
869,0 ... 894,0 MHz		-5	0	5	degree
Attenuation	α				
0,0 ... 840,0 MHz		47	55	—	dB
840,0 ... 849,0 MHz		40	45	—	dB
914,0 ... 950,0 MHz		24	27	—	dB
950,0 ... 6000,0 MHz		45	55	—	dB



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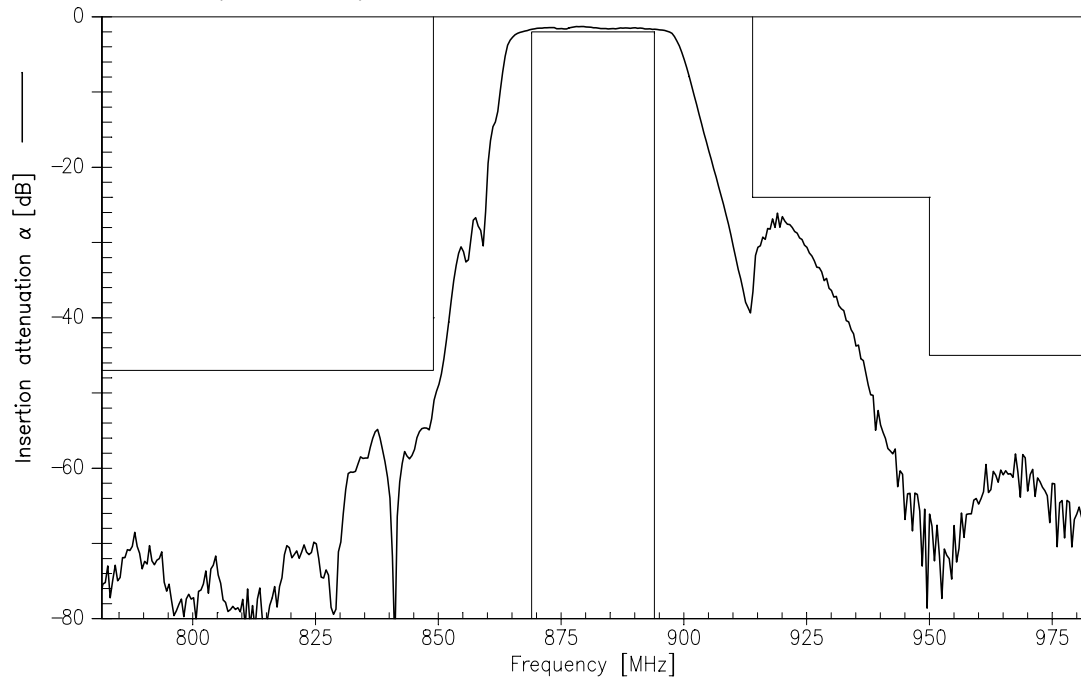
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881,5 MHz

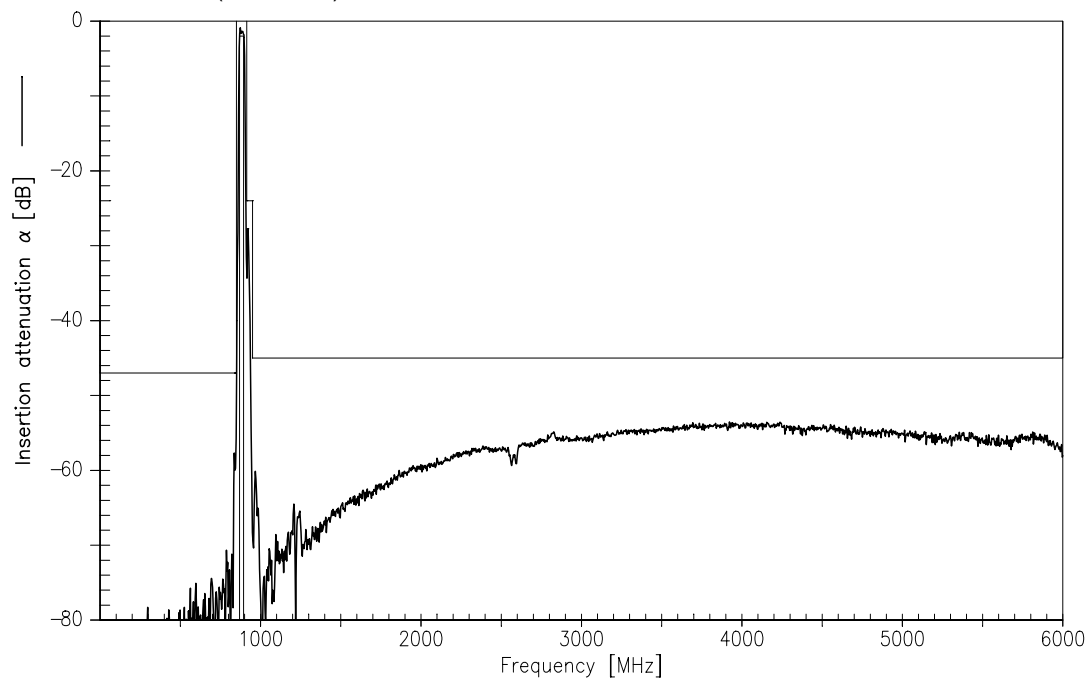
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Transfer function (narrowband)



Transfer function (wideband)





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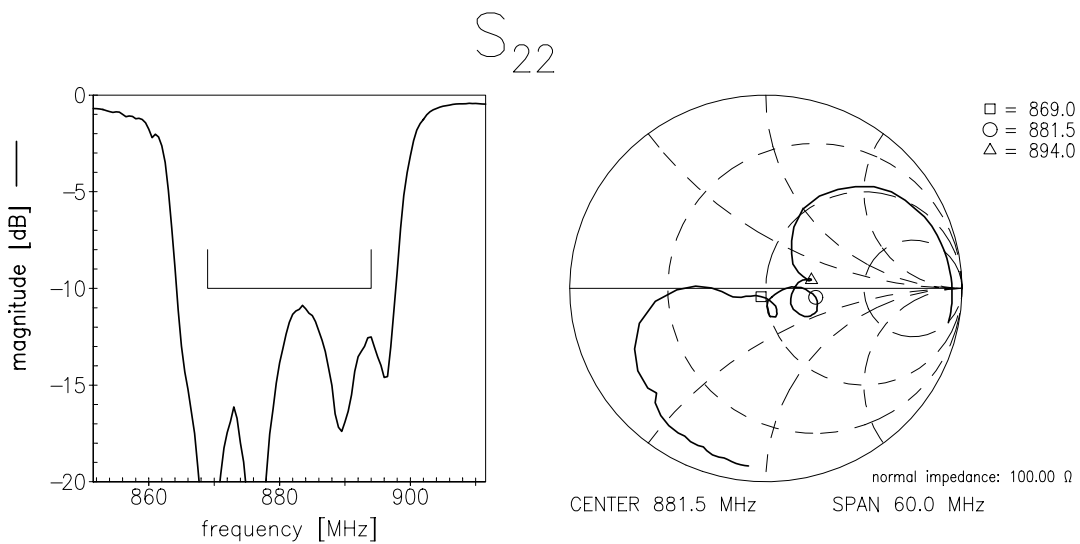
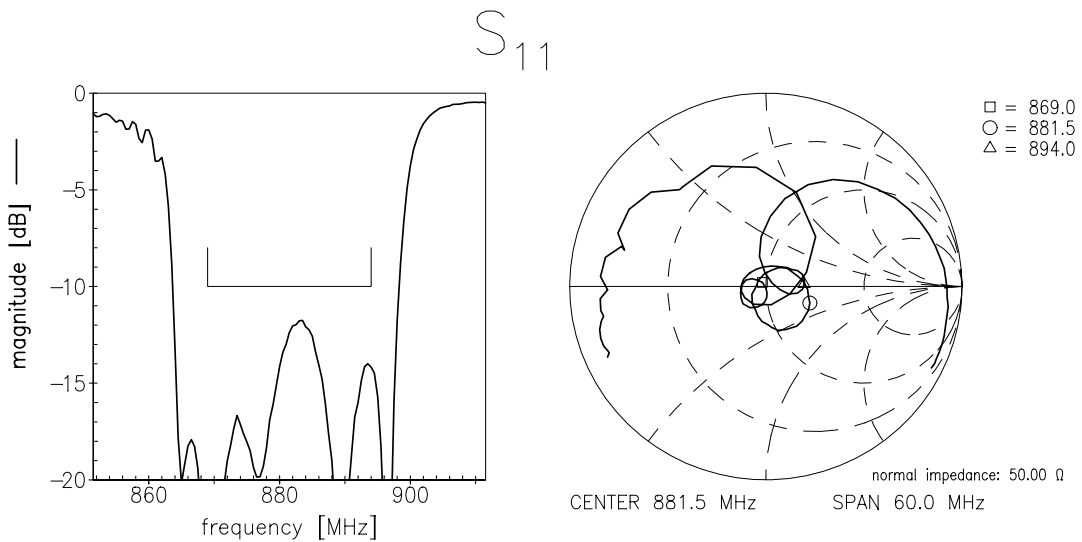
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Matching (measurement)





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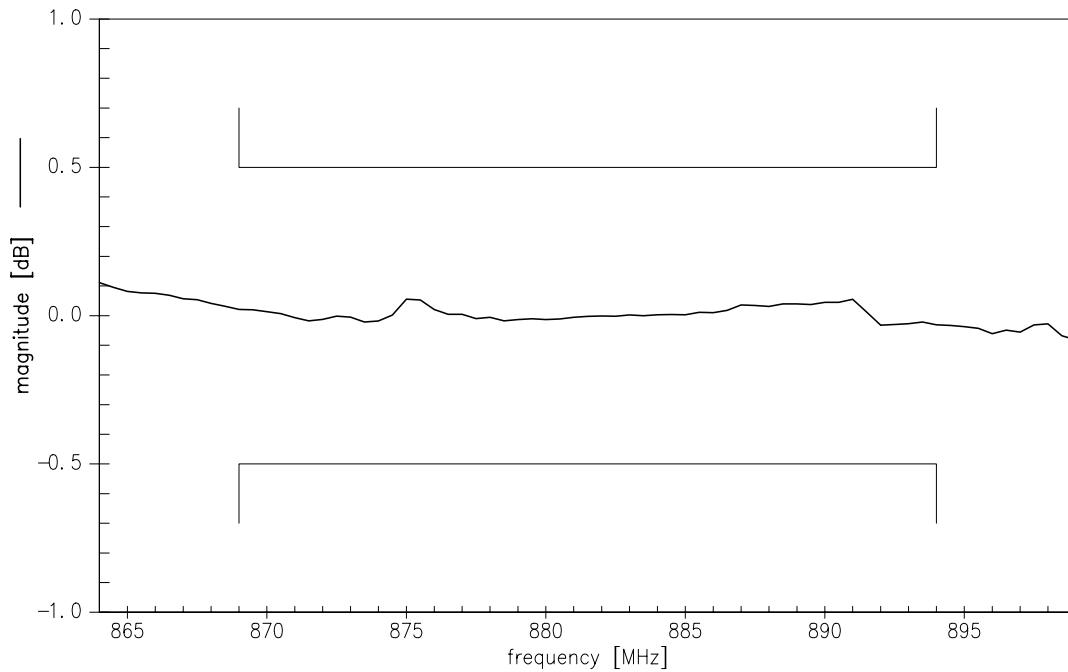
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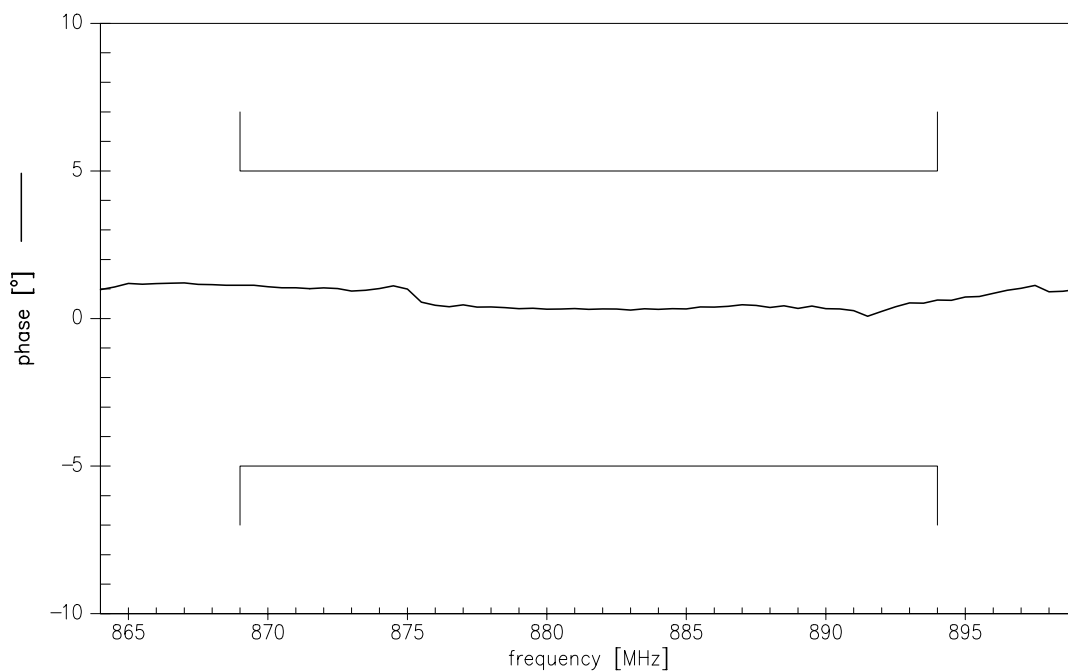
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Output amplitude balance ($|S_{31}|/|S_{21}|$)



Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)





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Data Sheet	SMD

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