



SAW Components

Data Sheet B7837

Data Sheet

An abstract graphic featuring the word "EPCOS" in large, glowing, 3D letters. The letters are white with a blue outline and a blue glow. They are set against a dark background that includes a faint, stylized globe and a wavy, blue, translucent pattern that resembles a liquid surface or a stylized wave. The overall effect is modern and technological.



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Low-Loss Filter for Mobile Communication

942,5 MHz

Data Sheet



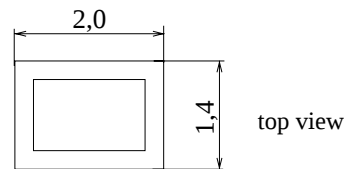
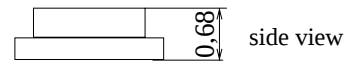
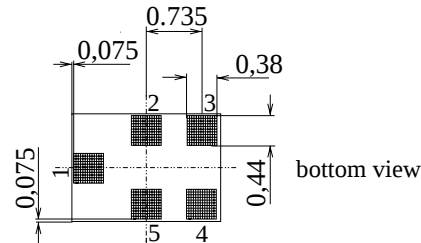
Chip Size SAW package QCS5E

Features

- Low-loss RF filter for mobile telephone EGSM system, receive path
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 35 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50 Ω to 150 Ω
- Suitable for GPRS class 1 to 12
- Package for Surface Mounted Technology (SMT)
- Pb-free

Terminals

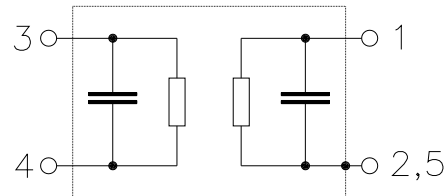
- Ni, gold-plated



Dimensions in mm, approx. weight 0,007g

Pin configuration

- | | |
|------|-------------------|
| 1 | Input, unbalanced |
| 3, 4 | Output, balanced |
| 2, 5 | Case ground |



Type	Ordering code	Marking and Package according to	Packing according to
B7837	B39941-B7837-K410	C61157-A7-A131	F61074-V8151-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	- 30 / + 85	$^{\circ}\text{C}$	machine model, 10 pulses
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, GSM1900 Tx bands	P_{IN}	15	dBm	peak power of GSM signal, duty cycle 4:8

* - 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: $Z_S = 50\text{ }\Omega$

Terminating load impedance: $Z_L = 150\text{ }\Omega \parallel 82\text{ nH (balanced)}$

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$				
	925,0 ... 960,0 MHz	—	1,4	1,7	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
	925,0 ... 960,0 MHz	—	0,7	1,0	dB
Input VSWR					
	925,0 ... 960,0 MHz	—	1,8	2,0	
Output VSWR					
	925,0 ... 960,0 MHz	—	1,8	2,0	
Attenuation					
	0,0 ... 480,0 MHz	45	53	—	dB
	480,0 ... 905,0 MHz	30	34	—	dB
	905,0 ... 915,0 MHz	25	27	—	dB
	980,0 ... 1000,0 MHz	25	29	—	dB
	1000,0 ... 1850,0 MHz	28	38	—	dB
	1850,0 ... 6000,0 MHz	40	44	—	dB
Amplitude balance ($ S_{31} / S_{21} $)					
	925,0 ... 960,0 MHz	-1,0	-0,5 / +0,7	1,0	dB
phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}$)					
	925,0 ... 960,0 MHz	-5	-3 / +2	5	degree
Diff. to common mode suppression	S_{SC12}				
	925,0 ... 960,0 MHz	22	29	—	dB
	824,0 ... 995,0 MHz	22	29	—	dB
	1648,0 ... 1990,0 MHz	22	45	—	dB
	3296,0 ... 3980,0 MHz	20	48	—	dB



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Characteristics

Operating temperature range: $T = -10$ to $+80$ °C
Terminating source impedance: $Z_S = 50 \Omega$
Terminating load impedance: $Z_L = 150 \Omega \parallel 82 \text{ nH}$ (balanced)

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$	—	1,5	2,0 ¹⁾	dB
925,0 ... 960,0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,8	1,2	dB
925,0 ... 960,0 MHz					
Input VSWR		—	1,8	2,0	
925,0 ... 960,0 MHz					
Output VSWR		—	1,8	2,0	
925,0 ... 960,0 MHz					
Attenuation					
0,0 ... 480,0 MHz		45	53	—	dB
480,0 ... 905,0 MHz		30	34	—	dB
905,0 ... 915,0 MHz		20 ²⁾	27	—	dB
980,0 ... 1000,0 MHz		25	29	—	dB
1000,0 ... 1850,0 MHz		28	38	—	dB
1850,0 ... 6000,0 MHz		40	44	—	dB
Amplitude balance ($ S_{31}/S_{21} $)					
925,0 ... 960,0 MHz		-1,0	-0,5 / +0,7	1,0	dB
phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)					
925,0 ... 960,0 MHz		-5	-3 / +2	5	degree
Diff. to common mode suppression	S_{sc12}				
925,0 ... 960,0 MHz		22	29	—	dB
824,0 ... 995,0 MHz		22	29	—	dB
1648,0 ... 1990,0 MHz		22	45	—	dB
3296,0 ... 3980,0 MHz		20	48	—	dB

¹⁾ 2,2 dB for $T = -30^\circ\text{C}$ to $+85^\circ\text{C}$

²⁾ 17 dB for $T = -30^\circ\text{C}$ to $+85^\circ\text{C}$



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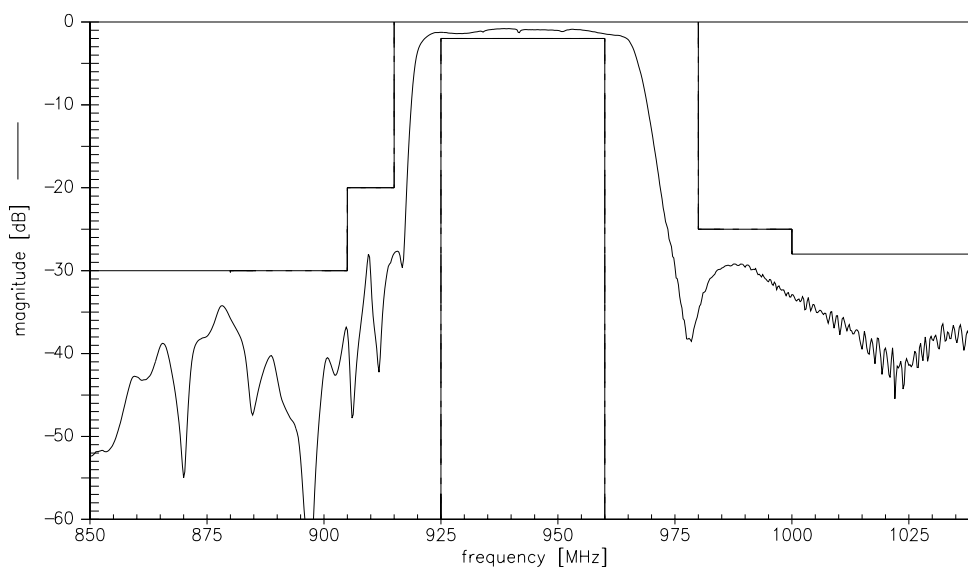
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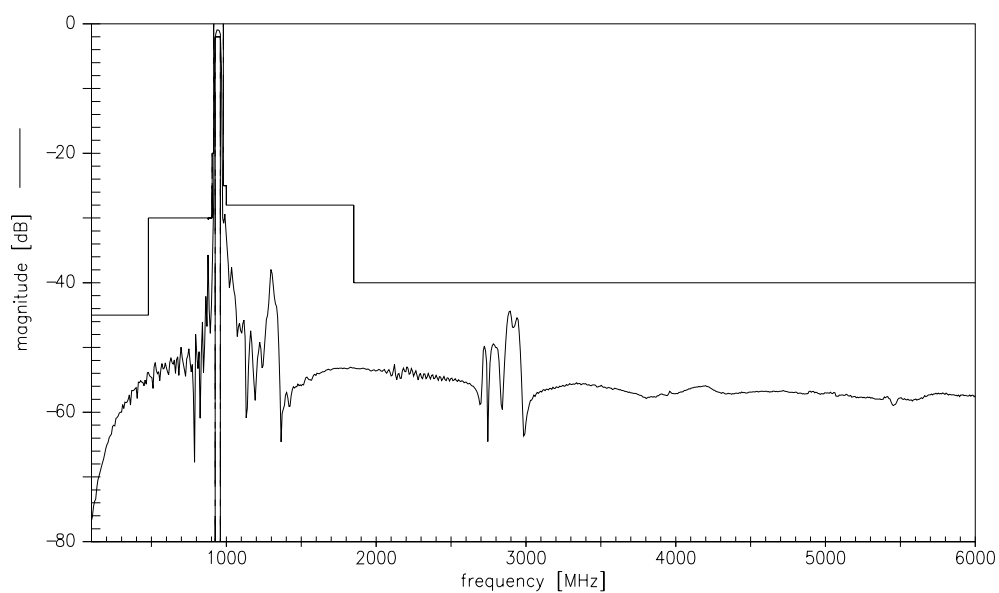
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Transfer function (passband)



Transfer function (wideband)





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