



SAW Components

Data Sheet B7846

Data Sheet

An abstract graphic featuring the word "EPCOS" in large, glowing, 3D letters. The letters are white with a blue glow and are positioned diagonally across the frame. In the background, there is a faint, stylized globe with circuitry patterns, suggesting a global network or technological theme. The overall color scheme is dark with blue and white highlights.



SAW Components

B7846

Low-Loss Filter for Mobile Communication

1960,0 MHz

Data Sheet



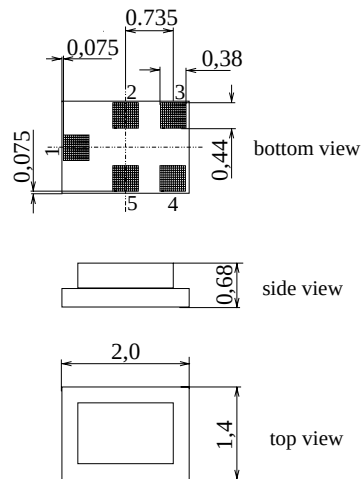
Chip sized SAW package QCS5E

Features

- Low-loss RF filter for mobile telephone PCS systems, receive path
- Low amplitude ripple
- Very low insertion loss
- Usable passband 60 MHz
- Unbalanced to balanced operation
- Impedance transform from 50 Ω to 150 Ω
- Suitable for GPRS class 1 to 12
- Package for **Surface Mount Technology (SMT)**
- Pb-free

Terminals

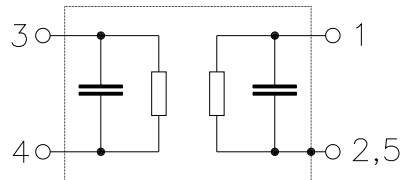
- Ni, gold-plated



Dimensions in mm, approx. weight 0,007 g

Pin configuration

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



Type	Ordering code	Marking and Package according to	Packing according to
B7846	B39202-B7846-K410	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
Storage temperature range	T_{stg}	- 40 / + 85	$^{\circ}\text{C}$	
ESD voltage	$V_{\text{ESD}}^{1)}$	50	V	
DC voltage	V_{DC}	5	V	
Input Power at				peak power of GSM signal, duty cycle 4:8
GSM850, GSM900	P_{IN}	15	dBm	
GSM1800, GSM1900	P_{IN}	12	dBm	
Tx bands				

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



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Characteristics

Operating Temperature Range:

$$T = 25^{\circ}\text{C}$$

Terminating source impedance:

$$Z_S = 50\Omega$$

Terminating load impedance:

$$Z_L = 150\Omega \parallel 18\text{nH (balanced)}$$

		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$				
1930,0 ... 1990,0 MHz		—	1,7	2,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0 ... 1990,0 MHz		—	0,7	1,3	dB
Input VSWR					
1930,0 ... 1990,0 MHz		—	1,8	2,2	
Output VSWR					
1930,0 ... 1990,0 MHz		—	1,7	2,2	
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}$)					
1930,0 ... 1990,0 MHz		-10	-4 ... 2	10	degree
Output amplitude balance ($ S_{31}/S_{21} $)					
1930,0 ... 1990,0 MHz		-1,0	-0.8 ... 0.8	1,0	dB
Attenuation	α				
0,0 ... 1510,0 MHz		40	44	—	dB
1510,0 ... 1830,0 MHz		30	34	—	dB
1830,0 ... 1850,0 MHz		28	31	—	dB
1850,0 ... 1890,0 MHz		23	29	—	dB
1890,0 ... 1910,0 MHz		12	15	—	dB
2010,0 ... 2070,0 MHz		13	15	—	dB
2070,0 ... 2400,0 MHz		26	28	—	dB
2400,0 ... 2500,0 MHz		35	42	—	dB
2500,0 ... 3860,0 MHz		28	34	—	dB
3860,0 ... 3980,0 MHz		45	53	—	dB
3980,0 ... 5790,0 MHz		28	44	—	dB
5790,0 ... 6000,0 MHz		40	45	—	dB



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Characteristics

Operating Temperature Range:

$T = -20$ to $+75^{\circ}\text{C}$

Terminating source impedance:

$Z_S = 50\Omega$

Terminating load impedance:

$Z_L = 150\Omega \parallel 18\text{nH}$ (balanced)

		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$				
1930,0 ... 1990,0 MHz		—	2,1	2,6	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0 ... 1990,0 MHz		—	1,1	1,4	dB
Input VSWR					
1930,0 ... 1990,0 MHz		—	1,9	2,2	
Output VSWR					
1930,0 ... 1990,0 MHz		—	2,0	2,2	
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}$)					
1930,0 ... 1990,0 MHz		-10	-4... 2	10	degree
Output amplitude balance ($ S_{31}/S_{21} $)					
1930,0 ... 1990,0 MHz		-1,0	-0.8 ... 0.8	1,0	dB
Attenuation	α				
0,0 ... 1510,0 MHz		40	44	—	dB
1510,0 ... 1830,0 MHz		30	34	—	dB
1830,0 ... 1850,0 MHz		28	31	—	dB
1850,0 ... 1890,0 MHz		23	29	—	dB
1890,0 ... 1910,0 MHz		12	14	—	dB
2010,0 ... 2070,0 MHz		11	15	—	dB
2070,0 ... 2400,0 MHz		26	28	—	dB
2400,0 ... 2500,0 MHz		35	42	—	dB
2500,0 ... 3860,0 MHz		28	34	—	dB
3860,0 ... 3980,0 MHz		45	53	—	dB
3980,0 ... 5790,0 MHz		28	44	—	dB
5790,0 ... 6000,0 MHz		40	45	—	dB



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Characteristics

Operating Temperature Range:

$T = -20$ to $+85^{\circ}\text{C}$

Terminating source impedance:

$Z_S = 50\Omega$

Terminating load impedance:

$Z_L = 150\Omega \parallel 18\text{nH}$ (balanced)

		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$				
1930,0 ... 1990,0 MHz		—	2,1	2,6	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0 ... 1990,0 MHz		—	1,1	1,4	dB
Input VSWR					
1930,0 ... 1990,0 MHz		—	1,9	2,2	
Output VSWR					
1930,0 ... 1990,0 MHz		—	2,0	2,2	
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}$)					
1930,0 ... 1990,0 MHz		-10	-4... 2	10	degree
Output amplitude balance ($ S_{31}/S_{21} $)					
1930,0 ... 1990,0 MHz		-1,0	-0.8 ... 0.8	1,0	dB
Attenuation	α				
0,0 ... 1510,0 MHz		40	44	—	dB
1510,0 ... 1830,0 MHz		30	34	—	dB
1830,0 ... 1850,0 MHz		28	31	—	dB
1850,0 ... 1890,0 MHz		23	29	—	dB
1890,0 ... 1910,0 MHz		10	14	—	dB
2010,0 ... 2070,0 MHz		10	15	—	dB
2070,0 ... 2400,0 MHz		26	28	—	dB
2400,0 ... 2500,0 MHz		35	42	—	dB
2500,0 ... 3860,0 MHz		28	34	—	dB
3860,0 ... 3980,0 MHz		45	53	—	dB
3980,0 ... 5790,0 MHz		28	44	—	dB
5790,0 ... 6000,0 MHz		40	45	—	dB



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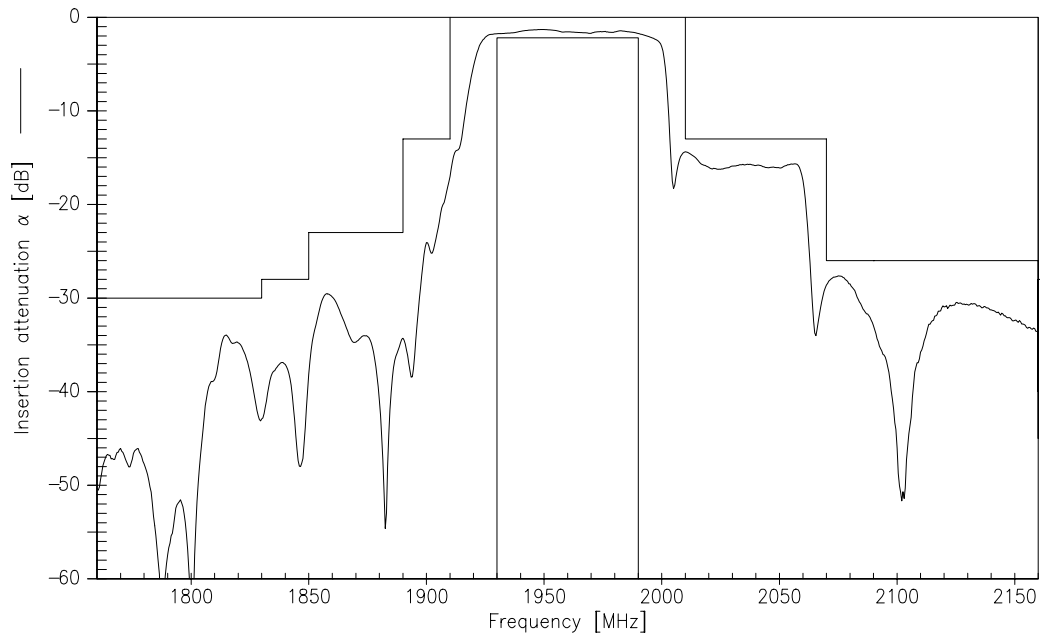
Low-Loss Filter for Mobile Communication

1960,0 MHz

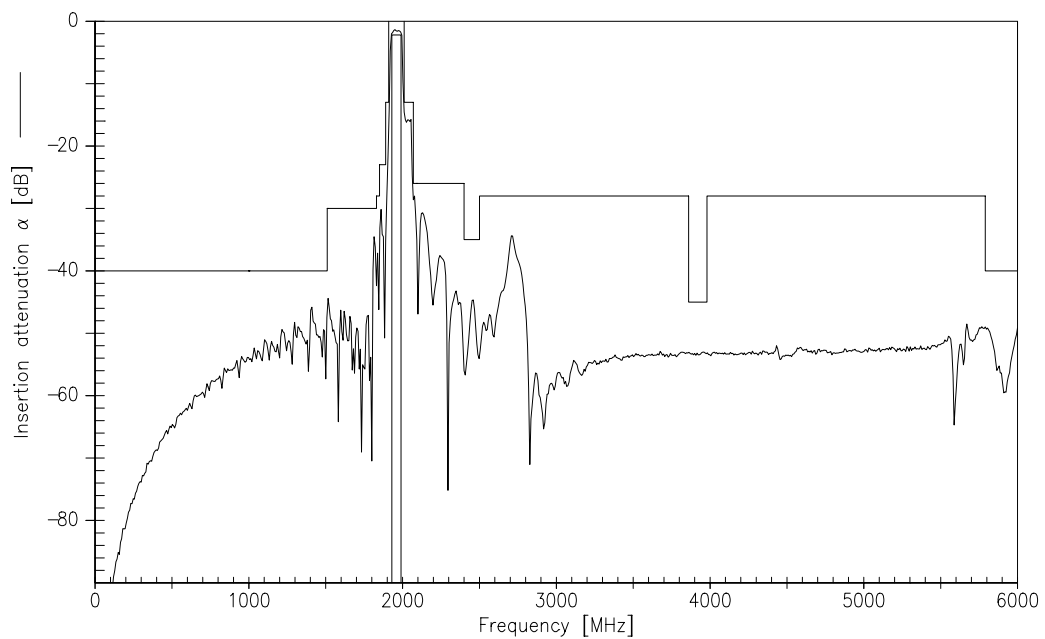
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Transfer function



Transfer function (wide band)





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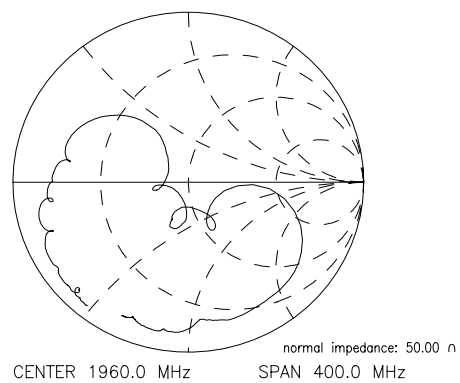
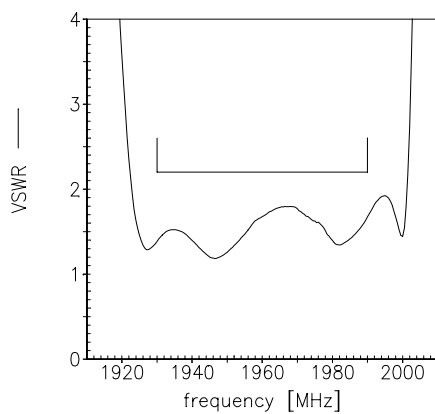
1960,0 MHz

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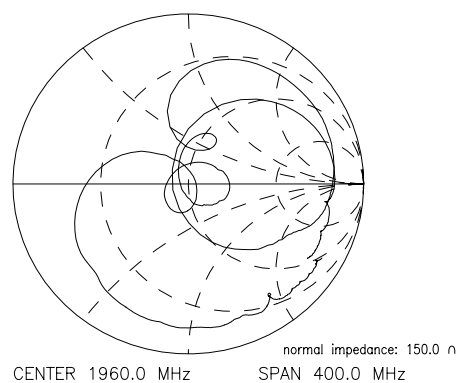


Reflection functions

S11



S22





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