THE DATASHEET OF

B39202B7846K410

EPCOS

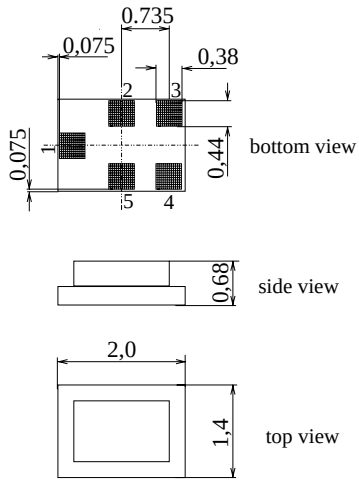
SAW Components

Data Sheet B7846

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 **S**urface **M**ount **T**echnology (**SMT**)
- Pb-free



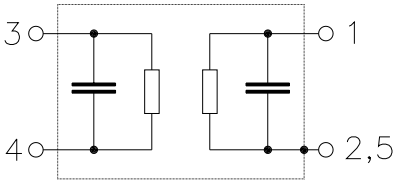
Dimensions in mm, approx. weight 0,007 g

Terminals

- Ni, gold-plated

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 **S**ensitive **D**evice (**ESD**)

Maximum ratings

Operable temperature range	T	– 30 / + 85	˚C	
Storage temperature range	T_{stg}	– 40 / + 85	˚C	
ESD voltage	V_{ESD} 1)	50	V	Machine Model, 10 pulses
DC voltage	V_{DC}	5	V	
Input Power at				
GSM850, GSM900	P_{IN}	15	dBm	peak power of GSM signal,
GSM1800, GSM1900	P_{IN}	12	dBm	duty cycle 4:8
Tx bands				

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

Characteristics

Operating Temperature Range: T = 25˚C
Terminating source impedance: Z_S = 50Ω
Terminating load impedance: Z_L = 150Ω || 18nH (balanced)

		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{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 ($\lvert S_{31}/S_{21}\rvert$)					
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

Characteristics

Operating Temperature Range: T = -20 to +75˚C
Terminating source impedance: Z_S = 50Ω
Terminating load impedance: Z_L = 150Ω || 18nH (balanced)

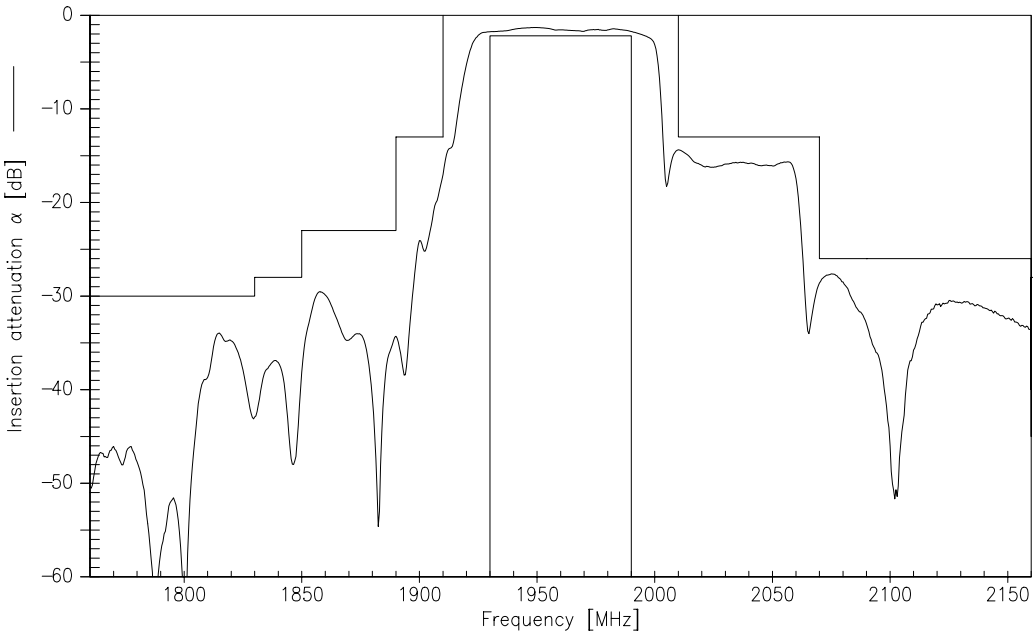
		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{max}				
1930,0 ... 1990,0 MHz		—	2,1	2,6	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0 ... 1990,0 MHz		—	1,1	1,4	dB
Input VSWR					
1930,0 ...1990,0 MHz		—	1,9	2,2	
Output VSWR					
1930,0 ...1990,0 MHz		—	2,0	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 ($\lvert S_{31}/S_{21}\rvert$)					
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

Characteristics

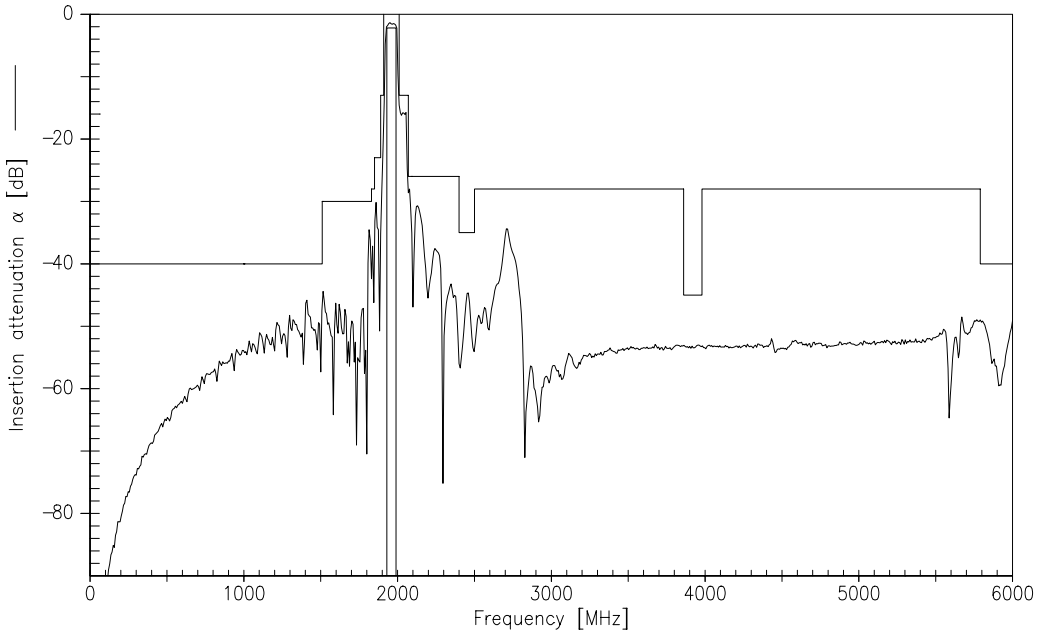
Operating Temperature Range: T = -20 to +85˚C
Terminating source impedance: Z_S = 50Ω
Terminating load impedance: Z_L = 150Ω || 18nH (balanced)

		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{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 ($\lvert S_{31}/S_{21}\rvert$)					
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

Transfer function

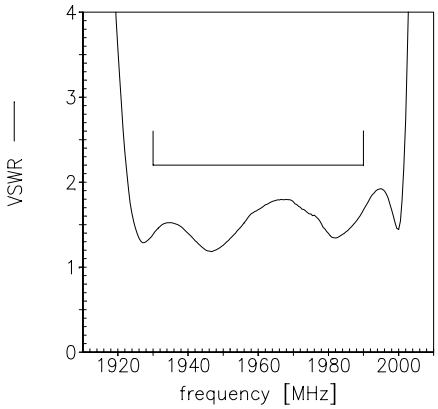


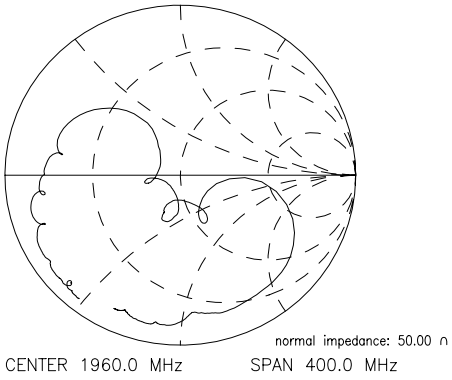
Transfer function (wide band)



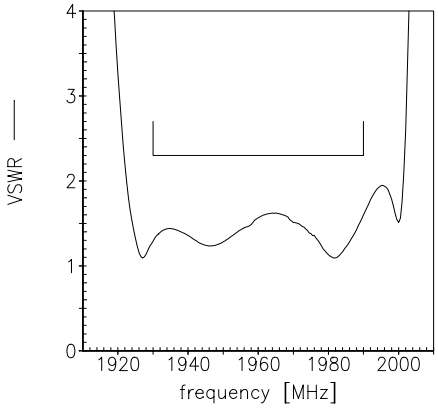
Reflection functions

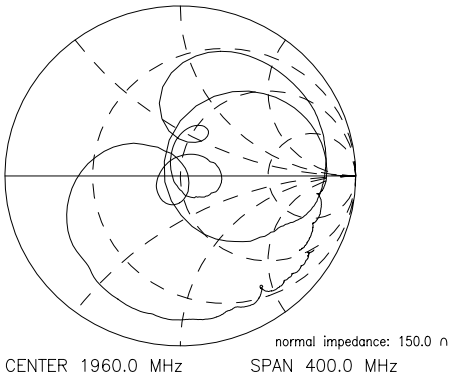
S11





S22





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