EPCOS

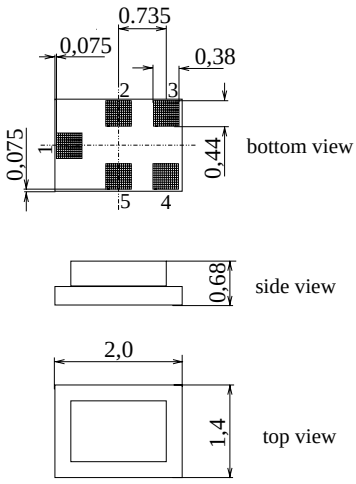
SAW Components

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



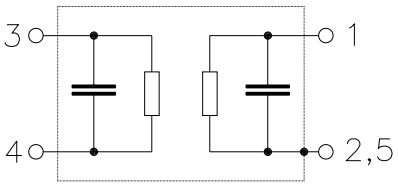
Terminals

- 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 **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)

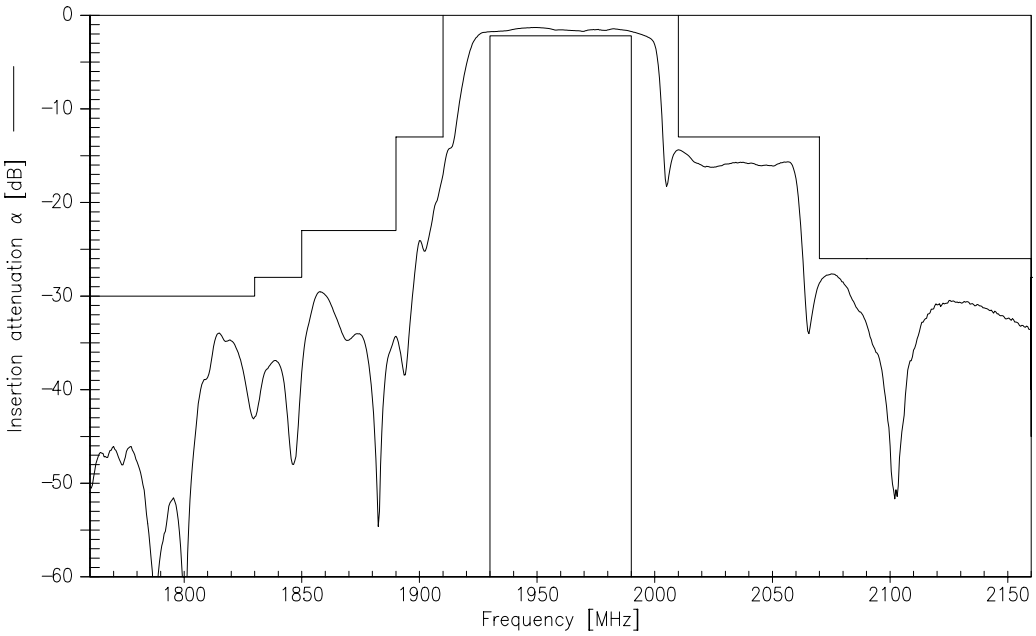
		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{max}				
1930,0 ... 1990,0 MHz		—	2,1	2,6	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0 ... 1990,0 MHz		—	1,1	1,4	dB
Input VSWR					
1930,0 ...1990,0 MHz		—	1,9	2,2	
Output VSWR					
1930,0 ...1990,0 MHz		—	2,0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

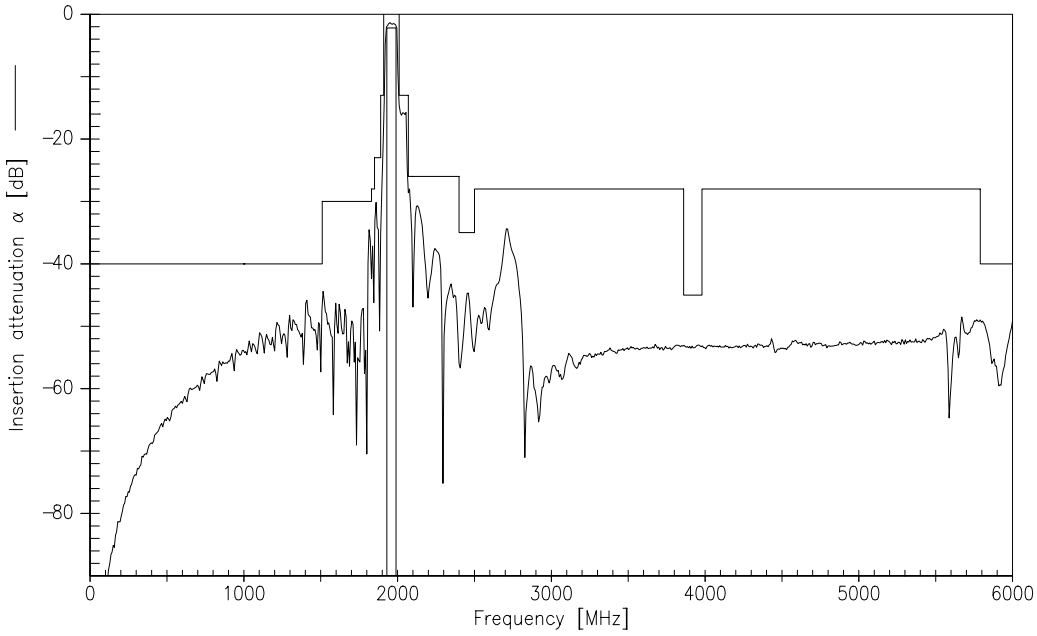
Operating Temperature Range: T = -20 to +85˚C
Terminating source impedance: Z_S = 50Ω
Terminating load impedance: Z_L = 150Ω || 18nH (balanced)

		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

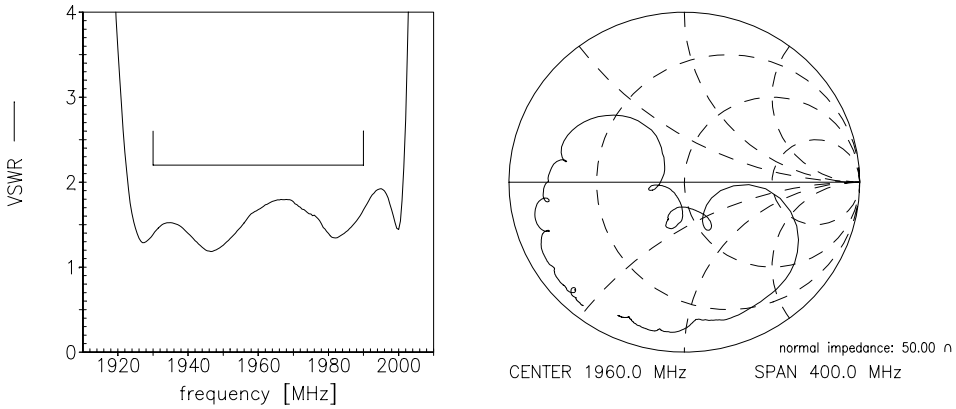


Transfer function (wide band)

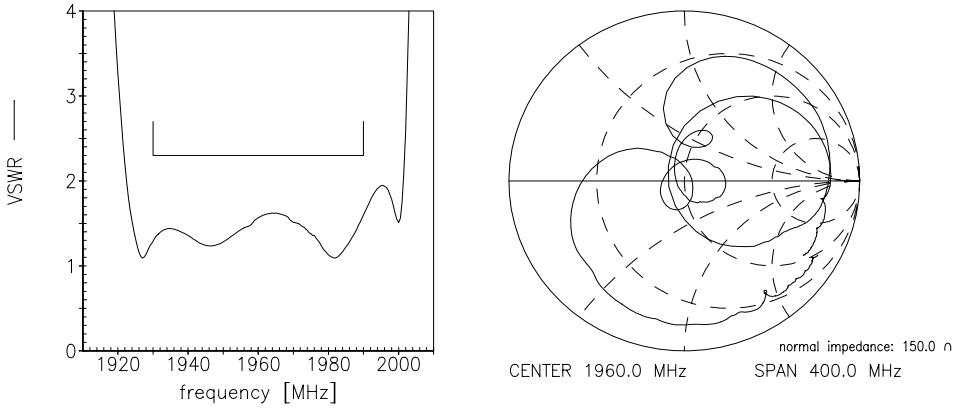


Reflection functions

S11



S22



Published by EPCOS AG
Surface Acoustic Wave Components Division, SAW MC WT
P.O. Box 80 17 09, 81617 Munich, GERMANY

Purchase orders are subject to the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry recommended by the ZVEI (German Electrical and Electronic Manufacturers' Association), unless otherwise agreed.

This brochure replaces the previous edition.

For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.