EPCOS

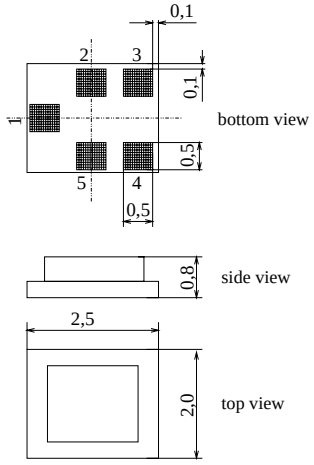
SAW Components

Data Sheet B7717, Pb-free

Chip sized SAW package **QCS5H**

Features

- Low-loss RF filter for mobile telephone PCS systems, receive path
- Low amplitude ripple
- Usable passband 60 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50Ω to 200Ω
- Suitable for GPRS class 1 to 12
- Package for **S**urface **M**ounted **T**echnology (**SMT**)
- Pb-free



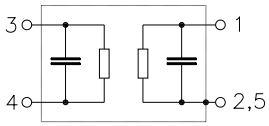
Terminals

- Gold-plated Ni

Dimensions in mm, approx. weight 0,015 g

Pin configuration

1	Input, unbalanced
2, 5	Input ground
3, 4	Output, balanced
2, 5	To be grounded



Type	Ordering code	Marking and Package according to	Packing according to
B7717	B39202-B7717-K910	C61157-A7-A139	F61074-V8189-Z000

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

Maximum ratings

Operable temperature range	T	– 40/+ 85	˚C	
Storage temperature range	T_{stg}	– 40/+ 85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V^*_{ESD}	50*	V	Machine Model, 10 pulses
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				

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

Characteristics

Operating temperature range: T = + 25 ± 2 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 200 Ω (balanced) || 15 nH

		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{max}				
1930,0 ... 1990,0 MHz		—	2,6	3,1	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0 ... 1990,0 MHz		—	1,0	1,5	dB
Input VSWR					
1930,0 ... 1990,0 MHz		—	1,7	2,2	
Output VSWR					
1930,0 ... 1990,0 MHz		—	1,7	2,2	
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
1930,0 ... 1990,0 MHz		-15	0	15	degree
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
1930,0 ... 1990,0 MHz		-1,5	0	1,5	dB
Attenuation	α				
0,0 ... 1000,0 MHz		45	50	—	dB
1000,0 ... 1830,0 MHz		25	31	—	dB
1830,0 ... 1900,0 MHz		15	19	—	dB
1900,0 ... 1910,0 MHz		11	18	—	dB
2010,0 ... 2030,0 MHz		8	11	—	dB
2030,0 ... 2070,0 MHz		12	14	—	dB
2070,0 ... 2310,0 MHz		20	22	—	dB
2310,0 ... 2380,0 MHz		35	43	—	dB
2380,0 ... 4600,0 MHz		30	42	—	dB
4600,0 ... 6000,0 MHz		23	50	—	dB

Characteristics

Operating temperature range: T = -10 to +75 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 200 Ω (balanced) || 15 nH

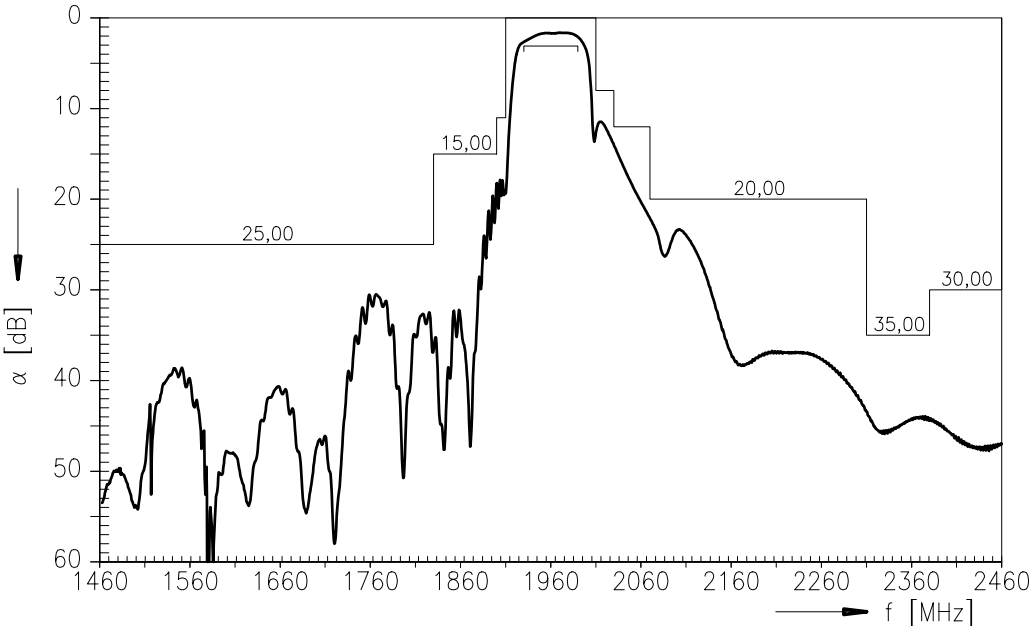
		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{max}				
1930,0 ... 1990,0 MHz		—	2,8	3,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0 ... 1990,0 MHz		—	1,2	1,9	dB
Input VSWR					
1930,0 ... 1990,0 MHz		—	1,7	2,4	
Output VSWR					
1930,0 ... 1990,0 MHz		—	1,7	2,4	
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
1930,0 ... 1990,0 MHz		-15	0	15	degree
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
1930,0 ... 1990,0 MHz		-1,5	0	1,5	dB
Attenuation	α				
0,0 ... 1000,0 MHz		45	50	—	dB
1000,0 ... 1830,0 MHz		25	31	—	dB
1830,0 ... 1900,0 MHz		15	19	—	dB
1900,0 ... 1910,0 MHz		7	15	—	dB
2010,0 ... 2030,0 MHz		5	11	—	dB
2030,0 ... 2070,0 MHz		12	14	—	dB
2070,0 ... 2310,0 MHz		20	22	—	dB
2310,0 ... 2380,0 MHz		35	43	—	dB
2380,0 ... 4600,0 MHz		30	42	—	dB
4600,0 ... 6000,0 MHz		23	50	—	dB

Characteristics

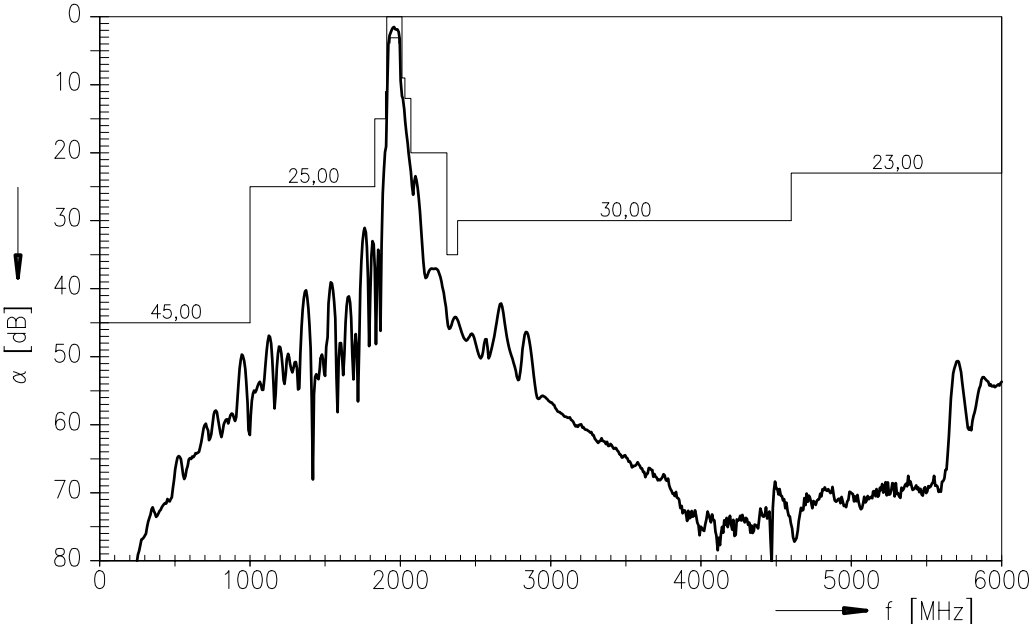
Operating temperature range: T = -30 to +85 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 200 Ω (balanced) || 15 nH

		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{max}				
1930,0 ... 1990,0 MHz		—	2,9	4,0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0 ... 1990,0 MHz		—	1,3	2,4	dB
Input VSWR					
1930,0 ... 1990,0 MHz		—	1,7	2,4	
Output VSWR					
1930,0 ... 1990,0 MHz		—	1,7	2,4	
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
1930,0 ... 1990,0 MHz		-15	0	15	degree
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
1930,0 ... 1990,0 MHz		-1,5	0	1,5	dB
Attenuation	α				
0,0 ... 1000,0 MHz		45	50	—	dB
1000,0 ... 1830,0 MHz		25	31	—	dB
1830,0 ... 1900,0 MHz		15	19	—	dB
1900,0 ... 1910,0 MHz		7	15	—	dB
2010,0 ... 2030,0 MHz		5	11	—	dB
2030,0 ... 2070,0 MHz		12	14	—	dB
2070,0 ... 2310,0 MHz		20	22	—	dB
2310,0 ... 2380,0 MHz		35	43	—	dB
2380,0 ... 4600,0 MHz		30	42	—	dB
4600,0 ... 6000,0 MHz		23	50	—	dB

Transfer function (spec at 25 ˚C)



Transfer function (wide band):‘



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

Purchase orders are subject to the General Conditions for the Supply of Products and Services o
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 o
the international Representatives.

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