EPCOS

SAW Components

Data Sheet B7716, Pb-Free

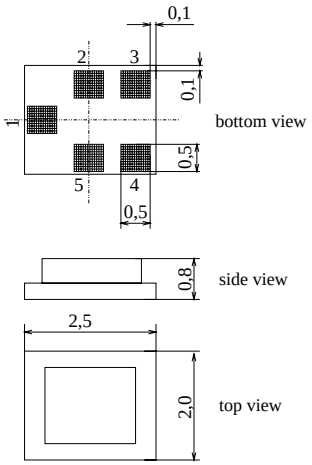


Data Sheet SMD

Chip sized SAW package **QCS5H**

Features

- Low-loss RF filter for mobile telephone PCN systems, receive path
- Low amplitude ripple
- Usable passband 75 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**)
- Ceramic SMD package
- Pb-Free



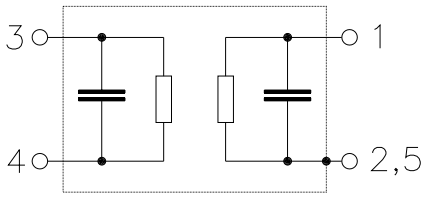
Terminals

- Ni, gold-plated

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
B7716	B39182-B7716-K910	C61157-A7-A139	F61074-V8189-Z000

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

Maximum ratings

Operable temperature range	T	– 30 / + 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 = 50Ω (unbalanced)
Terminating load impedance: Z_L = 200Ω (balanced) || 18nH

		min.	typ.	max.	
Center frequency	f_C	—	1842,5	—	MHz
Maximum insertion attenuation	α_{max}				
1805,0 ... 1880,0 MHz		—	3,0	3,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1805,0 ... 1880,0 MHz		—	1,1	1,6	dB
Input VSWR					
1805,0 ... 1880,0 MHz		—	2,2	2,4	
Output VSWR					
1805,0 ... 1880,0 MHz		—	2,2	2,4	
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$)					
1805,0 ... 1880,0 MHz		-12	—	+12	degree
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
1805,0 ... 1880,0 MHz		-1,4	—	1,4	dB
Attenuation	α				
0,0 ... 1200,0 MHz		40	47	—	dB
1200,0 ... 1705,0 MHz		30	36	—	dB
1705,0 ... 1785,0 MHz		15	19	—	dB
1920,0 ... 1980,0 MHz		15	20	—	dB
1980,0 ... 2200,0 MHz		20	22	—	dB
2200,0 ... 3000,0 MHz		30	38	—	dB
3000,0 ... 6000,0 MHz		40	48	—	dB

Characteristics

Operating Temperature Range: T = -10 to +80°C
Terminating source impedance: Z_S = 50Ω (unbalanced)
Terminating load impedance: Z_L = 200Ω (balanced) || 18nH

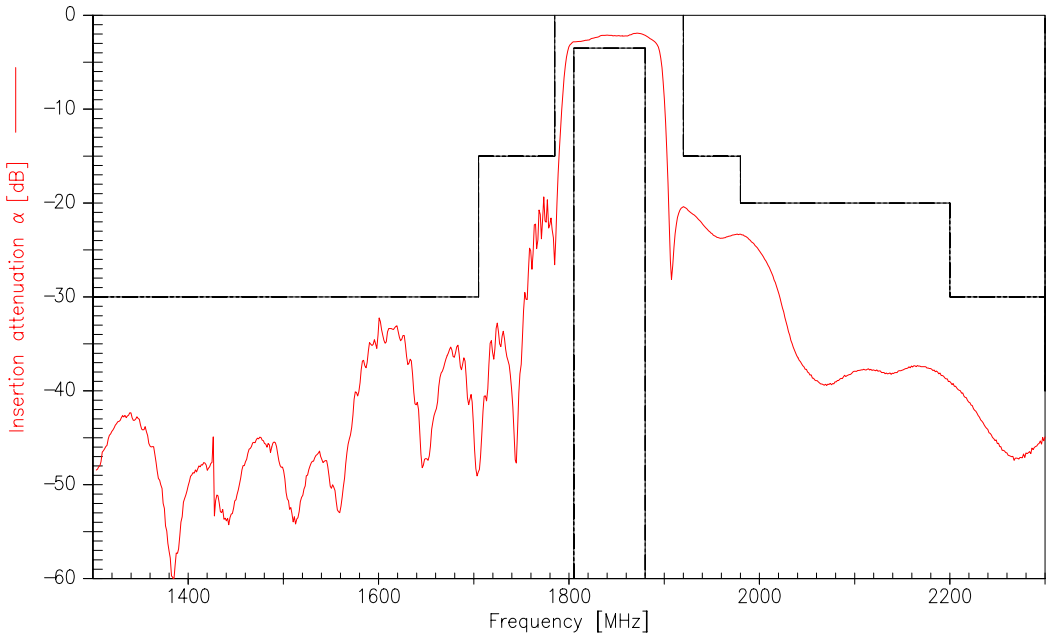
		min.	typ.	max.	
Center frequency	f_C	—	1842,5	—	MHz
Maximum insertion attenuation	α_{max}				
1805,0 ... 1880,0 MHz		—	3,2	3,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1805,0 ... 1880,0 MHz		—	1,3	1,6	dB
Input VSWR					
1805,0 ... 1880,0 MHz		—	2,4	2,6	
Output VSWR					
1805,0 ... 1880,0 MHz		—	2,4	2,6	
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
1805,0 ... 1880,0 MHz		-12	—	+12	degree
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
1805,0 ... 1880,0 MHz		-1,4	—	1,4	dB
Attenuation	α				
0,0 ... 1200,0 MHz		40	47	—	dB
1200,0 ... 1705,0 MHz		30	36	—	dB
1705,0 ... 1785,0 MHz		10	15	—	dB
1920,0 ... 1980,0 MHz		10	20	—	dB
1980,0 ... 2200,0 MHz		20	22	—	dB
2200,0 ... 3000,0 MHz		30	38	—	dB
3000,0 ... 6000,0 MHz		40	48	—	dB

Characteristics

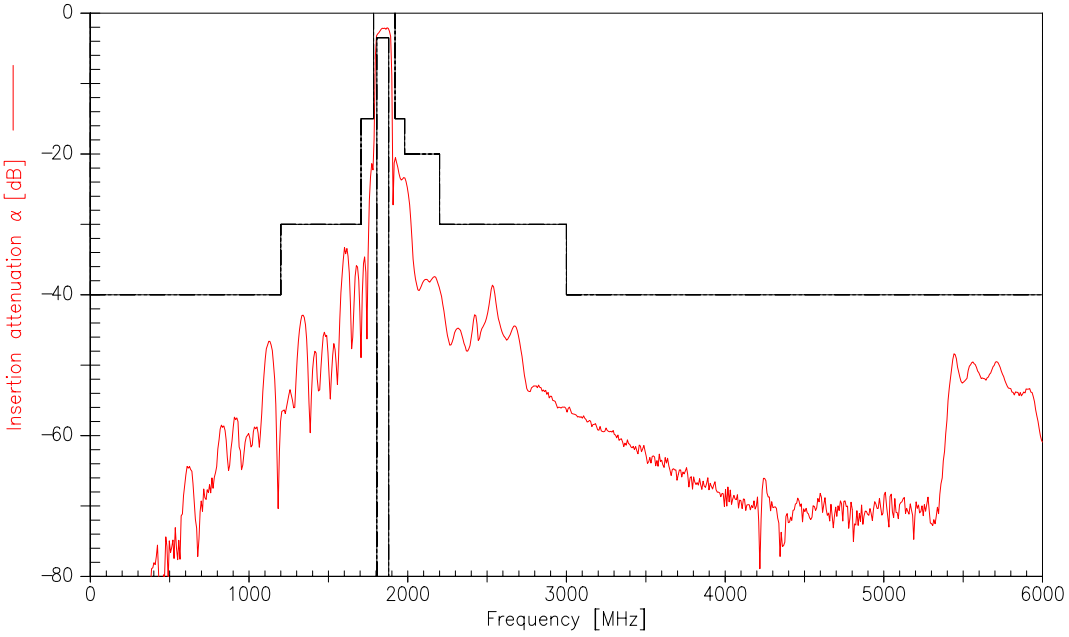
Operating Temperature Range: T = -30 to +85°C
Terminating source impedance: Z_S = 50Ω (unbalanced)
Terminating load impedance: Z_L = 200Ω (balanced) || 18nH

		min.	typ.	max.	
Center frequency	f_C	—	1842,5	—	MHz
Maximum insertion attenuation	α_{max}				
1805,0 ... 1880,0 MHz		—	3,5	4,0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1805,0 ... 1880,0 MHz		—	1,6	2,1	dB
Input VSWR					
1805,0 ... 1880,0 MHz		—	2,5	2,7	
Output VSWR					
1805,0 ... 1880,0 MHz		—	2,5	2,7	
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
1805,0 ... 1880,0 MHz		-12	—	+12	degree
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
1805,0 ... 1880,0 MHz		-1,4	—	1,4	dB
Attenuation	α				
0,0 ... 1200,0 MHz		40	47	—	dB
1200,0 ... 1705,0 MHz		30	36	—	dB
1705,0 ... 1785,0 MHz		9	12	—	dB
1920,0 ... 1980,0 MHz		10	20	—	dB
1980,0 ... 2200,0 MHz		20	22	—	dB
2200,0 ... 3000,0 MHz		30	38	—	dB
3000,0 ... 6000,0 MHz		40	48	—	dB

Transfer function (spec for 25˚C)



Transfer function (wideband)



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