EPCOS

SAW Components

Data Sheet B7847

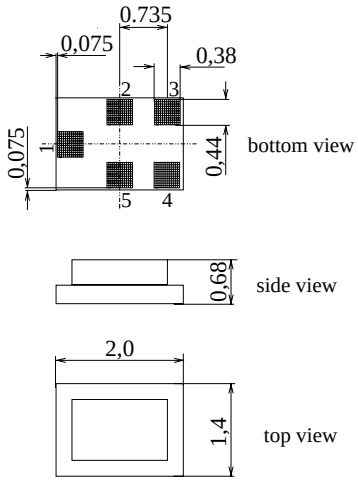
Low-Loss Filter for Mobile Communication 1960,0 MHz

Data Sheet SMD

Chip sized SAW package **QCS5E**

Features

- Low-loss RF filter for mobile telephone PCS systems, receive path
- Usable passband 60 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50Ω to 100Ω
- Low insertion loss and very high Tx blocking
- Package for **S**urface **M**ounted **T**echnology (**SMT**)



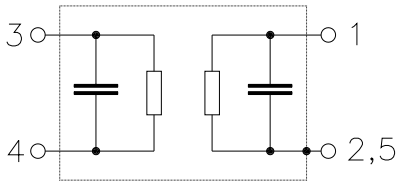
Terminals

- Gold-plated Ni

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
B7847	B39202-B7847-K410	C61157-A7-A131	F61074-V8151-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	P_S	10	dBm	

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

Characteristics

Operating temperature range: T = 25 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 100 Ω (balanced) || 22 nH

		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{max}				
1930,0 ... 1990,0 MHz		—	2,3	2,7	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0 ... 1990,0 MHz		—	0,9	1,3	dB
Input VSWR					
1930,0 ... 1990,0 MHz		—	2,0	2,4	
Output VSWR					
1930,0 ... 1990,0 MHz		—	2,1	2,5	
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
1930,0 ... 1990,0 MHz		-10	—	10	degree
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
1930,0 ... 1990,0 MHz		-1,4	—	1,4	dB
Attenuation	α				
10,0 ... 1600,0 MHz		40	50	—	dB
1600,0 ... 1850,0 MHz		30	35	—	dB
1850,0 ... 1910,0 MHz		24	27	—	dB
2040,0 ... 2200,0 MHz		25	29	—	dB
2200,0 ... 2800,0 MHz		30	39	—	dB
2800,0 ... 6000,0 MHz		40	47	—	dB

Characteristics

Operating temperature range: T = -30 ... 85 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 100 Ω (balanced) || 22 nH

		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{max}				
1930,6 ... 1989,4 MHz		—	2,3	2,9 [1]	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,6 ... 1989,4 MHz		—	0,9	1,7	dB
Input VSWR					
1930,6 ... 1989,4 MHz		—	2,0	2,4	
Output VSWR					
1930,6 ... 1989,4 MHz		—	2,1	2,5	
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
1930,6 ... 1989,4 MHz		-10	—	10	degree
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
1930,6 ... 1989,4 MHz		-1,4	—	1,4	dB
Attenuation	α				
10,0 ... 1600,0 MHz		40	50	—	dB
1600,0 ... 1850,6 MHz		30	35	—	dB
1850,6 ... 1909,4 MHz		24 [2]	27	—	dB
2040,0 ... 2200,0 MHz		25	29	—	dB
2200,0 ... 2800,0 MHz		30	39	—	dB
2800,0 ... 6000,0 MHz		40	47	—	dB

[1] T= +15°C to +65°C, 3,1 dB for T= -30°C to +85°C

[2] T= 0°C to +65°C, 20 dB for T= -30°C to +85°C

Characteristics

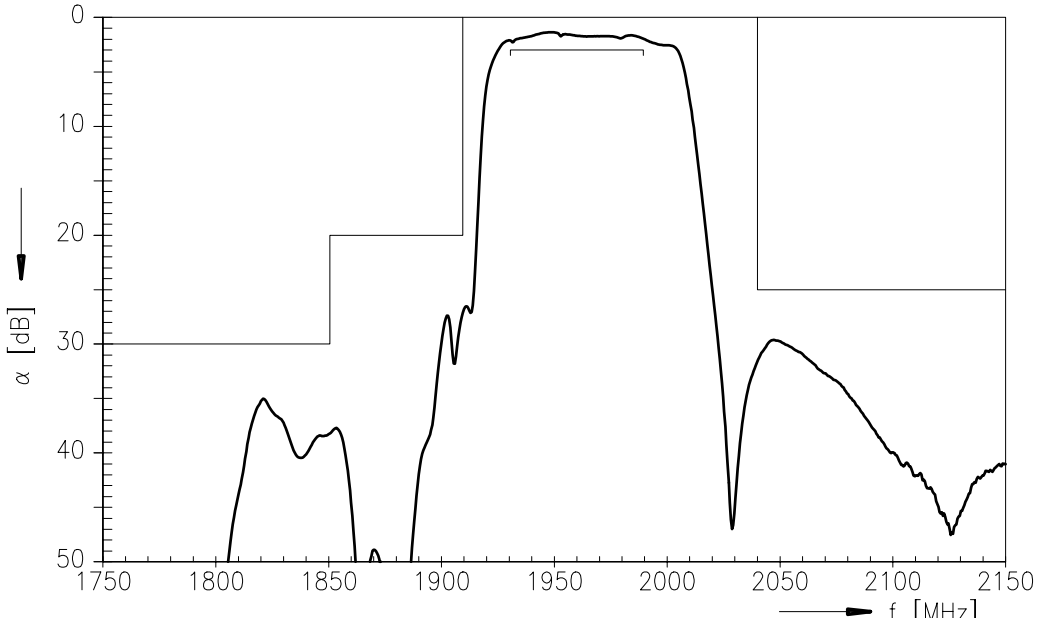
Operating temperature range: T = -30 ... 85 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 100 Ω (balanced) || 22 nH

		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{max}				
1930,0 ... 1990,0 MHz		—	2,3	2,9 [1]	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0 ... 1990,0 MHz		—	0,9	1,9	dB
Input VSWR					
1930,0 ... 1990,0 MHz		—	2,0	2,4	
Output VSWR					
1930,0 ... 1990,0 MHz		—	2,1	2,5	
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
1930,0 ... 1990,0 MHz		-10	—	10	degree
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
1930,0 ... 1990,0 MHz		-1,4	—	1,4	dB
Attenuation	α				
10,0 ... 1600,0 MHz		40	50	—	dB
1600,0 ... 1850,0 MHz		30	35	—	dB
1850,0 ... 1910,0 MHz		23 [2]	27	—	dB
2040,0 ... 2200,0 MHz		25	29	—	dB
2200,0 ... 2800,0 MHz		30	39	—	dB
2800,0 ... 6000,0 MHz		40	47	—	dB

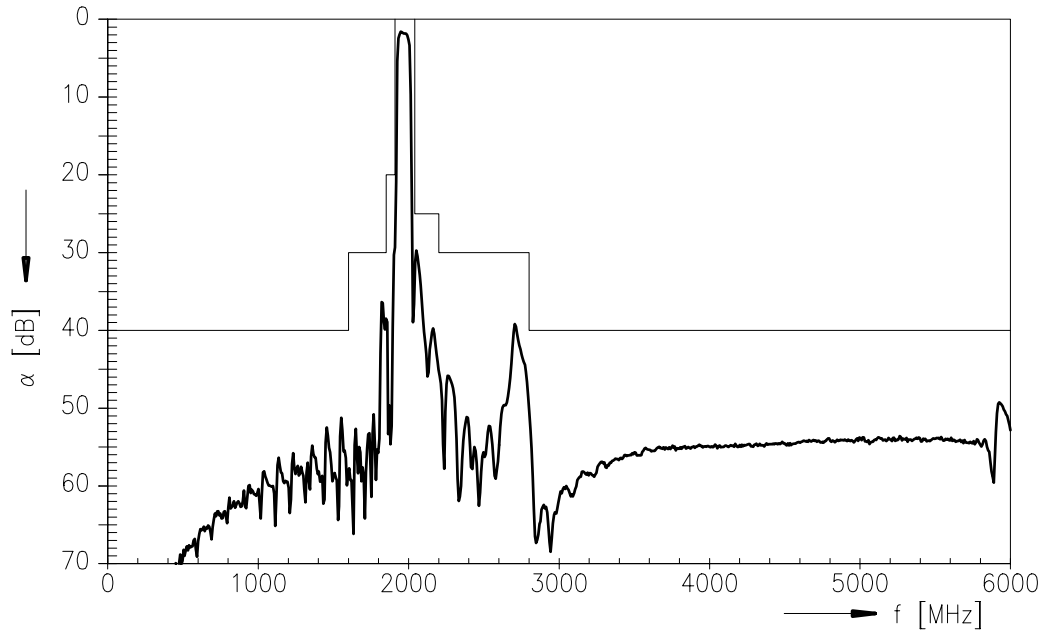
[1] T= +15°C to +65°C, 3,3 dB for T= -30°C to +85°C

[2] T= 0°C to +65°C, 18 dB for T= -30°C to +85°C

Transfer function (measured at room temperature):



Transfer function (wideband, measured at room temperature):



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