SAW Components

SAW RF low loss filter

Digital radio

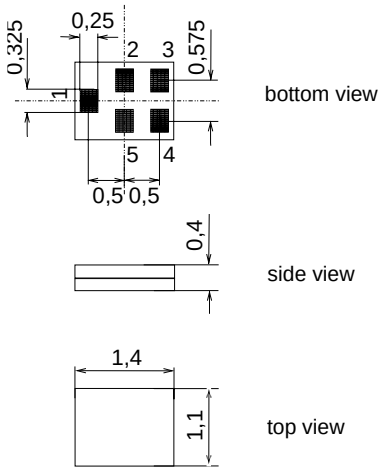
Series/type:	**B8753**
Ordering code:	**B39232-B8753-K610**
Date:	January 17, 2008
Version:	1.0

Application

- Low-loss RF filter for digital radio
- Impedance transformation from 50 Ω to 100 Ω
- Unbalanced to balanced operation
- Low insertion attenuation
- Low amplitude ripple
- Usable passband 12.5 MHz
- no matching network required

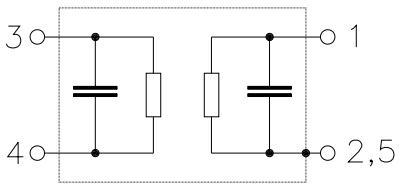
Features

- Package size 1.4 x1.1 x 0.4 mm³
- Maximum height of 0.45 mm
- Package code QCS5F
- RoHS compatible
- Approximate weight 0.003 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)



Pin configuration

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



Data sheet SMD

Characteristics

Temperature range for specification: T = +25 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 100 Ω (balanced)

		min.	typ. @ 25 °C	max.	
Nominal frequency	f_N	—	2338.755	—	MHz
Maximum insertion attenuation	α_{max}				
2332.5 ... 2345.0 MHz			2.0	2.5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
2332.5 ... 2345.0 MHz			0.2	0.8	dB
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
2332.5 ... 2345.0 MHz		–1.0	±0.3	1.0	dB
Output phase balance ($\phi(S_{31}) - \phi(S_{21})+180°$)					
2332.5 ... 2345.0 MHz		–7.0	±3.0	7.0	°
Input return loss		12	18	—	dB
Output return loss		12	16	—	dB
Attenuation	α				
88.0 ... 108.0 MHz		50	65	—	dB
880.0 ... 960.0 MHz		45	60	—	dB
1710.0 ... 1990.0 MHz		35	50	—	dB
2305.0 MHz		—	11	—	dB
2310.0 MHz		—	9	—	dB
2315.0 MHz		—	10	—	dB
2320.0 MHz		—	4.4	—	dB
2450.0 MHz		22	26	—	dB
3060.0 MHz		38	49	—	dB
Group delay ripple (p-p)					
2332.5 ... 2345.0 MHz		—	1.5	10	ns

Characteristics

Temperature range for specification: T = –20 ˚C to +85 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 100 Ω (balanced)

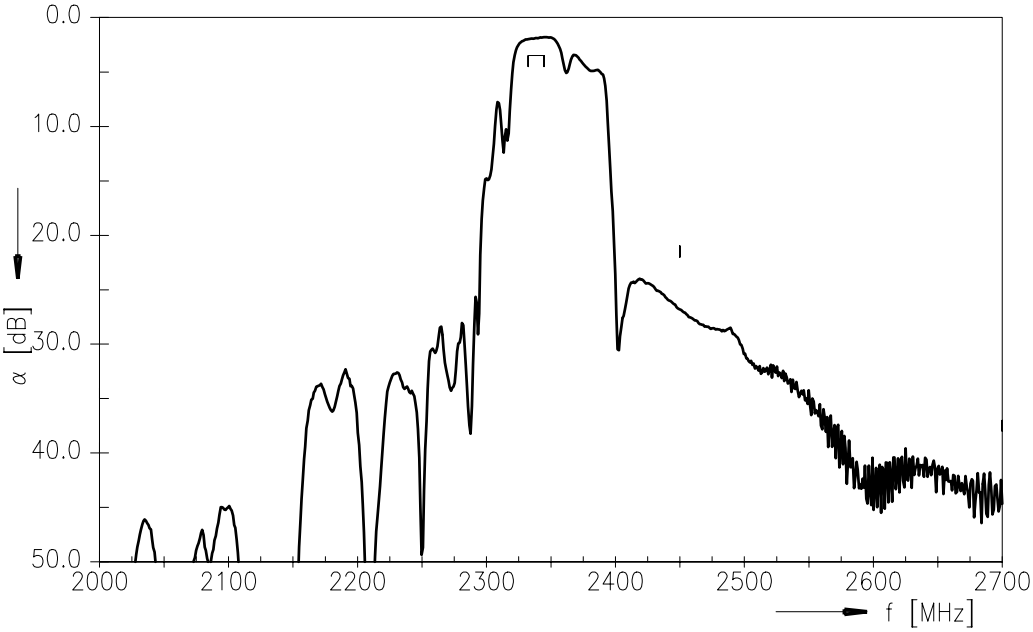
		min.	typ. @ 25 ˚C	max.	
Nominal frequency	f_N	—	2338.755	—	MHz
Maximum insertion attenuation	α_{max}				
2332.5 ... 2345.0 MHz			2.0	3.6	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
2332.5 ... 2345.0 MHz			0.2	1.7	dB
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
2332.5 ... 2345.0 MHz		–1.0	±0.3	1.0	dB
Output phase balance ($\phi(S_{31}) - \phi(S_{21})+180^\circ$)					
2332.5 ... 2345.0 MHz		–7.0	±3.0	7.0	°
Input return loss		12	18	—	dB
Output return loss		8	16	—	dB
Attenuation	α				
88.0 ... 108.0 MHz		50	65	—	dB
880.0 ... 960.0 MHz		45	60	—	dB
1710.0 ... 1990.0 MHz		35	50	—	dB
2305.0 MHz		—	11	—	dB
2310.0 MHz		—	9	—	dB
2315.0 MHz		—	10	—	dB
2320.0 MHz		—	4.4	—	dB
2450.0 MHz		22	26	—	dB
3060.0 MHz		38	49	—	dB
Group delay ripple (p-p)					
2332.5 ... 2345.0 MHz		—	1.5	15	ns

Maximum ratings

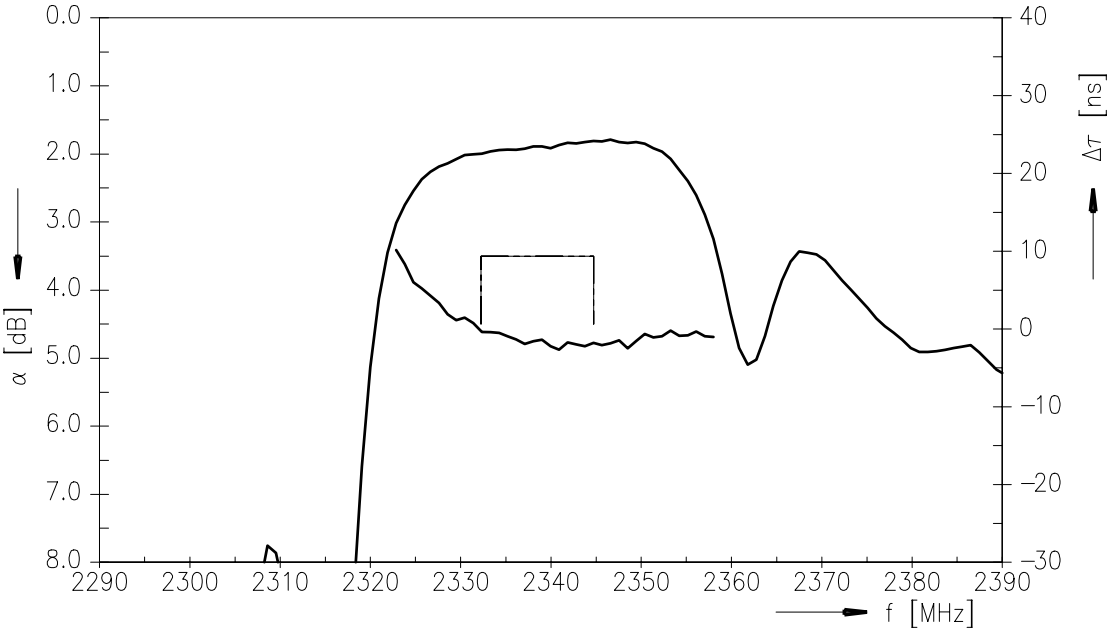
Operable temperature range	T	–30/+85	°C	
Storage temperature range	T_{stg}	–40/+85	°C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	50[1)]	V	machine model, 10 pulses
Input power at				
2332.5 MHz...2345.0 MHz	P_{IN}	tbd	dBm	source impedance 50 Ω

1) according to JESD22-A115A (machine model), 10 negative & 10 positive pulses.

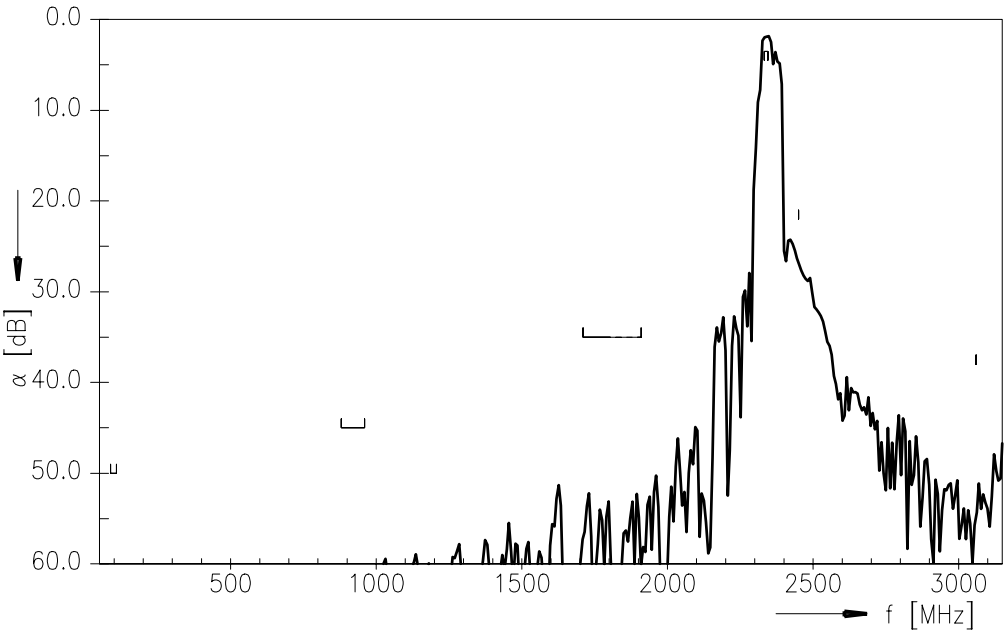
Transfer function



Transfer function (passband)



Transfer function (wide band)



References

Type	B8753
Ordering code	B39232-B8753-K610
Marking and package	C61157-A8-A1
Packaging	F61074-V8212-Z000
Date codes	L_1126
S-parameters	B8753_NB.s3p B8753_WB.s3p
Soldering profile	S_6001
RoHS compatible	defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment."
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.

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