

SAW Components

SAW filter

Automotive Telematics

Series/type: B4337

Ordering code: B39711B4337P810

Date: September 08, 2015

Version: 2.2

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B4337

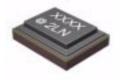
SAW Components 707.0 MHz **SAW filter**

Data sheet



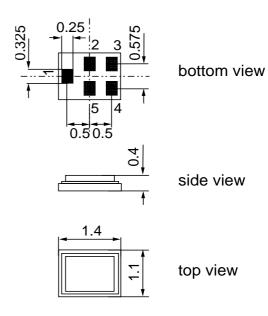
Application

- Low-loss RF filter for Band 12/17 system, transmit
- No matching network required for operation at 50 Ω
- Usable passband 18 MHz



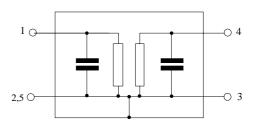
Features

- Package size 1.4 x 1.1 x 0.4 mm³
- Package code QCS5P
- RoHS compatible
- Approximate weight 0.003 g
- Package for Surface Mount Technology (SMT)
- Ni, gold-plated terminals
- AEC-Q200 qualified component family (operable temperature range -40°C to +85°C)
- Electrostatiic Sensitive Device (ESD)



Pin configuration

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





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Characteristics

Temperature range for specification: $T = -40 \,^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$

Terminating source impedance: $Z_S = 50 \Omega$ Terminating load impedance: $Z_L = 50 \Omega$

		min.	typ. @ 25 °C	max.	
Nominal frequency	f _c	_	707.0		MHz
Maximum insertion attenuation	on $lpha_{\sf max}$				
	6.0 MHz	_	2.2	3.3	dB
Amplitude ripple (p. p.)	A 01				
Amplitude ripple (p-p)	Δα				
698.0 71	6.0 MHz	_	1.0	2.1	dB
VSWR					
698.0 71	6.0 MHz	<u> </u>	1.8	2.1	
Attenuation	α				
	0.0 MHz	57	62		dB
600.0 66	0.0 MHz	48	60		dB
	5.0 MHz	18	32		dB
730.0 75	0.0 MHz	25	31		dB
750.0 220	0.0 MHz	40	50		dB
2200.0 350	0.0 MHz	38	46	_	dB



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Maximum ratings

Operable temperature range	T	-40/+85	°C
Storage temperature range	T_{stg}	-40/+85	°C
DC voltage	V_{DC}	0	V
Input power at	P_{IN}	15	dBm

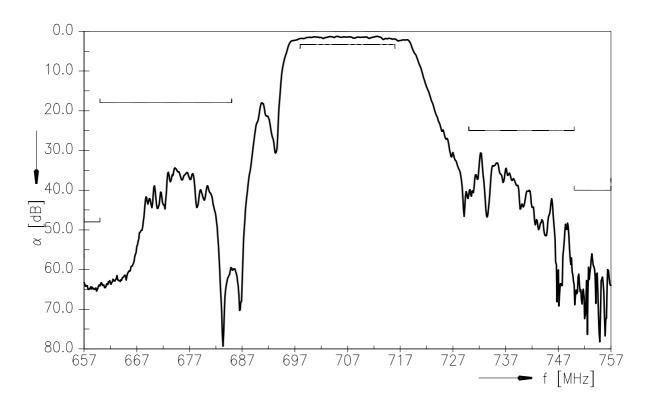


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SAW filter 707.0 MHz

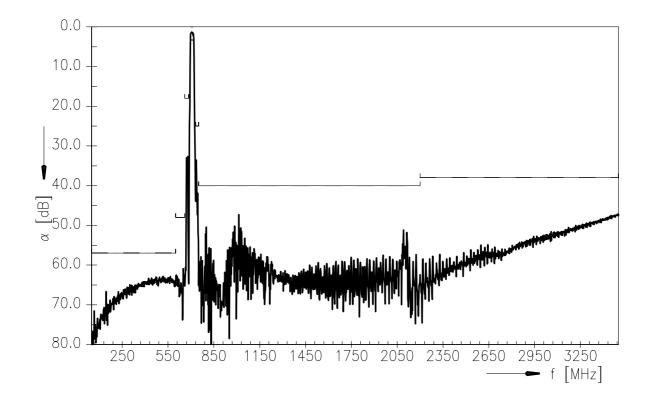
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Frequency response (narrowband)



Frequency response (wideband)





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SAW filter 707.0 MHz

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ESD protection of SAW filters

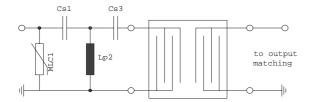
SAW filters are **E**lectro **S**tatic **D**ischarge sensitive devices. To reduce the probability of damages caused by ESD, special matching topologies have to be applied.

In general, "ESD matching" has to be ensured at that filter port, where electrostatic discharge is expected.

Electrostatic discharges predominantly appear at the antenna input of RF receivers. Therefore only the input matching of the SAW filter has to be designed to short circuit or to block the ESD pulse.

Below three figures show recommended "ESD matching" topologies.

For wideband filters the high-pass ESD matching structure needs to be at least of 3rd order to ensure a proper matching for any impedance value of antenna and SAW filter input. The required component values have to be determined from case to case.



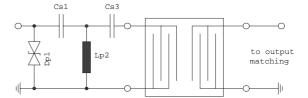


Fig. 1 MLC varistor plus ESD matching

Fig. 2 Suppressor diode plus ESD matching

In cases where minor ESD occur, following simplified "ESD matching" topologies can be used alternatively.

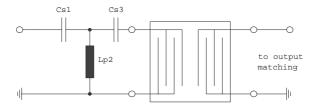


Fig. 3 3rd order high-pass structure for basic ESD protection

In all three figures the shunt inductor Lp2 could be replaced by a shorted microstrip with proper length and width. If this configuration is possible depends on the operating frequency and available pcb space.

Effectiveness of the applied ESD protection has to be checked according to relevant industry standards or customer specific requirements

For further information, please refer to EPCOS Application report:

"ESD protection for SAW filters".

This report can be found under www.epcos.com/rke.Click on "Applications Notes".



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References

Туре	B4337	
Ordering code	B39711B4337P810	
Marking and package	C61157-A8-A9	
Packaging	F61074-V8237-Z000	
Date codes	L_1126	
S-parameters	B4337_NB.s2p, B4337_WB.s2p see file header for port/pin assignment table	
Soldering profile	S_6001	
RoHS compatible	RoHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8th, 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases.	
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Published by EPCOS AG Systems, Acoustics, Waves Business Group P.O. Box 80 17 09, 81617 Munich, GERMANY

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