

SAW Components

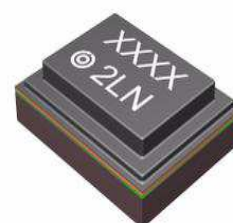
SAW Tx filter

Automotive telematics

Series/type:	B4341
Ordering code:	B39791B4341P810
Date:	October 27, 2014
Version:	2.0

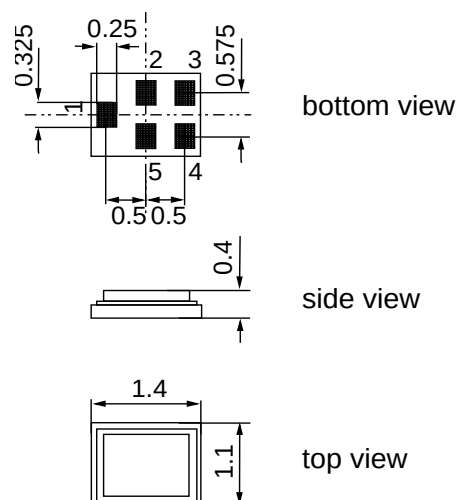
Application

- Low-loss RF filter for LTE Band 13+14 systems (Tx)
- No matching network required for operation at 50 Ω
- Usable passband 21 MHz



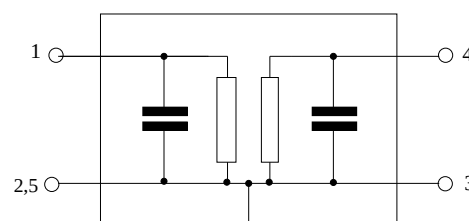
Features

- 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)
- **Electrostatic Sensitive Device (ESD)**



Pin configuration

- 1 Input
- 4 Output
- 2, 3, 5 To be ground



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787.5 MHz
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Characteristics

Temperature range for specification: $T = -40\text{ }^{\circ}\text{C to }+85\text{ }^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

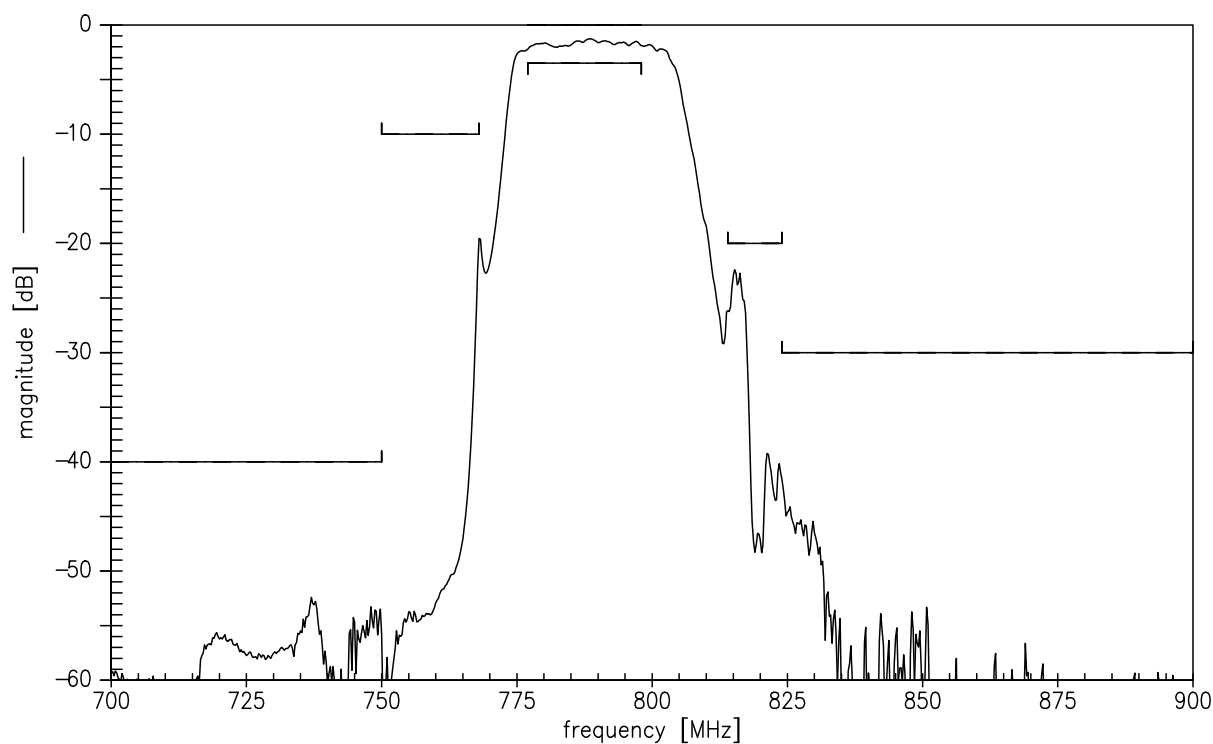
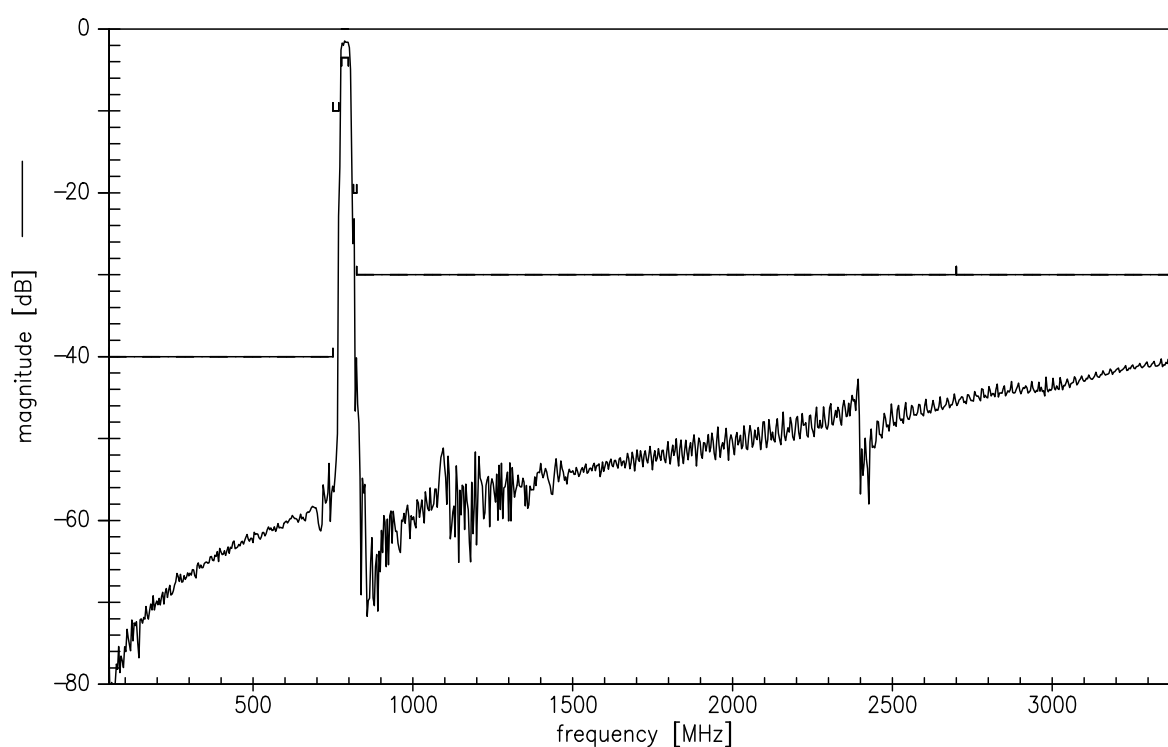
		min.	typ. @ 25 °C	max.	
Center frequency	f_c	—	787.5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$				
777.00 ... 798.00 MHz		—	2.4	3.5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
777.00 ... 798.00 MHz		—	1.0	2.0	dB
VSWR					
777.00 ... 798.00 MHz		—	2.0	2.4	
Absolute attenuation	α_{abs}				
50.00 ... 750.00 MHz		40	50	—	dB
750.00 ... 768.00 MHz		10	18	—	dB
814.00 ... 824.00 MHz		20	22	—	dB
824.00 ... 2700.00 MHz		30	39	—	dB
2700.00 ... 3400.00 MHz		30	37	—	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	
Source power	P _S			
777.00 ... 798.00 MHz		15	dBm	CW, 5000 hrs @ 55 °C

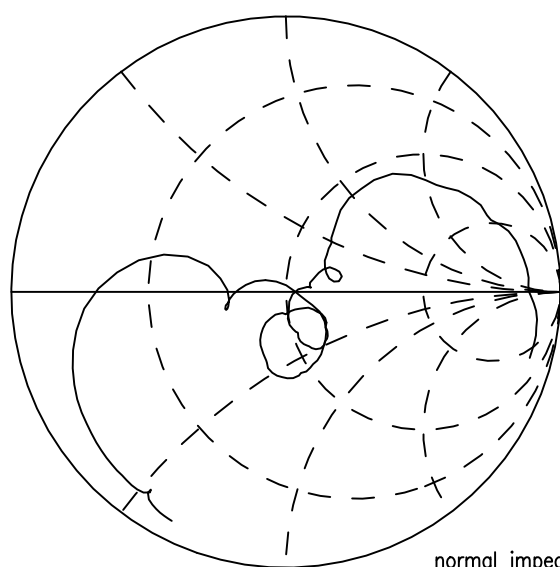
Transfer function (narrowband)

Transfer function (wideband)


Data sheet

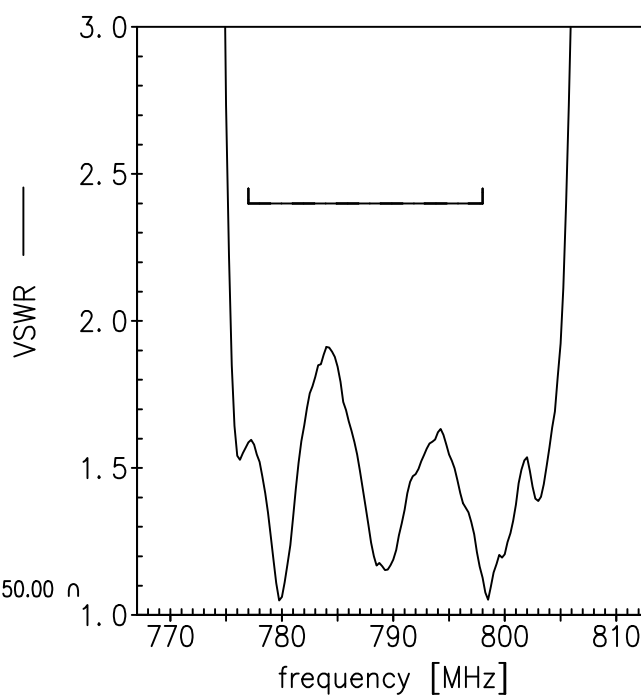
SMD

Smith charts

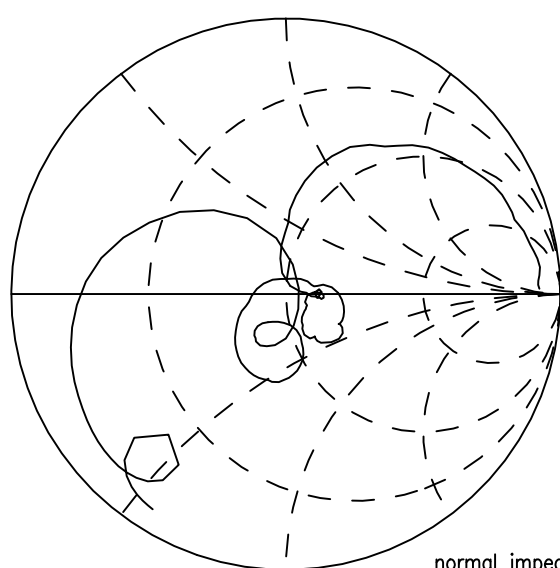
S₁₁ function



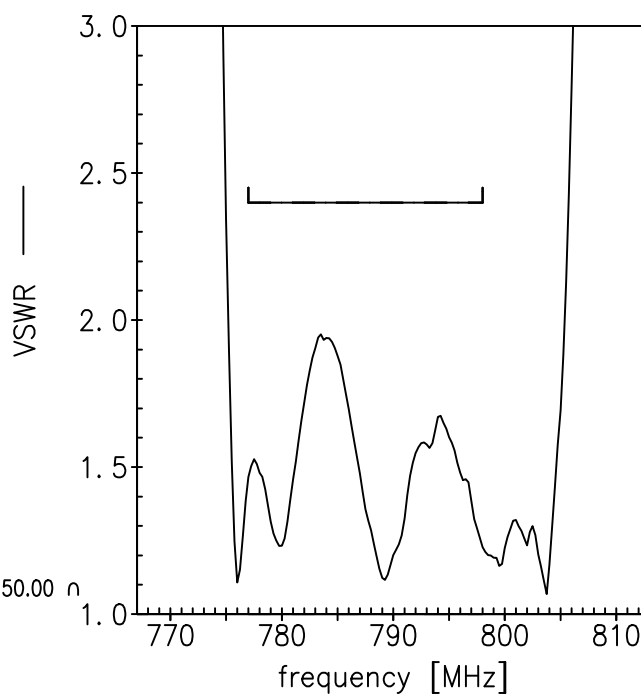
normal impedance: 50.00 Ω



S₂₂ function



normal impedance: 50.00 Ω



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 two figures show recommended “ESD matching” topologies.

Depending on the input impedance of the SAW filter and the source impedance, the needed component values have to be determined from case to case.

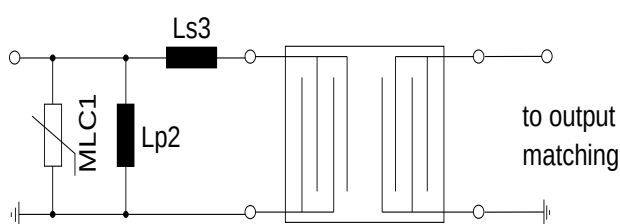


Fig. 1 MLC varistor plus ESD matching

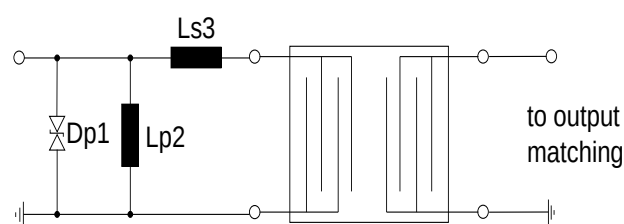


Fig. 2 Suppressor diode plus ESD matching

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

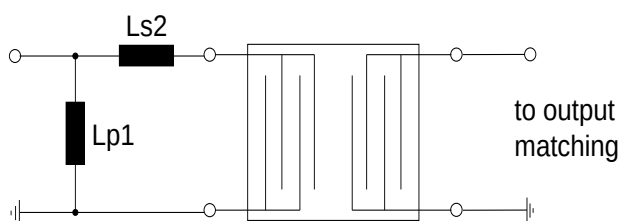


Fig. 3 shunt L – series L matching

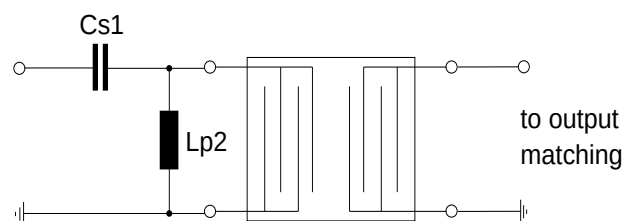


Fig. 4 series C – shunt L matching

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 “data sheets” and then “Applications” under category “Further information”.

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787.5 MHz

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References

Type	B4341
Ordering code	B39791B4341P810
Marking and package	C61157-A8-A9
Packaging	F61074-V8237-Z000
Date codes	L_1126
S-parameters	B4341_NB.s2p, B4341_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 8 th , 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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