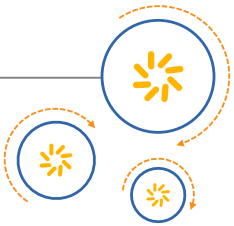
RF360 Europe GmbH

A Qualcomm – TDK Joint Venture



SAW Components

SAW RF filter

Short range devices

Series/type:	B3588
Ordering code:	B39921B3588U410
Date:	December 17, 2014
Version:	2.5

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RF360 Europe GmbH, Anzinger Str. 13, München, Germany

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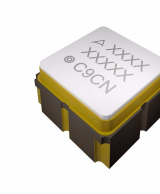
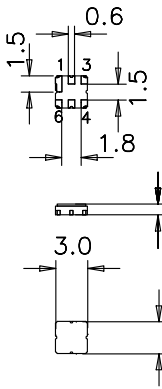
■ No matching network required for operation at 50 Ω



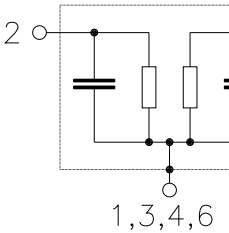
Features

- Package size 3.0 x 3.0 x 1.1 mm³
- Package code DCC6C
- RoHS compatible
- Approximate weight 0.037 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- Lead free soldering compatible with J - STD20C
- AEC-Q200 qualified component family
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)



Pin configuration

■ 2	Input
■ 5	Output
■ 1, 3, 4, 6	To be ground



Terminating load impedance: Z_L = 50 Ω

		min.	typ. @ 25 °C	max.
Center frequency	f_C	—	915.0	—
Maximum insertion attenuation	α_{max}			
902.00 ... 928.00 MHz		—	2.9	3.3
Amplitude ripple (p-p)	$\Delta\alpha$			
902.00 ... 928.00 MHz		—	0.9	1.5
VSWR				
902.00 ... 928.00 MHz		—	1.8:1	2.3:1
Relative attenuation (relative to α_{max})	α_{rel}			
10.00 ... 800.00 MHz		50	55	—
800.00 ... 845.00 MHz		45	50	—
845.00 ... 880.00 MHz		35	43	—
947.00 ... 992.00 MHz		15	22	—
992.00 ... 1020.00 MHz		35	45	—
1020.00 ... 1200.00 MHz		45	50	—

Terminating load impedance: Z_L = 50 Ω

		min.	typ. @ 25 °C	max.
Center frequency	f_C	—	915.0	—
Maximum insertion attenuation	α_{max}			
902.00 ... 928.00 MHz		—	2.9	3.5
Amplitude ripple (p-p)	$\Delta\alpha$			
902.00 ... 928.00 MHz		—	0.9	1.8
VSWR				
902.00 ... 928.00 MHz		—	1.8:1	2.4:1
Relative attenuation (relative to α_{max})	α_{rel}			
10.00 ... 800.00 MHz		50	55	—
800.00 ... 845.00 MHz		45	50	—
845.00 ... 880.00 MHz		33	43	—
947.00 ... 992.00 MHz		13	22	—
992.00 ... 1020.00 MHz		35	45	—
1020.00 ... 1200.00 MHz		45	50	—

Operable temperature range	T	–45/+125	˚C	
Storage temperature range	T_{stg}	–45/+125	˚C	
DC voltage	V_{DC}	6	V	
Source power	P_S	15	dBm	source impedance 5
Source power 902.00 ... 928.00 MHz	P_S	18	dBm	duty cycle 1:10, -40 ˚C to +85 ˚C

caused by ESD, special matching topologies have to be applied.
In general, “ESD matching” has to be ensured at that filter port, where electrostatic d
expected.
Electrostatic discharges predominantly appear at the antenna input of RF receivers.
only the input matching of the SAW filter has to be designed to short circuit or to blo
pulse.

Below two figures show recommended “ESD matching” topologies.

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

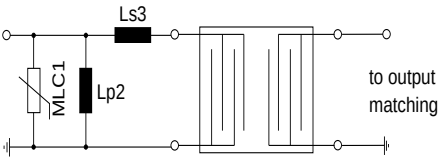


Fig. 1 MLC varistor plus ESD matching

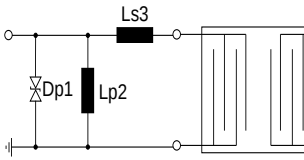


Fig. 2 Suppressor diode plus E

In cases where minor ESD occur, following simplified “ESD matching” topologies ca
alternatively.

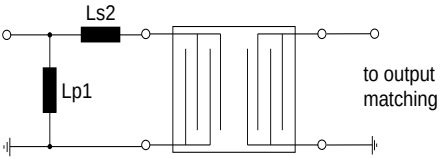


Fig. 3 shunt L – series L matching

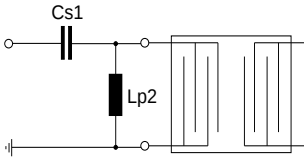
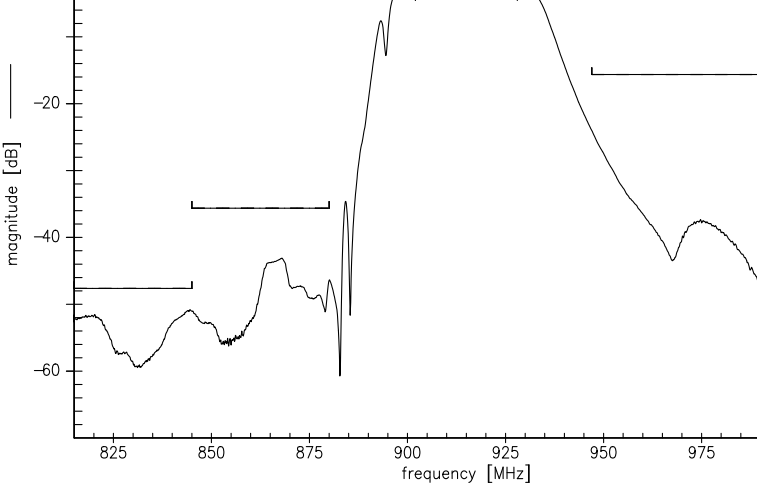


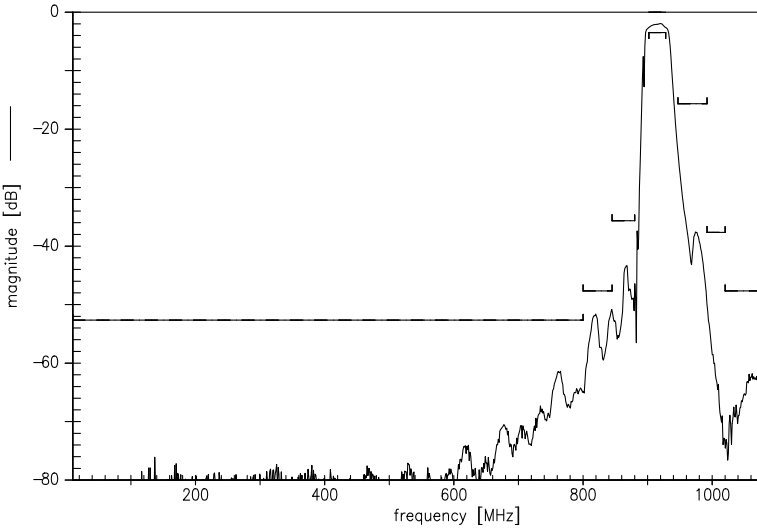
Fig. 4 series C – shunt L matcl

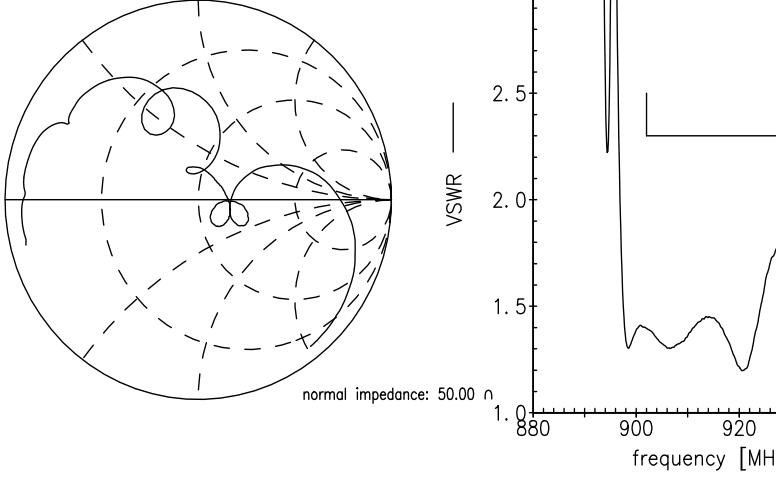
Effectiveness of the applied ESD protection has to be checked according to relevan
standards or customer specific requirements.

For further information, please refer to EPCOS Application report:
“**ESD protection for SAW filters**”. This report can be found under www.epcos.com
“data sheets” and then “Applications” under category “Further information”.

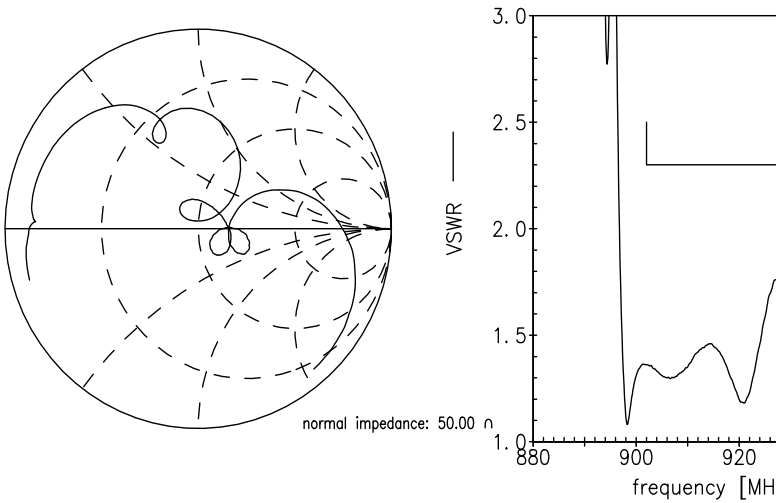


Transfer function (wideband)





S_{22} function



Type	B3588
Ordering code	B39921B3588U410
Marking and package	C61157-A7-A67
Packaging	F61074-V8168-Z000
Date codes	L_1126
S-parameters	B3588_NB.s2p, B3588_WB.s2p See file header for port/pin assignment table.
Soldering profile	S_6001
RoHS compatible	RoHS-compatible means that products are compa requirements according to Art. 4 (substance restri rective 2011/65/EU of the European Parliament a Council of June 8th, 2011, on the restriction of the u hazardous substances in electrical and electronic ("Directive") with due regard to the application of ex per Annex III of the Directive in certain cases.
Matching coils	See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm for a large variety of matching coils.

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