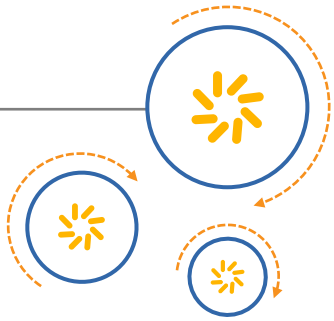
RF360 Europe GmbH

A Qualcomm – TDK Joint Venture



SAW Components

SAW RF filter for base stations

Band 38 TD LTE

Series/type:	B5308
Ordering code:	B39262B5308U410
Date:	August 28, 2014
Version:	2.2

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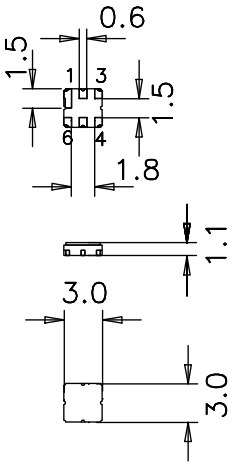
Application

- RF filter for Band 38 TD LTE
- Unbalanced to unbalanced operation
- Low amplitude ripple
- Usable passband 50 MHz
- No matching required for operation at 50 Ω

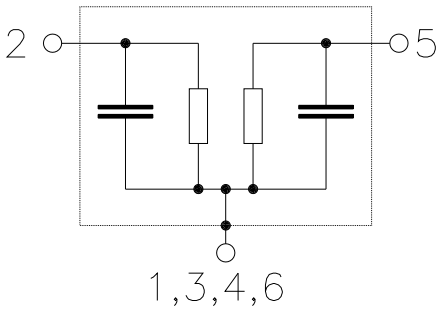
Features

- 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
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- **M**oisture **S**ensitivity **L**evel 1
- Filter surface passivated



Pin configuration

- 2 Input
- 5 Output
- 1, 3, 4, 6 To be grounded



Data sheet SMD

Characteristics

Temperature range for specification: T = –30 ˚C to +100 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ. @ 25 ˚C	max.	
Nominal frequency	f_N	—	2595.0	—	MHz
Minimum insertion attenuation	α_{min}				
2570.0 ... 2620.0 MHz		—	1.9	2.3	dB
Maximum insertion attenuation	α_{max}				
2570.0 ... 2620.0 MHz		—	2.4	2.8	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
2570.0 ... 2620.0 MHz		—	0.5	1.2	dB
Amplitude ripple (in any segment of 5 MHz)	$\Delta\alpha$				
2570.0 ... 2620.0 MHz		—	0.4	0.8	dB
Input VSWR					
2570.0 ... 2620.0 MHz		—	1.6:1	2.2:1	
Output VSWR					
2570.0 ... 2620.0 MHz		—	1.7:1	2.2:1	
Phase ripple (p-p)	$\Delta\varphi$				
2570.0 ... 2620.0 MHz		—	5	20	°
Absolute group delay	τ				
2570.0 ... 2620.0 MHz		—	15	50	ns
Group delay ripple (p-p)	$\Delta\tau$				
2570.0 ... 2620.0 MHz		—	5	30	ns
Error vector magnitude[1)]	EVM				
2570.0 ... 2620.0 MHz		—	0.8	2.5	%
Relative attenuation (to α_{min})[2)]	α_{rel}				
60.0 ... 120.0 MHz		40	60	—	dB
300.0 ... 500.0 MHz		40	50	—	dB
850.0 ... 880.0 MHz		40	49	—	dB

		min.	typ. @ 25 °C	max.	
1280.0 ... 1315.0	MHz	40	55	—	dB
1850.0 ... 1910.0	MHz	42	50	—	dB
2030.0 ... 2140.0	MHz	35	46	—	dB
2330.0 ... 2440.0	MHz	35	40	—	dB
2440.0 ... 2520.0	MHz	10	20	—	dB
2670.0 ... 2730.0	MHz	10	20	—	dB
2730.0 ... 2830.0	MHz	30	35	—	dB
Temperature Drift					
high temperature[3]					
2570.0 ... 2620.0	MHz	—	0.2	0.5	dB
low temperature[4]					
2570.0 ... 2620.0	MHz	—	0.3	0.5	dB

1) Evm calculation based on root raised cosine filtered QPSK signal (fc_{RRC} within 2572.5 ... 2617.5 MHz, bw_{RRC}=3.84 MHz)
2) Attenuation depends on PCB layout

3) $T_{25°C}$ is transmission at 25°C in dB, $T_{100°C}$ at 100°C in dB

$$tempdrift_{hightemp} = \left| \frac{\max(T_{25°C} - T_{100°C}) - \min(T_{25°C} - T_{100°C})}{2} \right|$$

4) $T_{25°C}$ is transmission at 25°C in dB, $T_{-30°C}$ at -30°C in dB

$$tempdrift_{lowtemp} = \left| \frac{\max(T_{25°C} - T_{-30°C}) - \min(T_{25°C} - T_{-30°C})}{2} \right|$$

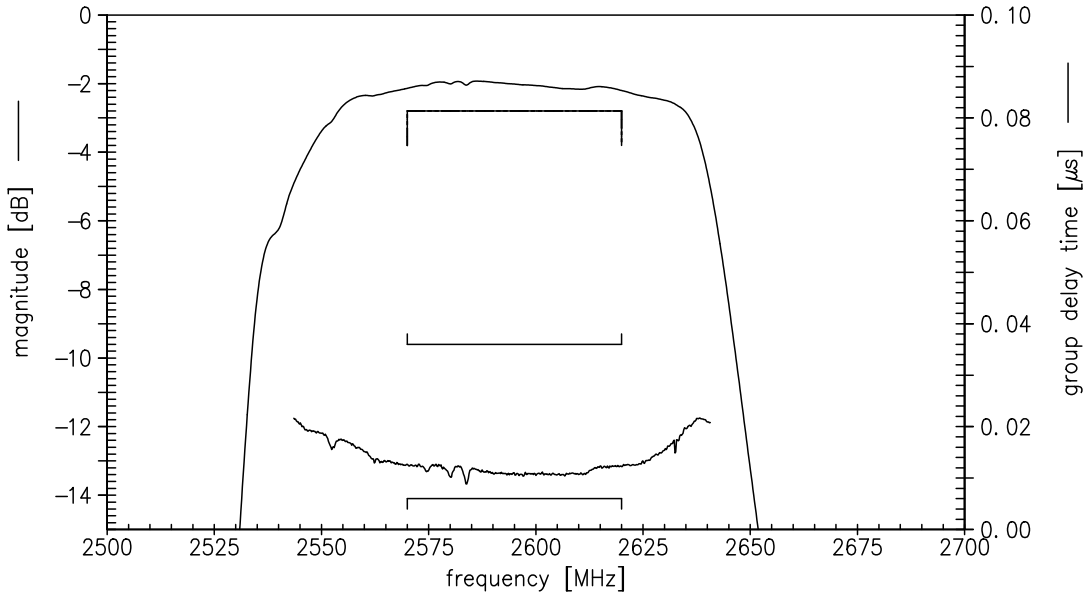
Maximum ratings

Operable temperature range	T	–40/+100	˚C	
Storage temperature range	T_{stg}	–40/+100	˚C	
DC voltage	V_{DC}	0	V	
ESD voltage	V_{ESD}	50[1)]	V	Machine Model
		150[2)]	V	Human Body Model
Input power				
2570.0 ... 2620.0 MHz	P_{IN}	22	dBm	cw, 24 h, 85 ˚C

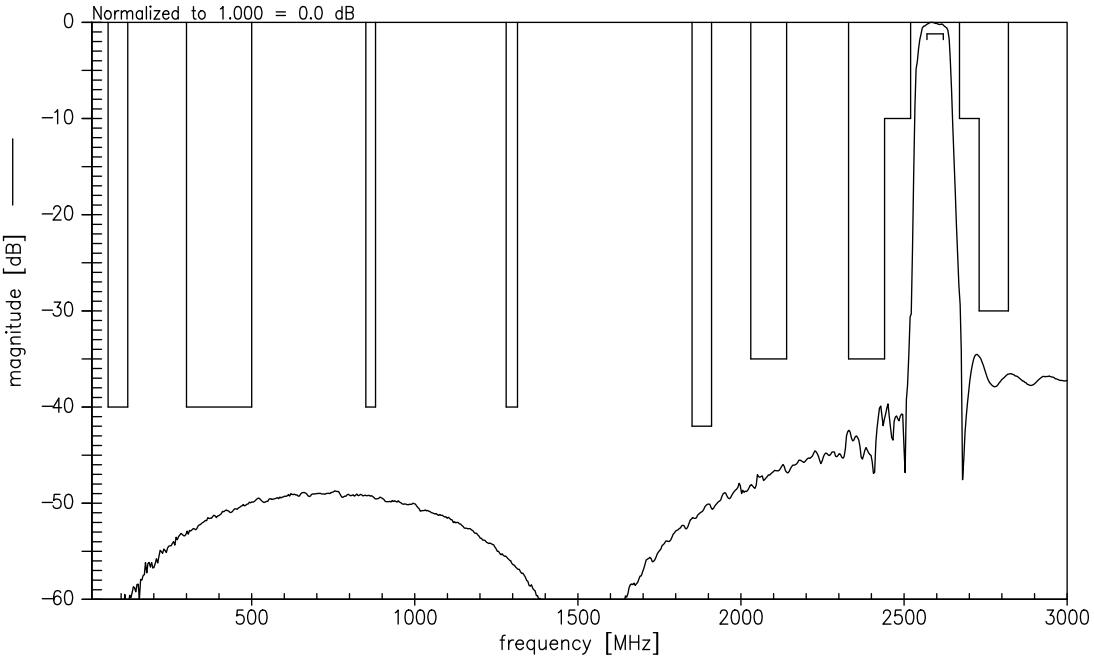
1) acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses

2) acc. to JESD22-A114F (HBM - Human Body Model), 1 negative & 1 positive pulses

Transfer function (S21, narrowband)

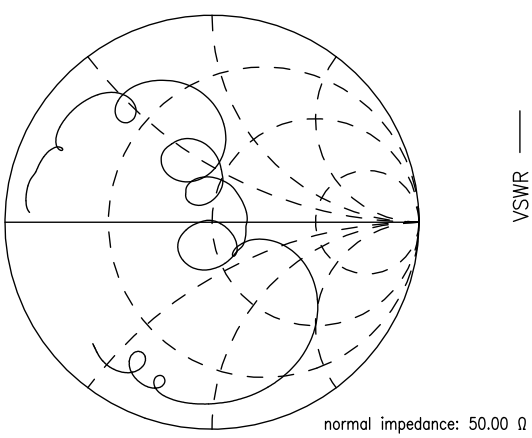


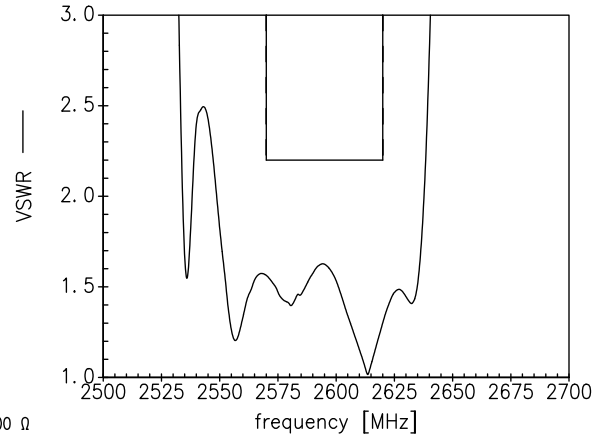
Transfer function (S21, wideband)



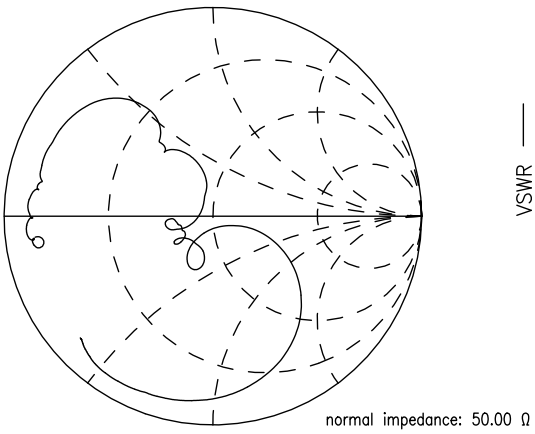
Smith charts

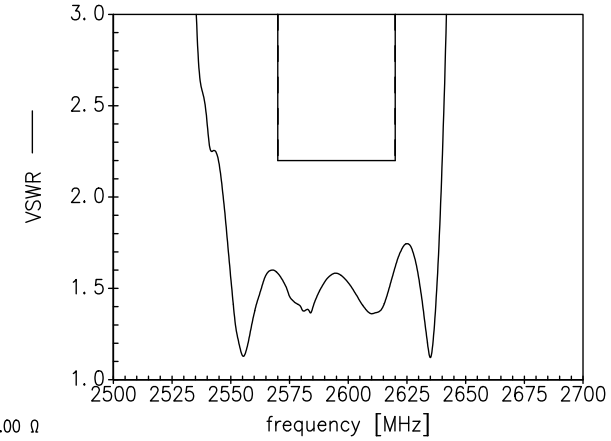
S_{11} function





S_{22} function





References

Type	B5308
Ordering code	B39262B5308U410
Marking and package	C61157-A7-A67
Packaging	F61074-V8228-Z000
Date codes	L_1126
S-parameters	B5308_NB.s2p B5308_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.
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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