



SAW Components

SAW RF filter for base stations

TD-LTE Band 41

Series/type: B5303
Ordering code: B39262B5303U410

Date: Apr 30, 2014
Version: 2.1

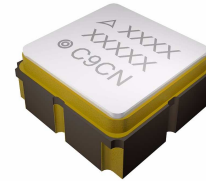
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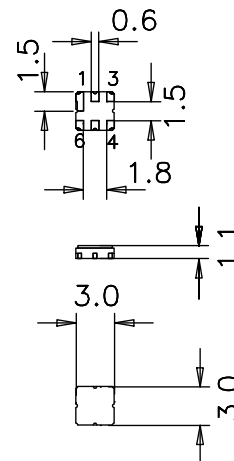
Data sheet

Application

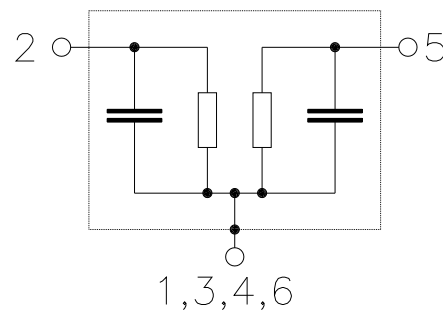
- RF filter for base stations
- Unbalanced to unbalanced operation
- Usable passband 194 MHz
- Matching required for operation at 50 Ω


Features

- Package size 3.0 x 3.0 x 1.1 mm³
- Package code DCC6C
- RoHS compatible
- Approximate weight 0.037 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitivity Level 1**
- Filter surface passivated


Pin configuration

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



SAW Components
B5303
SAW RF filter
2593.0 MHz
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Characteristics

Temperature range for specification:	T = -40 °C to +85 °C
Terminating source impedance:	Z _S = 50 Ω and matchig network
Terminating load impedance:	Z _L = 50 Ω and matchig network

		min.	typ. @ 25 °C	max.	
Nominal frequency	f _N	—	2593.0	—	MHz
Minimum insertion attenuation (including matching network)	α _{min}	—	2.0	—	dB
Maximum insertion attenuation 2496.0 ... 2690.0 MHz	α _{max}	—	4.0	5.0	dB
Amplitude ripple (p-p) 2496.0 ... 2690.0 MHz	Δα	—	2.0	3.0	dB
Input VSWR 2496.0 ... 2690.0 MHz		—	2.2:1	2.5:1	
Output VSWR 2496.0 ... 2690.0 MHz		—	2.2:1	2.5:1	
Group delay ripple (p-p) 2496.0 ... 2690.0 MHz	Δτ	—	10	20	ns
Relative attenuation (relative to α_{min})	α _{rel}				
10.0 ... 2200.0 MHz		22.0	28.0	—	dB
2200.0 ... 2230.0 MHz		20.0	26.0	—	dB
2230.0 ... 2300.0 MHz		15.0	21.0	—	dB
2300.0 ... 2400.0 MHz		12.0	18.0	—	dB
2400.0 ... 2466.0 MHz		1.5	2.6	—	dB
2466.0 ... 2486.0 MHz		0.9	1.4	—	dB
2700.0 ... 2720.0 MHz		1.0	1.8	—	dB
2720.0 ... 2732.0 MHz		1.5	2.7	—	dB
2732.0 ... 2803.2 MHz		2.3	7.0	—	dB
2803.2 ... 2810.0 MHz		17.0	23.0	—	dB
2810.0 ... 3000.0 MHz		20.0	24.0	—	dB
3000.0 ... 3181.5 MHz		12.0	18.0	—	dB
3181.5 ... 3800.0 MHz		13.0	19.0	—	dB
3800.0 ... 6000.0 MHz		15.0	21.0	—	dB
6000.0 ¹⁾ ... 7000.0 MHz		—	35.0	—	dB
7000.0 ... 8000.0 MHz		—	15.0	—	dB

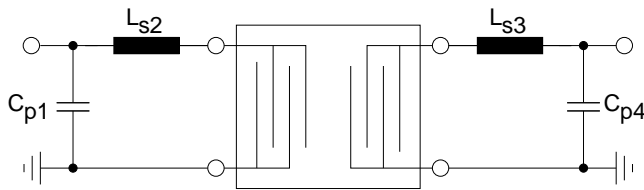
¹⁾ Final electrical test ends at 6000.0 MHz

Maximum ratings

Operable temperature range	T	-40/+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 Human Body Model
		250 ²⁾	V	
Input power		P _{IN}		cw 100000h, 85°C cw, 2h, 85°C
		2496.0 ... 2690.0 MHz	23.0	dBm

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

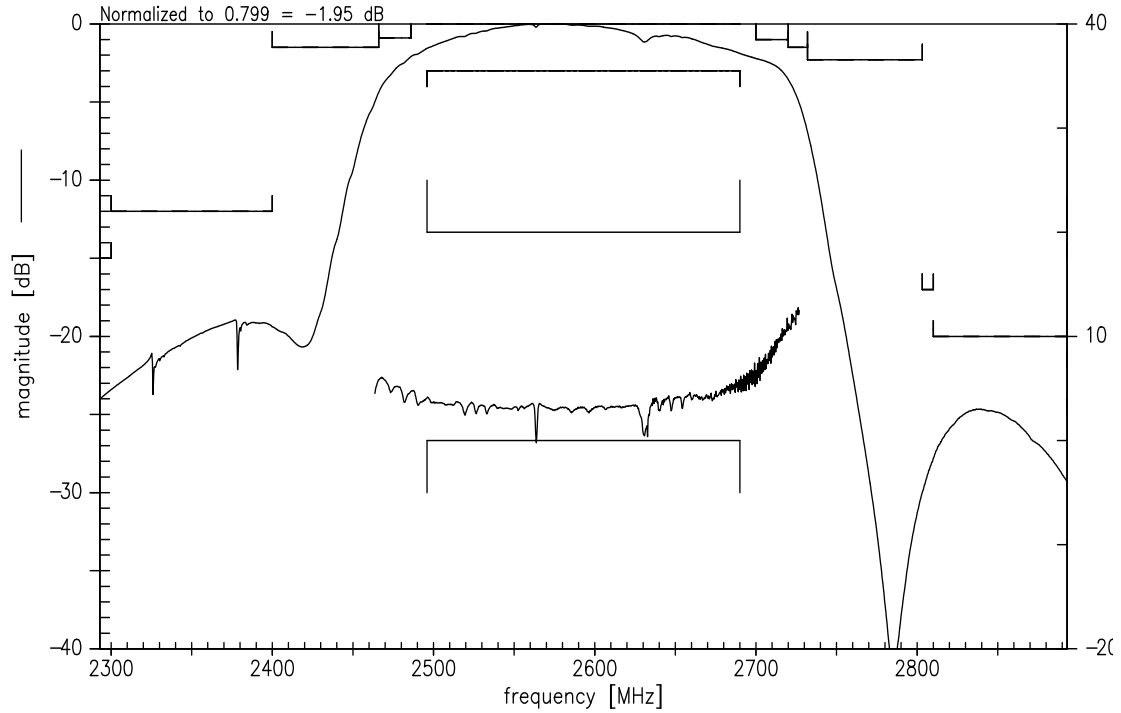
Matching network to 50 Ω single ended input and output


$C_{p1} = 1.2 \text{ pF}$
 $L_{s2} = 0.4 \text{ nH}$
 $L_{s3} = 0.7 \text{ nH}$
 $C_{p4} = 1.5 \text{ pF}$

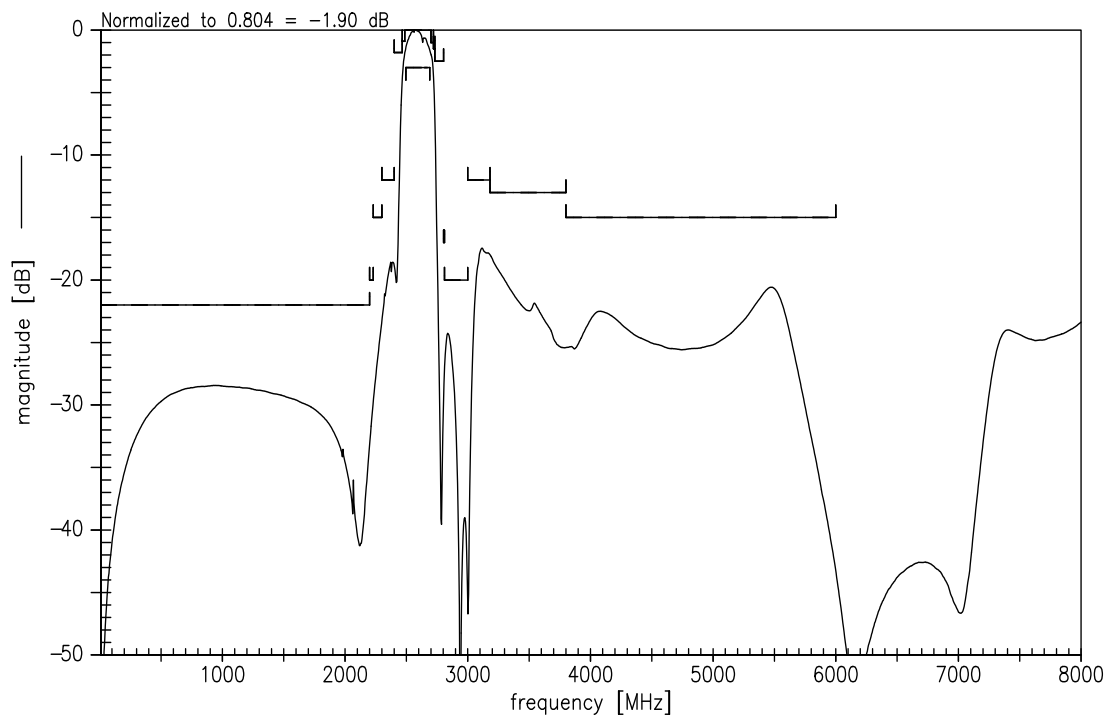
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Transfer function (S21,narrow band)



Transfer function (S21, wide band)



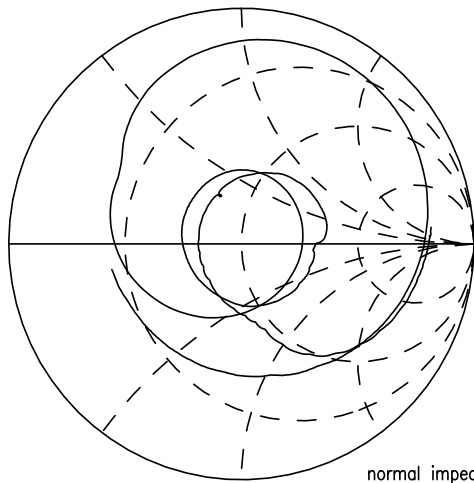
Please read *cautions and warnings* and *important notes* at the end of this document.

Data sheet

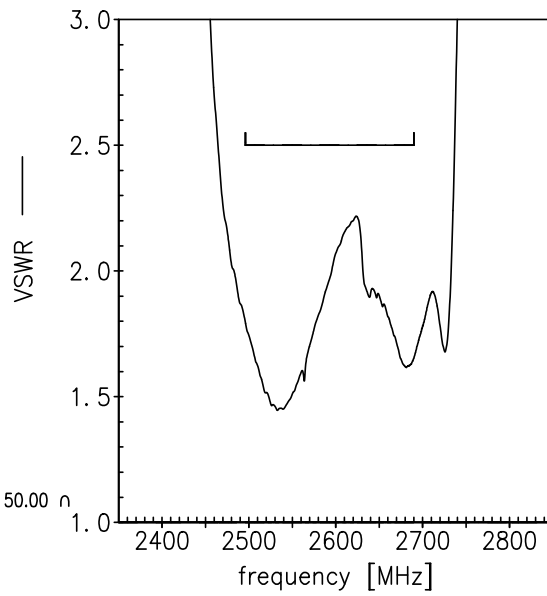
SMD

Smith charts

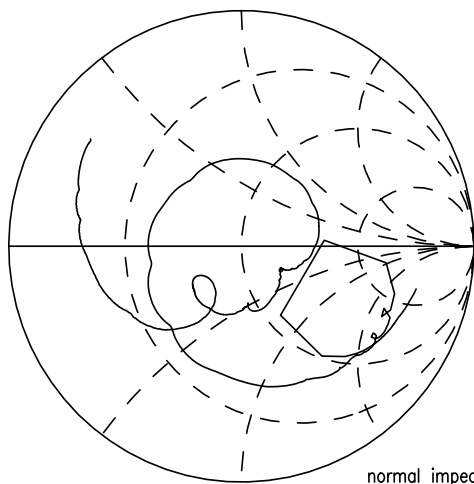
S₁₁ function



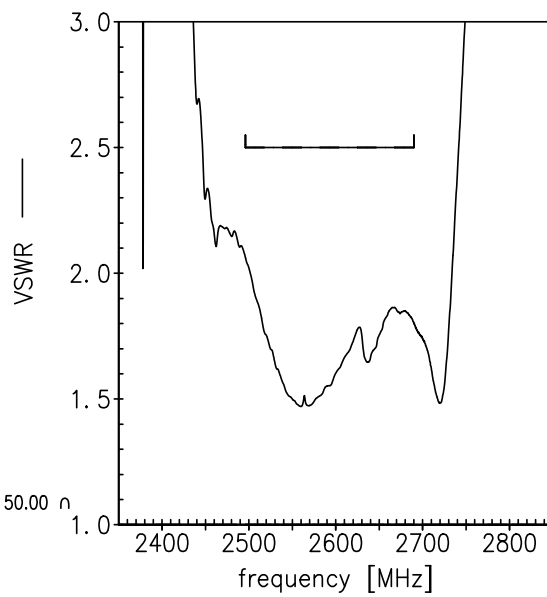
normal impedance: 50.00 Ω



S₂₂ function



normal impedance: 50.00 Ω



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SAW RF filter	2593.0 MHz

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References

Type	B5303
Ordering code	B39262B5303U410
Marking and package	C61157-A7-A67
Packaging	F61074-V8228-Z000
Date codes	L_1126
S-parameters	B5303_NB.s2p B5303_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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