



SAW Components

SAW RF filter for base stations

Band 28 downlink

Series/type: B5199

Ordering code: B39781B5199U410

Date: October 31, 2013

Version: 2.0

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SAW Components

B5199

SAW RF filter

780.50 MHz

Data sheet

SMD

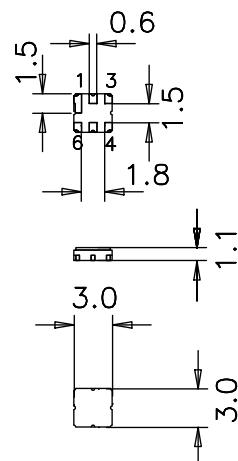
Application

- RF filter for E-UTRA band 28 downlink
- Unbalanced to unbalanced operation
- Low amplitude ripple
- Usable passband 45 MHz
- Matching required for operation at $50\ \Omega$



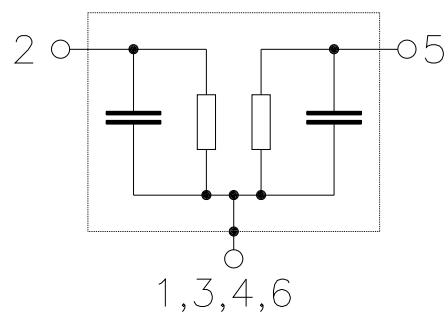
Features

- Package size $3.0 \times 3.0 \times 1.1\ \text{mm}^3$
- 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



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

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Data sheet



Characteristics

Temperature range for specification: $T = -40^{\circ}\text{C}$ to -20°C

Terminating source impedance: $Z_S = 50\Omega$ and matching network

Terminating load impedance: $Z_L = 50\Omega$ and matching network

			min.	typ. @ 25 °C	max.	
Nominal frequency		f_N	—	780.5	—	MHz
Maximum insertion attenuation		α_{max}	—	3.0	4.5	dB
758.0 ... 803.0	MHz					
Amplitude ripple (p-p)		$\Delta\alpha$	—	1.4	2.8	dB
758.0 ... 803.0	MHz					
Input VSWR			—	1.8:1	2.5:1	
758.0 ... 803.0	MHz					
Output VSWR			—	1.6:1	2.5:1	
758.0 ... 803.0	MHz					
Attenuation		α	30	37	—	dB
703.0 ... 738.0	MHz					
738.0 ... 748.0	MHz		30	33	—	dB

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Characteristics

Temperature range for specification: $T = -20^{\circ}\text{C}$ to $+85^{\circ}\text{C}$

Terminating source impedance: $Z_S = 50\Omega$ and matching network

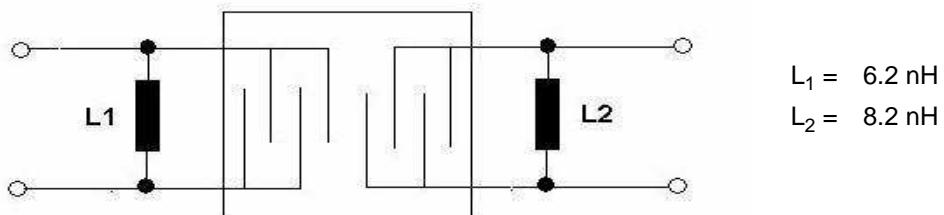
Terminating load impedance: $Z_L = 50\Omega$ and matching network

			min.	typ. @ 25 °C	max.	
Nominal frequency		f_N	—	780.5	—	MHz
Maximum insertion attenuation		α_{max}	—	3.0	4.0	dB
758.0 ... 803.0	MHz					
Amplitude ripple (p-p)		$\Delta\alpha$	—	1.4	2.3	dB
758.0 ... 803.0	MHz					
Input VSWR			—	1.8:1	2.5:1	
758.0 ... 803.0	MHz					
Output VSWR			—	1.6:1	2.5:1	
758.0 ... 803.0	MHz					
Attenuation		α	30	37	—	dB
703.0 ... 738.0	MHz					
738.0 ... 748.0	MHz		30	33	—	dB

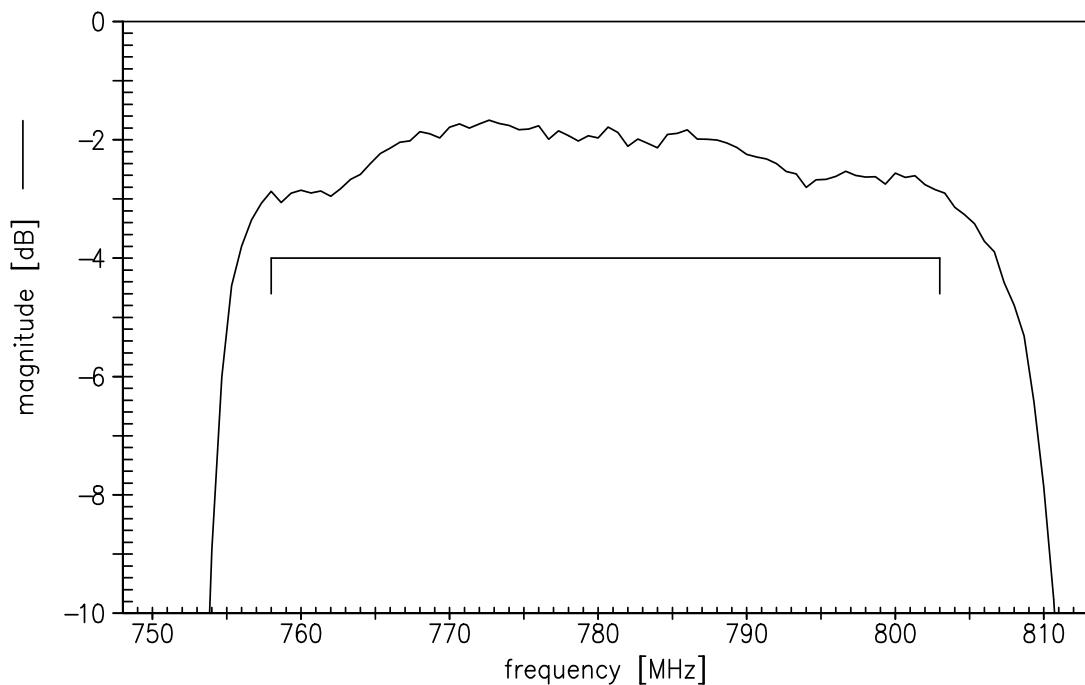
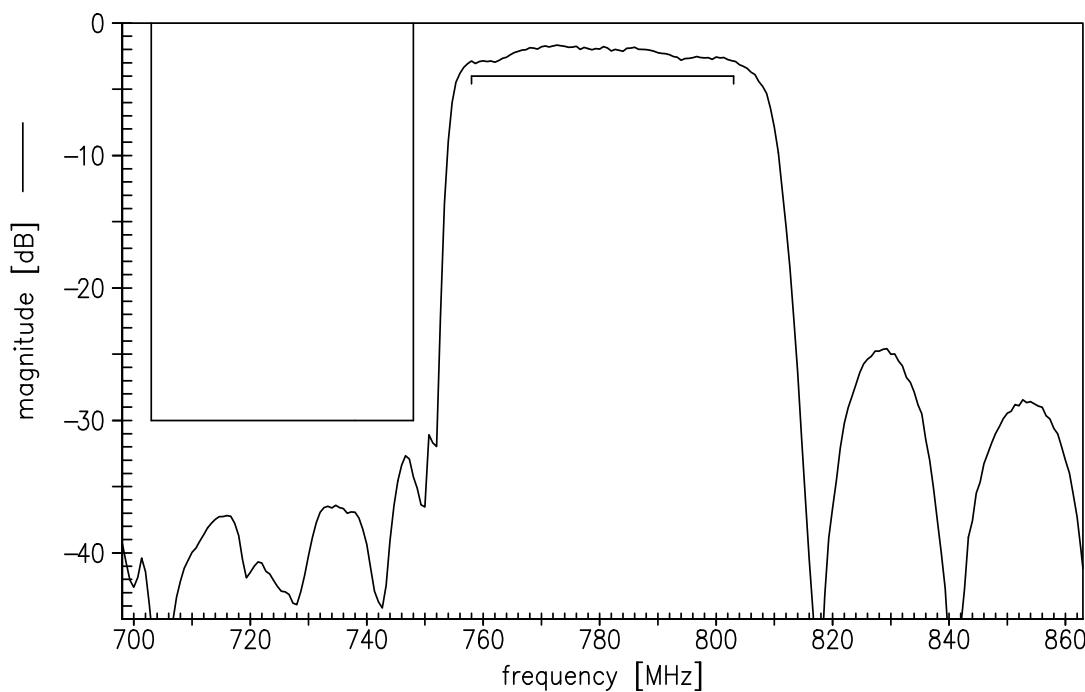
Maximum ratings

Operable temperature range	T	-40/+85	$^{\circ}\text{C}$	
Storage temperature range	T_{stg}	-40/+85	$^{\circ}\text{C}$	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	100 ¹⁾	V	Machine Model
Input power				
758.0 ... 803.0 MHz	P_{IN}	15	dBm	cw, 100000 h, 85 $^{\circ}\text{C}$
758.0 ... 803.0 MHz	P_{IN}	20	dBm	cw, 1000 h, 85 $^{\circ}\text{C}$

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

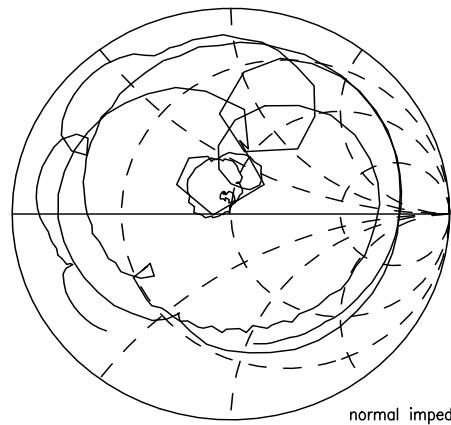
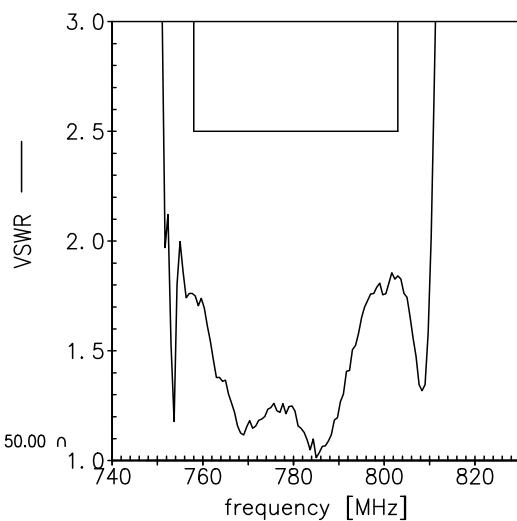
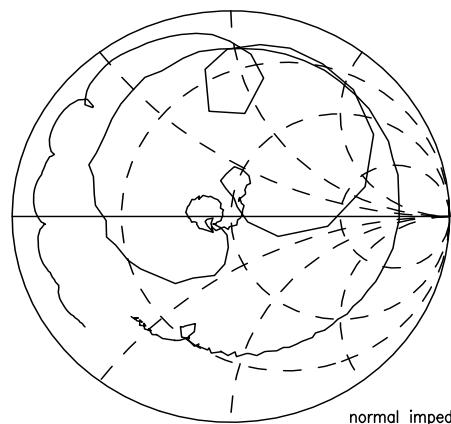
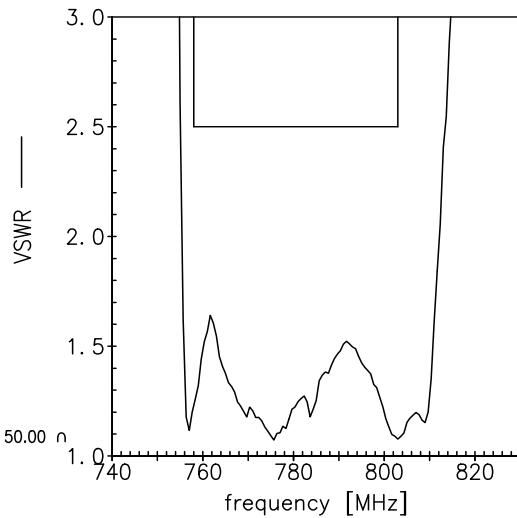
Matching network to 50 Ω single ended input and output


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Transfer function (S21,narrow band)

Transfer function (S21, wide band)


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Smith charts
 S_{11} function

normal impedance: 50.00 Ω

 S_{22} function

normal impedance: 50.00 Ω


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**References**

Type	B5199
Ordering code	B39781B5199U410
Marking and package	C61157-A7-A67
Packaging	F61074-V8228-Z000
Date codes	L_1126
S-parameters	B5199_NB.s2p B5199_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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