



RF360 Europe GmbH

A Qualcomm – TDK Joint Venture



SAW Components

SAW RF filter for base stations

Band 3 uplink

Series/type:	B5149
Ordering code:	B39172B5149U410
Date:	Dec 18, 2015
Version:	2.5

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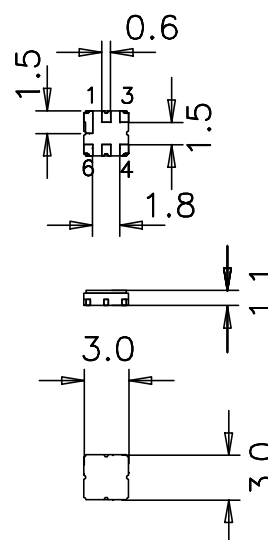
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Application

- Low-loss base-station band 3 uplink
- Low amplitude ripple
- No matching required for operation at 50 Ω
- Usable passband 75 MHz
- Reduced f_c shift over temperature
- 30 dB selectivity at 1805 MHz

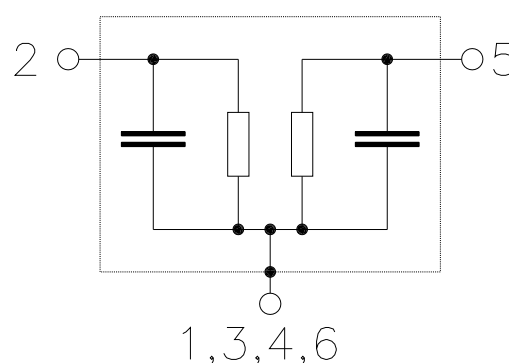
Features

- 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 unbalanced
- 5 Output unbalanced
- 1, 3, 4, 6 To be grounded



SAW Components
B5149
SAW RF filter
1747.5 MHz
Data sheet

Characteristics

Temperature range for specification: $T = -40\text{ }^{\circ}\text{C}$ to $+95\text{ }^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\text{ }\Omega$
 Terminating load impedance: $Z_L = 50\text{ }\Omega$

		min.	typ. @ 25 °C	max.	
Center frequency	f_C	—	1747.5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$	—	2.0	3.3	dB
1710.0 ... 1785.0 MHz		—	2.0	3.3	dB
Passband width					
$\alpha_{\text{rel}} \leq 3.0\text{ dB}$	$B_{3.0\text{dB}}$	75	86	—	MHz
Amplitude ripple (p-p)	$\Delta\alpha$	—	1.0	2.2	dB
1710.0 ... 1785.0 MHz		—	1.0	2.2	dB
Group delay ripple (p-p)	$\Delta\tau$	—	15	40	ns
1710.0 ... 1785.0 MHz		—	15	40	ns
VSWR		—	1.7:1	2.2:1 ¹⁾	
1710.0 ... 1785.0 MHz		—	1.7:1	2.2:1 ¹⁾	
Absolute attenuation	α_{abs}				
10.0 ... 1670.0 MHz		24	28	—	dB
1670.0 ... 1683.0 MHz		20	28	—	dB
1683.0 ... 1690.0 MHz		6	20	—	dB
1805.0 ... 1825.0 MHz		30	35	—	dB
1825.0 ... 1880.0 MHz		35	45	—	dB
1880.0 ... 2110.0 MHz		30	35	—	dB
2110.0 ... 2170.0 MHz		27	30	—	dB
2170.0 ... 2690.0 MHz		20	25	—	dB
2690.0 ... 3600.0 MHz		13	20	—	dB
3600.0 ... 5200.0 MHz		3	7	—	dB

¹⁾ 2.0:1 for temperature $-20\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$

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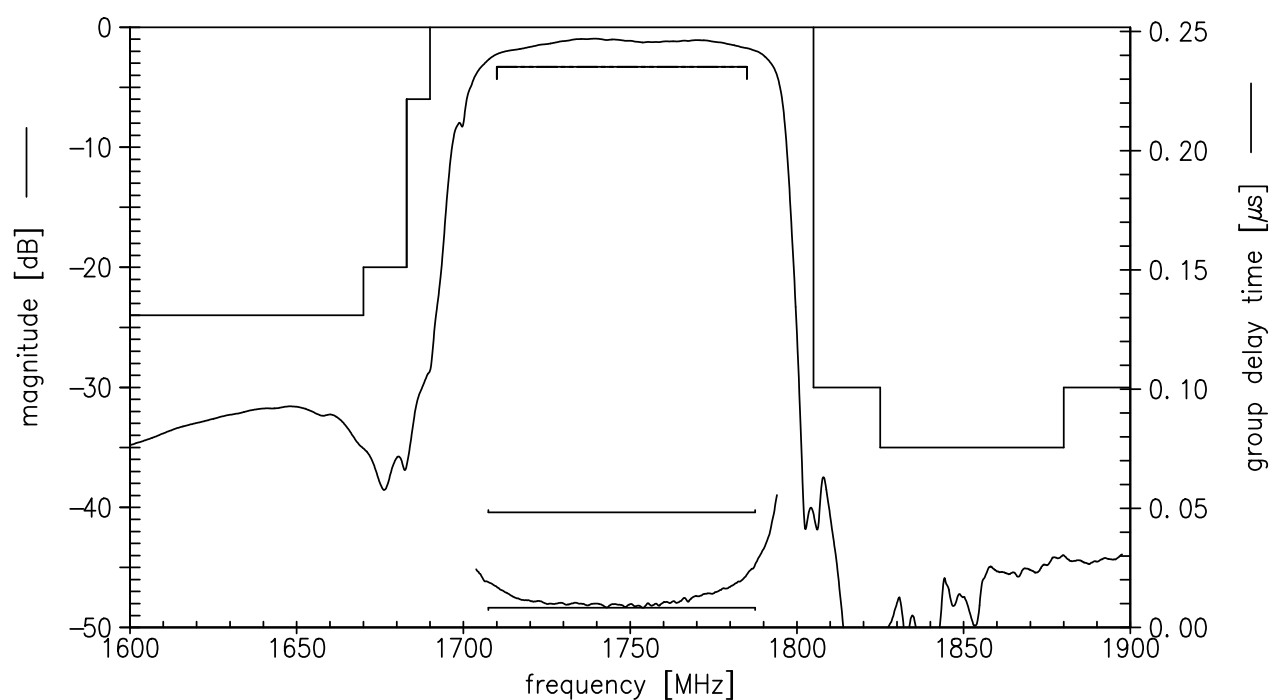
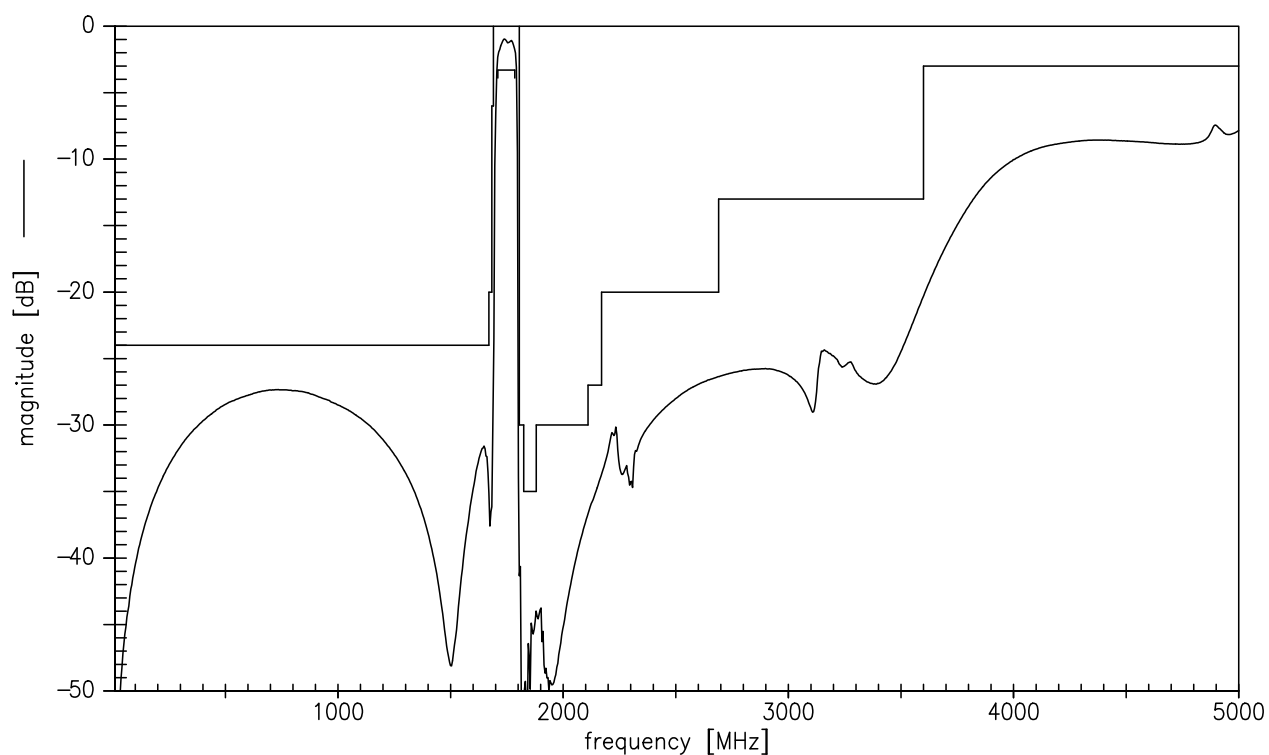
Data sheet


Maximum ratings

Operable temperature range	T	−40/+95	°C	
Storage temperature range	T _{stg}	−40/+95	°C	
DC voltage	V _{DC}	0	V	
ESD voltage	V _{ESD}	150 ¹⁾	V	Machine Model
		200 ²⁾	V	Human Body Model
Input power	P _{IN}			
1710.0 ... 1785.0 MHz		14	dBm	cw, 100000 h, 85 °C
1710.0 ... 1785.0 MHz		20	dBm	cw, 1000 h, 85 °C
1710.0 ... 1785.0 MHz		23	dBm	cw, 2 h, 85 °C
1710.0 ... 1785.0 MHz		25	dBm	cw, 1 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 pulse

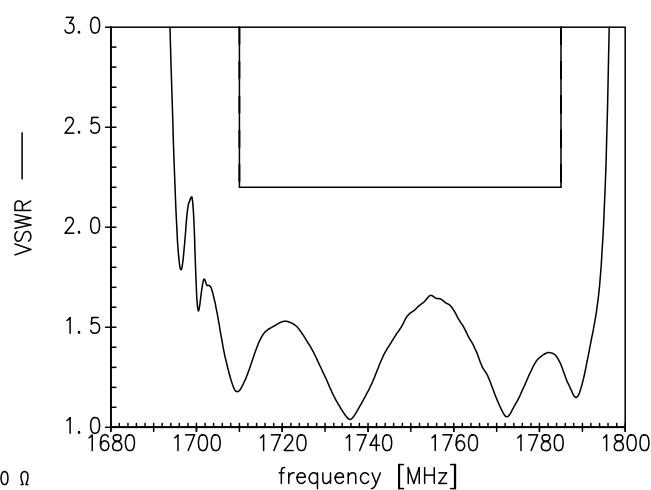
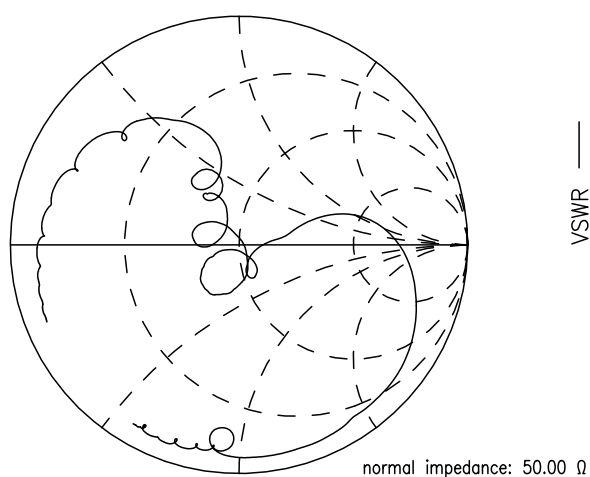
Transfer function (S21, narrowband)

Transfer function (S21, wideband)


Data sheet

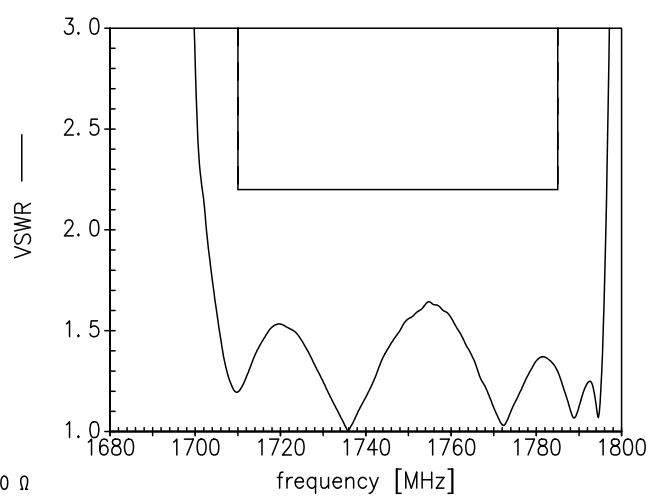
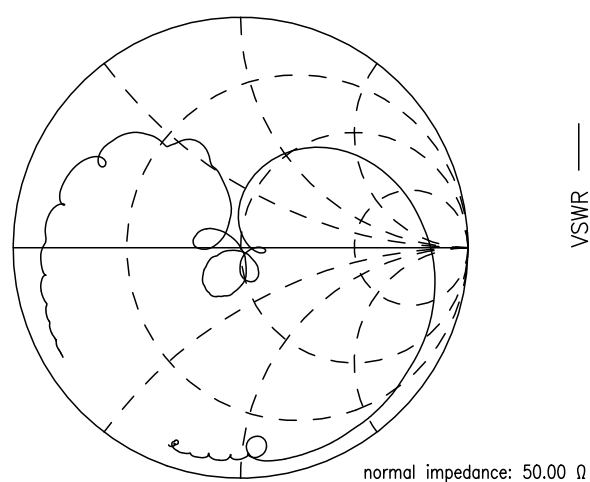
SMD

Smith charts

S₁₁ function



S₂₂ function



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Data sheet


References

Type	B5149
Ordering code	B39172B5149U410
Marking and package	C61157-A7-A67
Packaging	F61074-V8228-Z000
Date codes	L_1126
S-parameters	B5149_NB.s2p B5149_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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