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RF360 Europe GmbH

A Qualcomm – TDK Joint Venture

SAW Components

SAW RF filter for base stations

Band 12 uplink

Series/type:	B5107
Ordering code:	B39711B5107U410
Date:	Aug 12, 2015
Version:	2.4

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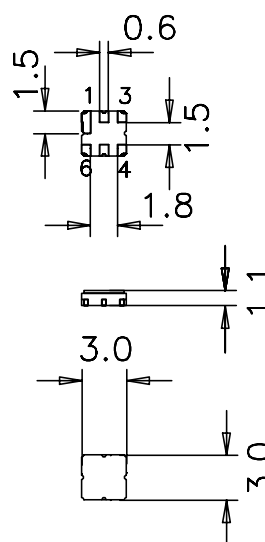
Data sheet


Application

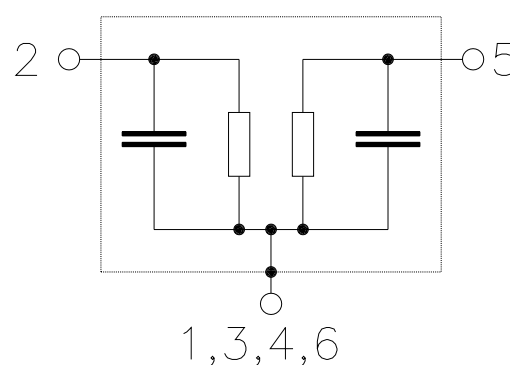
- RF filter for band 12 uplink
- Unbalanced to unbalanced operation
- Low amplitude ripple
- Usable passband 18 MHz
- No matching required for operation at 50 Ω

Features

- Package size 3.0 x 3.0 x 1.1 mm³
- Package code DCC6C
- RoHS compatible
- Approximate weight 0.037 g
- Package for **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



Data sheet


Characteristics

Temperature range for specification: $T = -40\text{ °C to }+85\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

		min.	typ. @ 25 °C	max.	
Center frequency	f_C	—	707.0	—	MHz
Maximum insertion attenuation 698.0 ... 716.0 MHz	α_{\max}	—	1.6	2.5	dB
Amplitude ripple (p-p) 698.0 ... 716.0 MHz	$\Delta\alpha$	—	0.7	1.5	dB
Input return loss 698.0 ... 716.0 MHz		9	11	—	dB
Output return loss 698.0 ... 716.0 MHz		9	11	—	dB
Group delay ripple (p-p) 698.0 ... 716.0 MHz ¹⁾	$\Delta\tau$	—	8	40	ns
Absolute attenuation 100.0 ... 687.0 MHz	α_{abs}	25	33	—	dB
728.0 ... 978.0 MHz		30	38	—	dB
978.0 ... 996.0 MHz		35	39	—	dB
996.0 ... 2700.0 MHz		25	34	—	dB
Temperature coefficient of frequency	TC_f	—	-36	—	ppm/K

¹⁾ over any 1.25 MHz continuous bandwidth

Data sheet


Characteristics

Temperature range for specification: $T = -40\text{ °C to }+105\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

		min.	typ. @ 25 °C	max.	
Center frequency	f_C	—	707.0	—	MHz
Maximum insertion attenuation 698.0 ... 716.0 MHz	α_{\max}	—	1.6	3.2	dB
Amplitude ripple (p-p) 698.0 ... 716.0 MHz	$\Delta\alpha$	—	0.7	2.2	dB
Input return loss 698.0 ... 716.0 MHz		8	11	—	dB
Output return loss 698.0 ... 716.0 MHz		8	11	—	dB
Group delay ripple (p-p) 698.0 ... 716.0 MHz ¹⁾	$\Delta\tau$	—	8	60	ns
Absolute attenuation 100.0 ... 687.0 MHz	α_{abs}	18	33	—	dB
728.0 ... 978.0 MHz		30	38	—	dB
978.0 ... 996.0 MHz		35	39	—	dB
996.0 ... 2700.0 MHz		25	34	—	dB
Temperature coefficient of frequency	TC_f	—	-36	—	ppm/K

¹⁾ over any 1.25 MHz continuous bandwidth


Maximum ratings

Operable temperature range	T	-45/+125	°C	
Storage temperature range	T _{stg}	-45/+125	°C	
DC voltage	V _{DC}	0	V	
ESD voltage	V _{ESD}	100 ¹⁾	V	Machine Model
		250 ²⁾	V	Human Body Model
Input power 698.0 ... 716.0 MHz	P _{IN}	20	dBm	cw, 100000 h, 85 °C

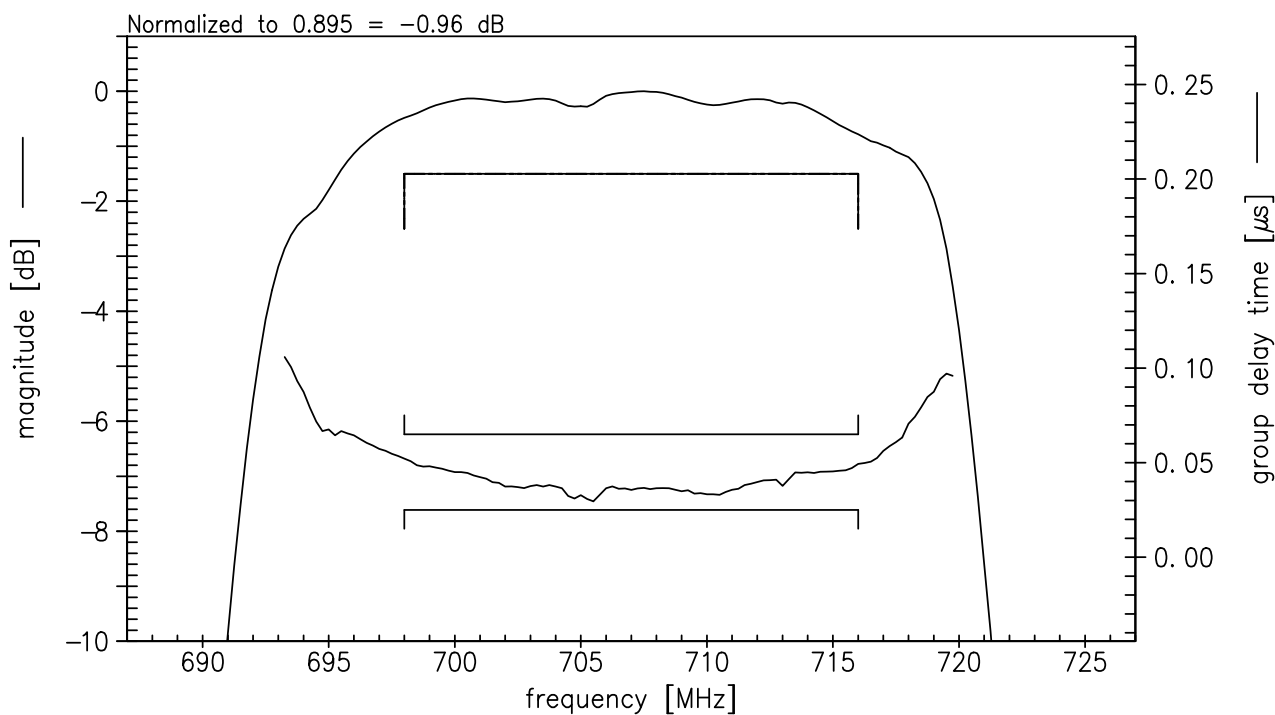
1) acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses

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

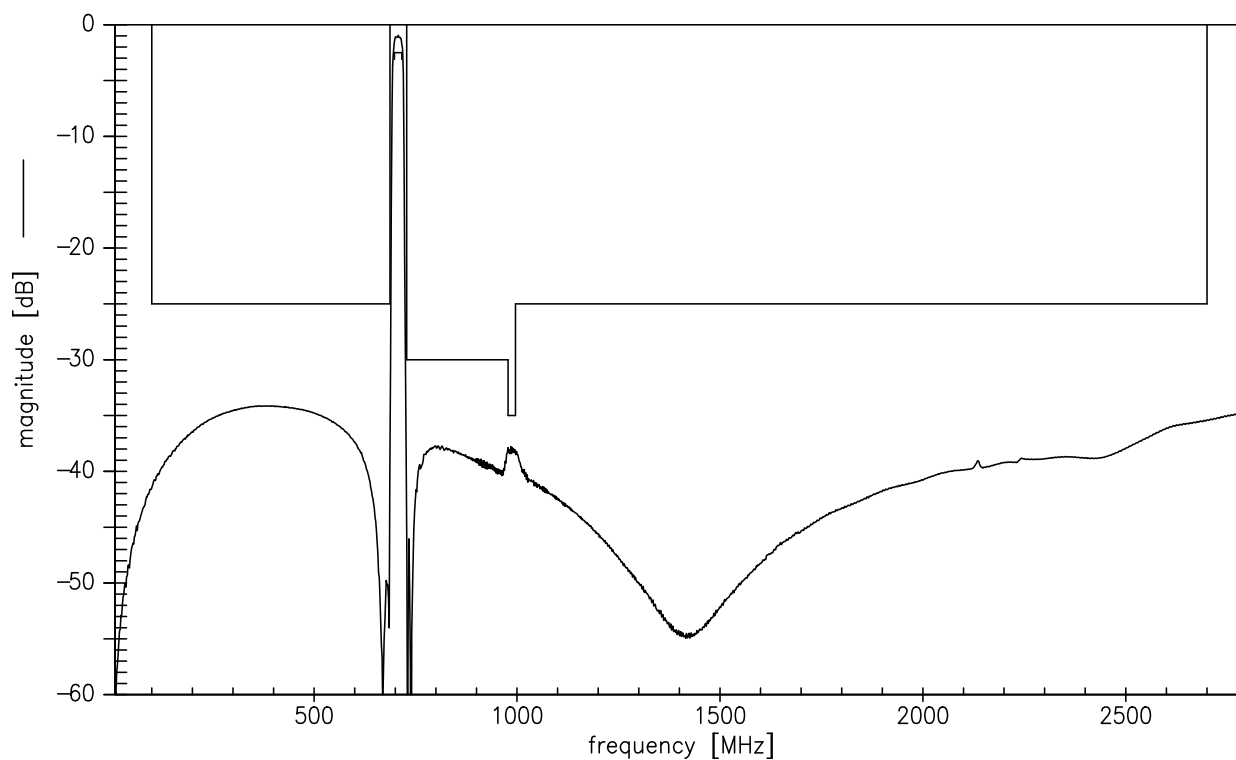
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SMD

Transfer function (S21, narrowband)



Transfer function (S21, wideband)

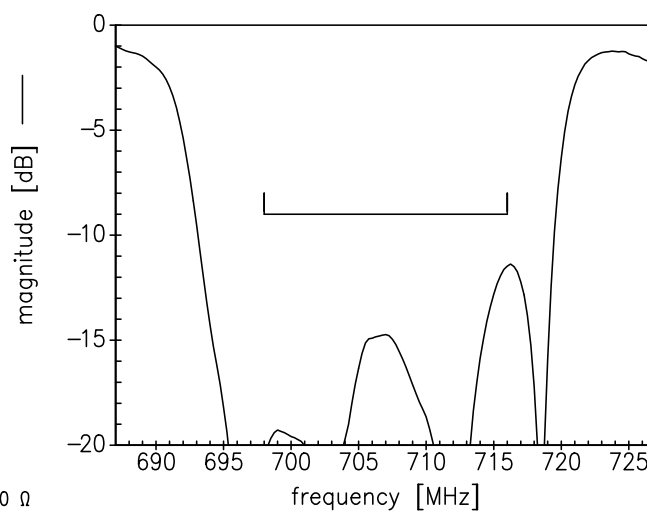
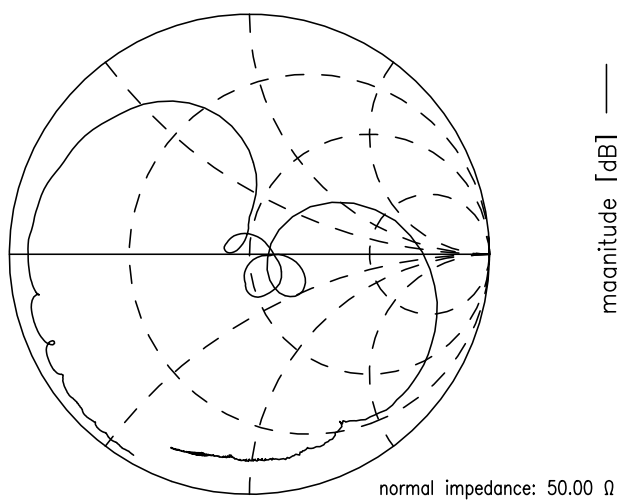


Data sheet

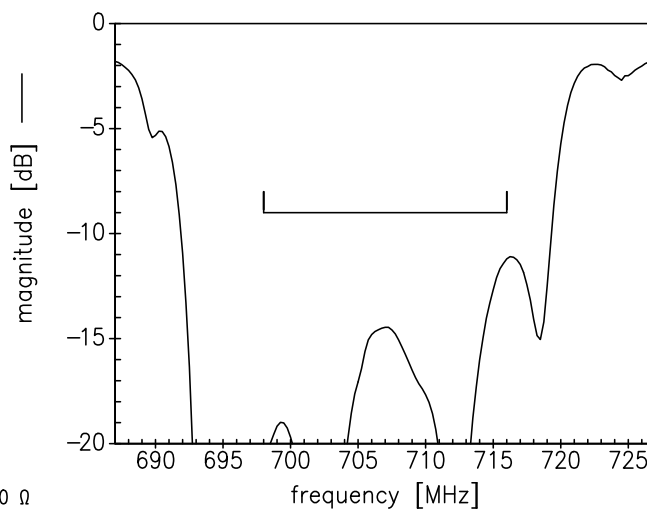
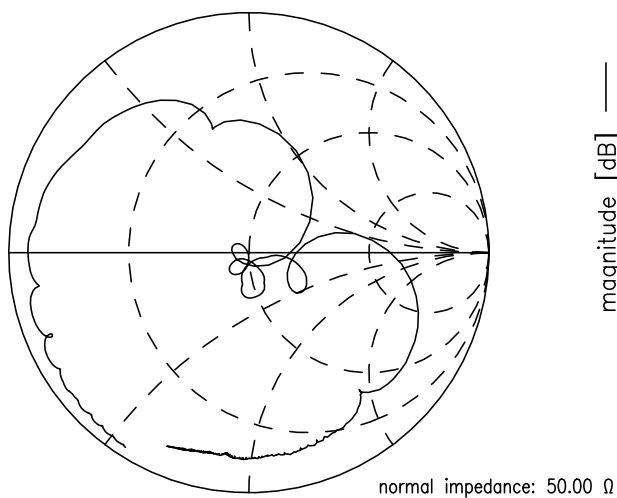
SMD

Smith

S₁₁ function



S₂₂ function



References

Type	B5107
Ordering code	B39711B5107U410
Marking and package	C61157-A7-A67
Packaging	F61074-V8168-Z000
Date codes	L_1126
S-parameters	B5107_NB.s2p B5107_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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