



# SAW Components

## SAW RF filter for base stations APT700

<b>Series/type:</b>	<b>B5194</b>
<b>Ordering code:</b>	<b>B39731B5194U410</b>
<b>Date:</b>	<b>April 29,2014</b>
<b>Version:</b>	<b>2.1</b>

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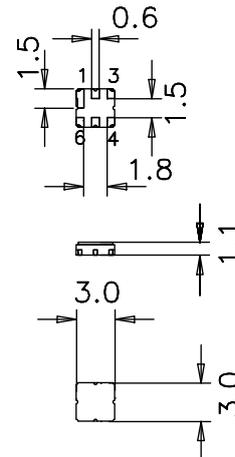
Data sheet

**Application**

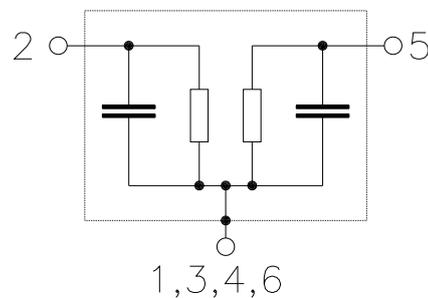
- RF Rx filter for APT 700
- Usable passband 45MHz
- Unbalanced to unbalanced operation


**Features**

- Package size 3.0 x3.0 x 1.1 mm<sup>3</sup>
- Package code DCC6C
- RoHS compatible
- Approximate weight 0.037 g
- Ceramic Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitive Level 1**
- Filter surface passivated


**Pin configuration**

- 2 Input
- 5 Output
- 1,3,4,6 Case 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.	
<b>Nominal frequency</b>	$f_N$	—	725.5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	2.4	3.0	dB
703.0 ... 748.0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0.7	1.5	dB
703.0 ... 748.0 MHz					
<b>Return loss</b>		10	12	—	dB
703.0 ... 748.0 MHz					
<b>Absolute attenuation</b>	$\alpha_{\text{abs}}$	30	47	—	dB
50.0 ... 100.0 MHz		30	35	—	
430.0 ... 480.0 MHz		20	28	—	
480.0 ... 648.0 MHz		14	18	—	
785.0 ... 830.0 MHz		20	40	—	
936.0 ... 971.0 MHz		20	26	—	
1090.0 ... 1150.0 MHz		30	37	—	dB
1615.0 ... 1660.0 MHz					

**Maximum ratings**

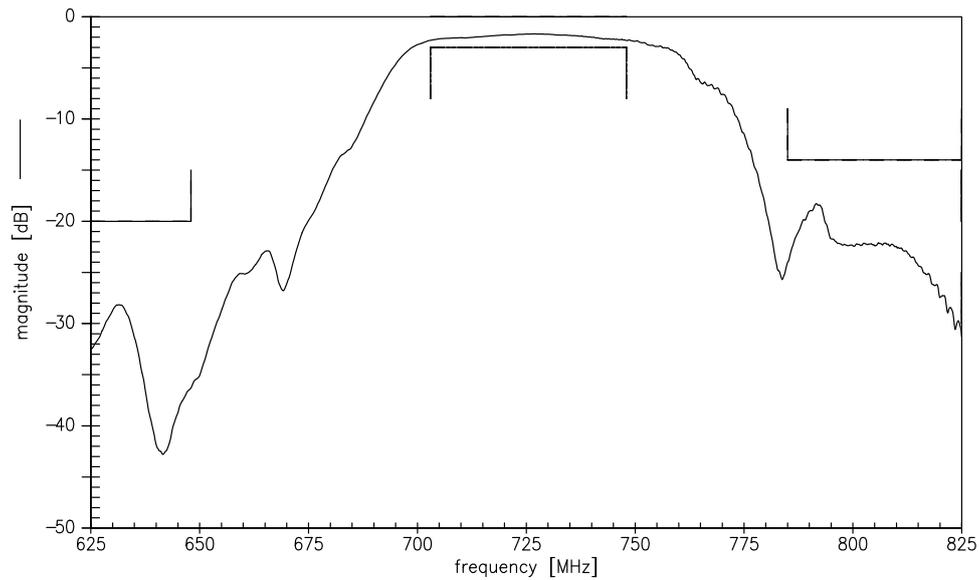
Operable temperature range	T	-45/+125	°C	
Storage temperature range	T <sub>stg</sub>	-45/+125	°C	
DC voltage	V <sub>DC</sub>	6	V	
ESD voltage	V <sub>ESD</sub>	100 <sup>1)</sup>	V	machine model, 10 pulses
		350 <sup>2)</sup>	V	human body model, 1 pulse
		1000 <sup>3)</sup>	V	charge device model
Input power at				
703.0 ... 748.0 MHz	P <sub>IN</sub>	25	dBm	CW @ 85°C, 48 hrs
703.0 ... 748.0 MHz	P <sub>IN</sub>	20	dBm	CW @ 85°C, 100000 hrs

<sup>1)</sup> acc. to JESD22-A115B (machine model), +/- 10 pulses.

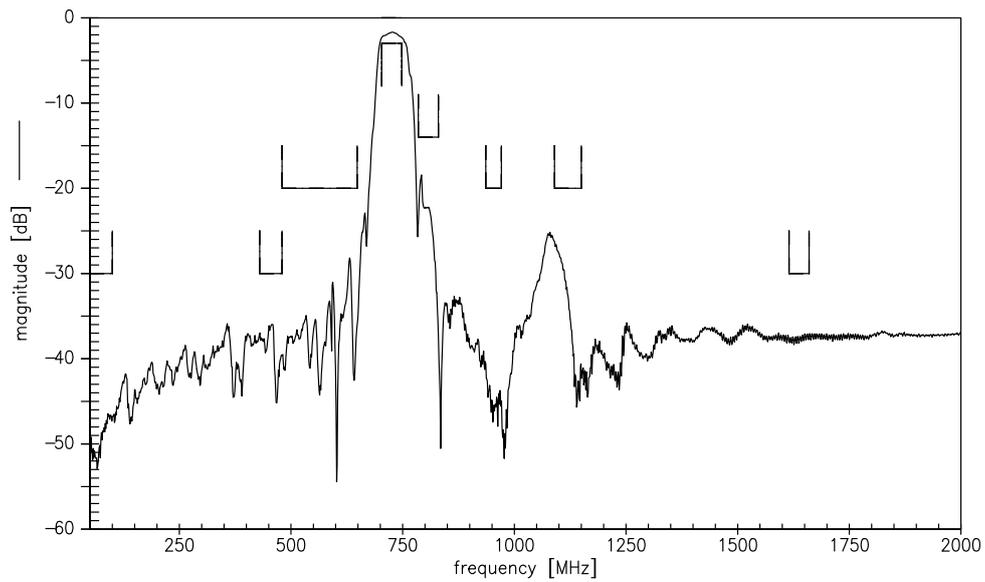
<sup>2)</sup> acc. to JESD22-A114F (human body model), +/- 1 pulse.

<sup>3)</sup> acc. to JESD22-C101E (charge device model).

Transfer function



Transfer function (wideband)

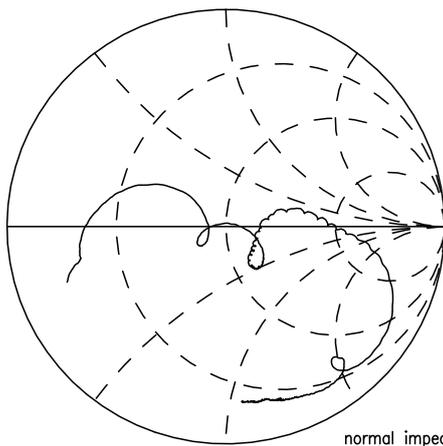


Data sheet

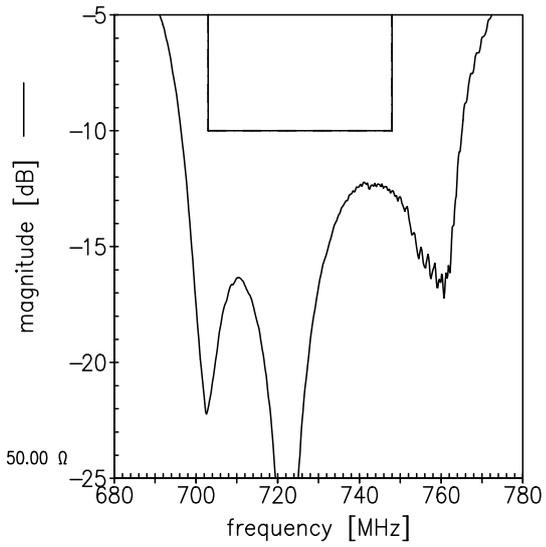


Smith chart

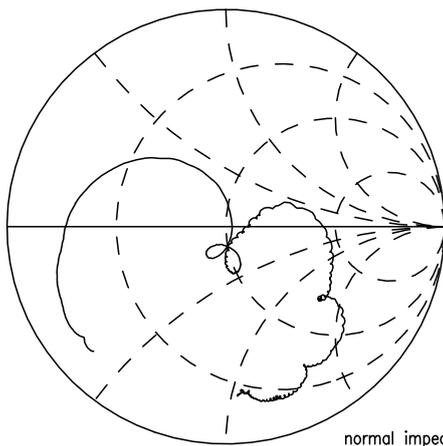
S<sub>11</sub> function



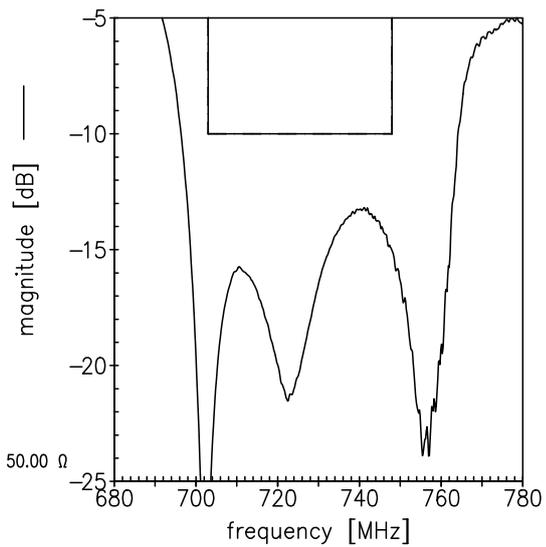
normal impedance: 50.00 Ω



S<sub>22</sub> function



normal impedance: 50.00 Ω



<b>SAW Components</b>	<b>B5194</b>
<b>SAW RF filter for base stations</b>	<b>725.5 MHz</b>

Data sheet



## References

<b>Type</b>	B5194
<b>Ordering code</b>	B39731B5194U410
<b>Marking and package</b>	C61157-A7-A67
<b>Packaging</b>	F61074-V8228-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B5194_NB.s2p,B5194_WB.s2p see file header for port/pin assignment table
<b>Soldering profile</b>	S_6001
<b>RoHS compatible</b>	RoHS-compatible means that products are compatible with therequirements 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.
<b>Matching coils</b>	See Inductor pdf-catalog <a href="http://www.tdk.co.jp/tefe02/coil.htm#aname1">http://www.tdk.co.jp/tefe02/coil.htm#aname1</a> and Data Library for circuit simulation <a href="http://www.tdk.co.jp/etvcl/index.htm">http://www.tdk.co.jp/etvcl/index.htm</a> for a large variety of matching coils.

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