



## **SAW Components**

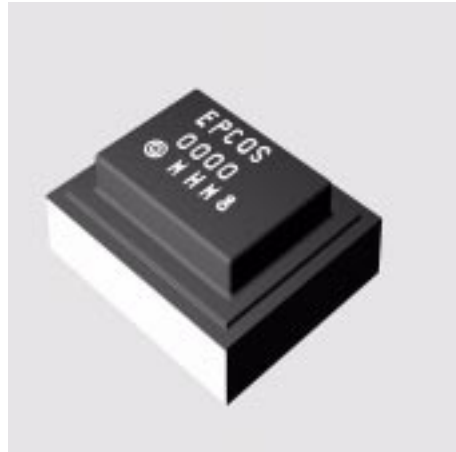
### **SAW Duplexer** for WCDMA Band I

<b>Series/type:</b>	<b>B7684</b>
<b>Ordering code:</b>	<b>B39212B7684A710</b>
<b>Date:</b>	<b>May 21, 2008</b>
<b>Version:</b>	<b>2.0</b>



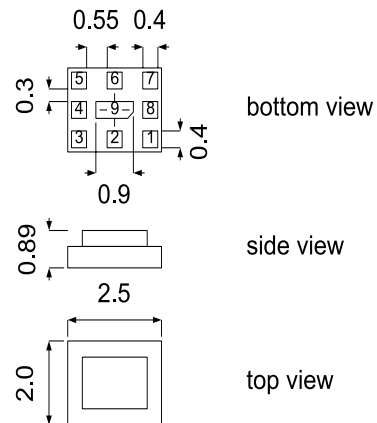
**Application**

- Low-loss SAW duplexer for mobile telephone WCDMA Band I systems
- Low insertion attenuation
- Low amplitude ripple
- Usable passband 60 MHz



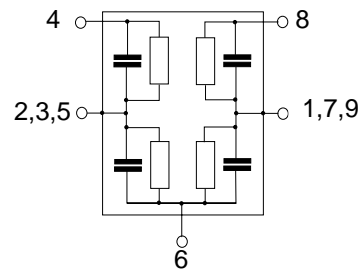
**Features**

- Package size 2.5 x 2.0 x 0.89 mm<sup>3</sup>
- RoHS compatible
- Approx. weight 0.018 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- Fully matched by integrated matching network



**Pin configuration**

- 8 RX Output
- 4 TX Input
- 6 Antenna
- 2, 3, 5 To be grounded
- 1, 7, 9 To be grounded





Data sheet



**Characteristics**

Temperature range for specification: T = -30 °C to +85 °C  
 Antenna terminating impedance: Z<sub>ANT</sub> = 50 Ω  
 TX terminating impedance: Z<sub>TX</sub> = 50 Ω  
 RX terminating impedance: Z<sub>RX</sub> = 50 Ω

Characterisitcs TX - ANT		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	f <sub>C</sub>	–	1950.0	–	MHz
<b>Maximum insertion attenuation</b>	α <sub>max</sub>	–	1.3	1.6	dB
1920.0 ... 1980.0 MHz					
<b>Amplitude ripple (p-p)</b>	Δα	–	0.2	0.8	dB
1920.0 ... 1980.0 MHz					
<b>Amplitude ripple (p-p) over any 3.84 MHz within passband</b>	Δα <sub>ch</sub>	–	0.1	0.5	dB
1920.0 ... 1980.0 MHz					
<b>Input VSWR (TX port)</b>		–	1.6	1.9	
1920.0 ... 1980.0 MHz					
<b>Output VSWR (ANT port)</b>		–	1.5	1.9	
1920.0 ... 1980.0 MHz					
<b>Attenuation</b>	α				
0.3 ... 1570.0 MHz		25	33	–	dB
1570.0 ... 1580.0 MHz		30	33	–	dB
1805.0 ... 1880.0 MHz		10	31	–	dB
2110.0 ... 2170.0 MHz		38	43	–	dB
2400.0 ... 2500.0 MHz		18	25	–	dB
3840.0 ... 3960.0 MHz		20	30	–	dB
5760.0 ... 5940.0 MHz		10	17	–	dB



Data sheet



**Characteristics**

Temperature range for specification: T = -30 °C to +85 °C  
 Antenna terminating impedance: Z<sub>ANT</sub> = 50 Ω  
 TX terminating impedance: Z<sub>TX</sub> = 50 Ω  
 RX terminating impedance: Z<sub>RX</sub> = 50 Ω

Characterisitcs ANT - RX		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	f <sub>C</sub>	–	2140.0	–	MHz
<b>Maximum insertion attenuation</b>	α <sub>max</sub>				
2110.0 ... 2170.0 MHz		–	1.8	2.2	dB
<b>Amplitude ripple (p-p)</b>	Δα				
2110.0 ... 2170.0 MHz		–	0.4	0.8	dB
<b>Amplitude ripple (p-p) over any 3.84 MHz within passband</b>	Δα <sub>ch</sub>				
2110.0 ... 2170.0 MHz		–	0.2	0.5	dB
<b>Input VSWR (ANT port)</b>					
2110.0 ... 2170.0 MHz		–	1.6	1.9	
<b>Output VSWR (RX port)</b>					
2110.0 ... 2170.0 MHz		–	1.6	1.9	
<b>Attenuation</b>	α				
0.3 ... 1730.0 MHz		30	38	–	dB
1730.0 ... 1790.0 MHz		30	39	–	dB
1920.0 ... 1980.0 MHz		46	49	–	dB
2015.0 ... 2075.0 MHz		7	13	–	dB
2400.0 ... 2500.0 MHz		40	50	–	dB
4030.0 ... 4150.0 MHz		20	37	–	dB
4220.0 ... 4340.0 MHz		20	34	–	dB
4340.0 ... 6000.0 MHz		15	22	–	dB



Data sheet



Characteristics

Temperature range for specification: T = -30 °C to +85 °C  
 Antenna terminating impedance: Z<sub>ANT</sub> = 50 Ω  
 TX terminating impedance: Z<sub>TX</sub> = 50 Ω  
 RX terminating impedance: Z<sub>RX</sub> = 50 Ω

Characterisitcs TX - RX				min.	typ. @ 25 °C	max.	
Isolation	α	1920.0 ... 1980.0 MHz		50	54	-	dB
		2110.0 ... 2170.0 MHz		42	45	-	dB

Maximum ratings

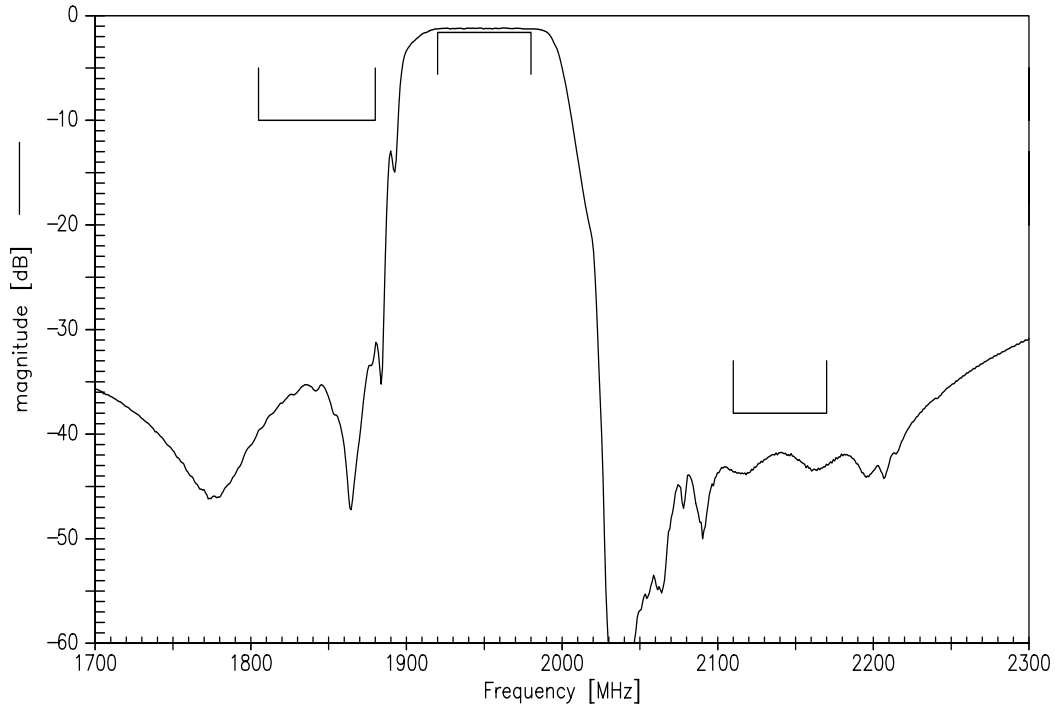
Temperature range for specification <sup>1)</sup>	T	-30 / +85	°C	machine model, 10 pulses source and load impedance 50 Ω } continuous wave } T = 55 °C, 5000 h
Storage temperature range	T <sub>stg</sub>	-40/+85	°C	
DC voltage	V <sub>DC</sub>	5	V	
ESD voltage	V <sub>ESD</sub>	50 <sup>2)</sup>	V	
Input power at 1920.0 ... 1980.0 MHz	P <sub>IN</sub>	29	dBm	
elsewhere		10	dBm	

1) Defines the temperature range in which the specification values are warranted.

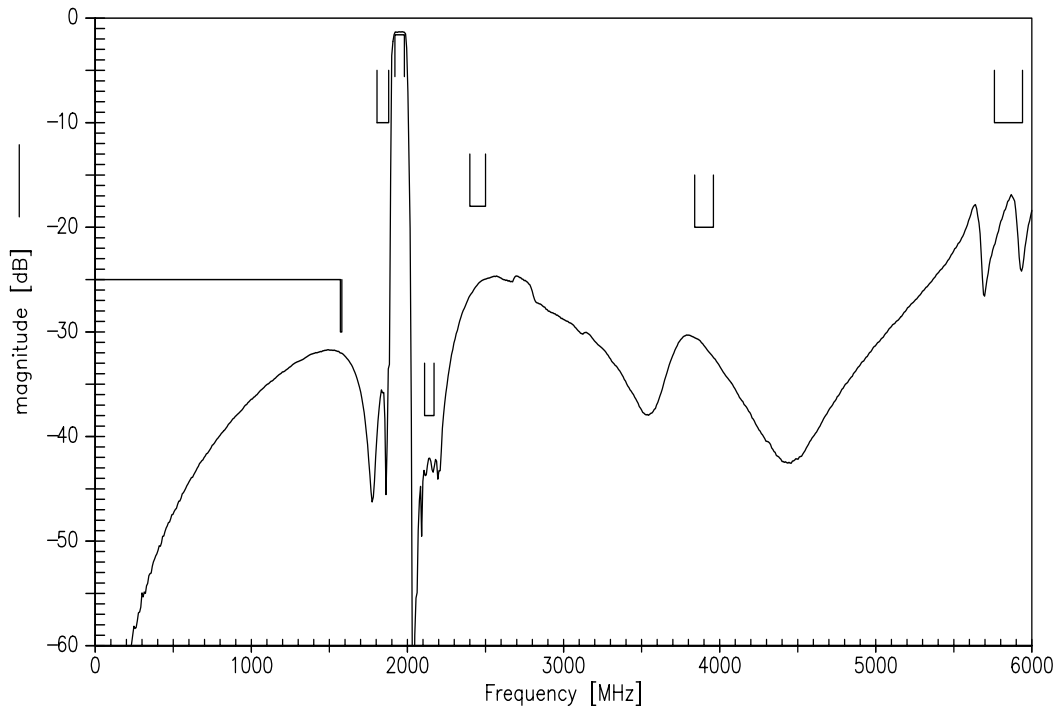
2) acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



Frequency Response TX-ANT

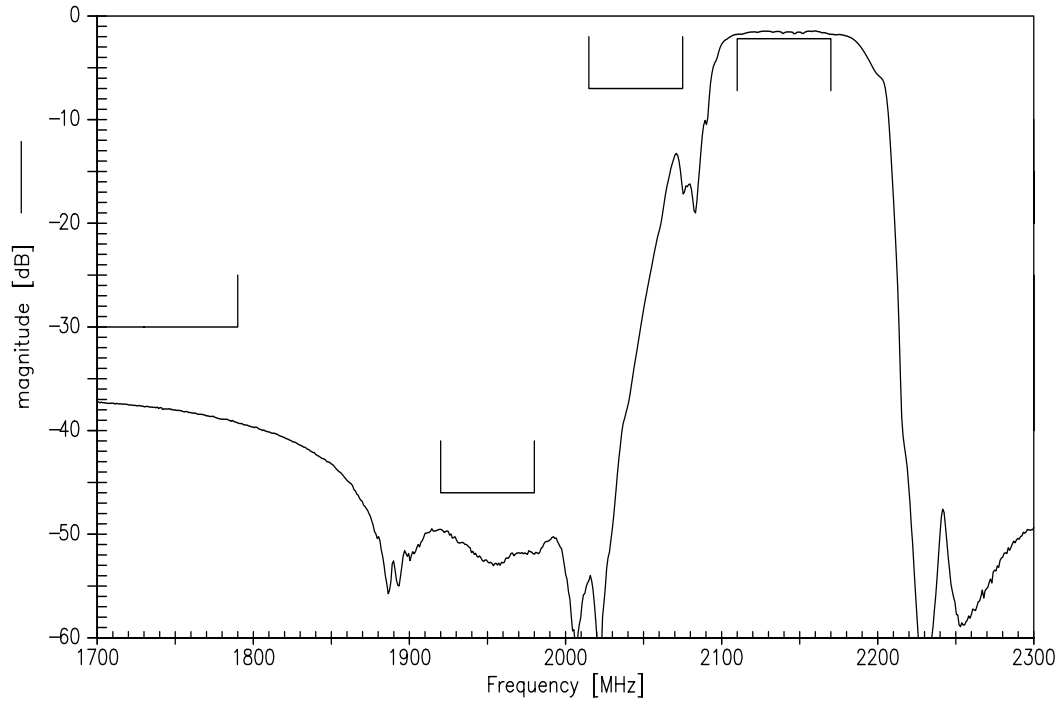


Frequency Response TX-ANT (wideband)

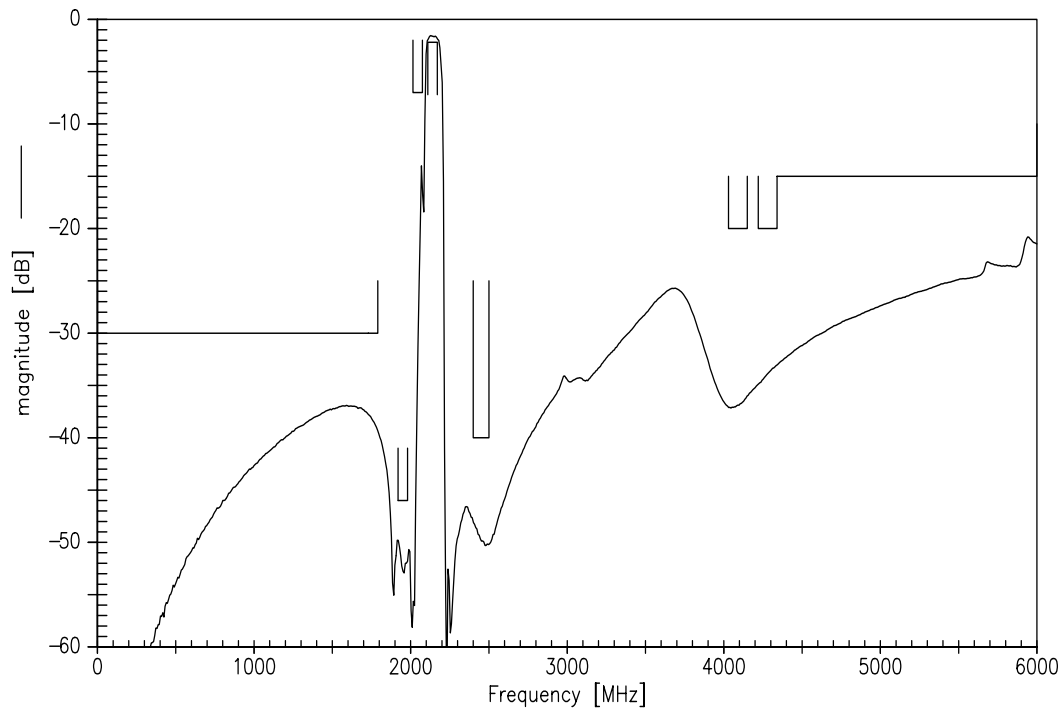




Frequency Response RX-ANT

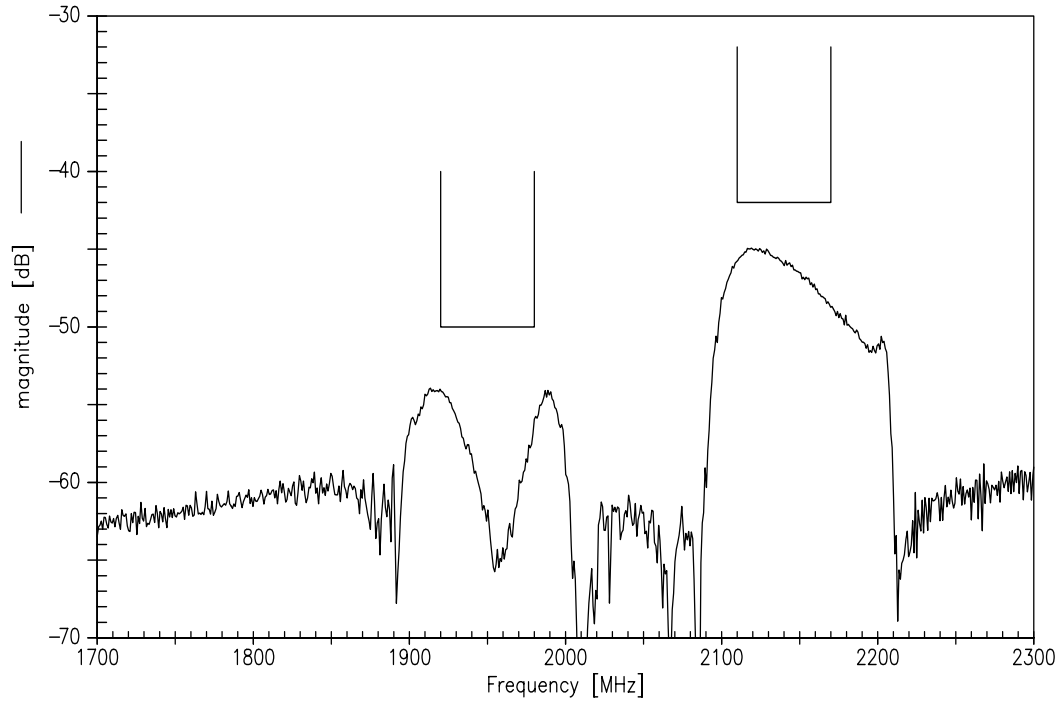


Frequency Response RX-ANT (wideband)

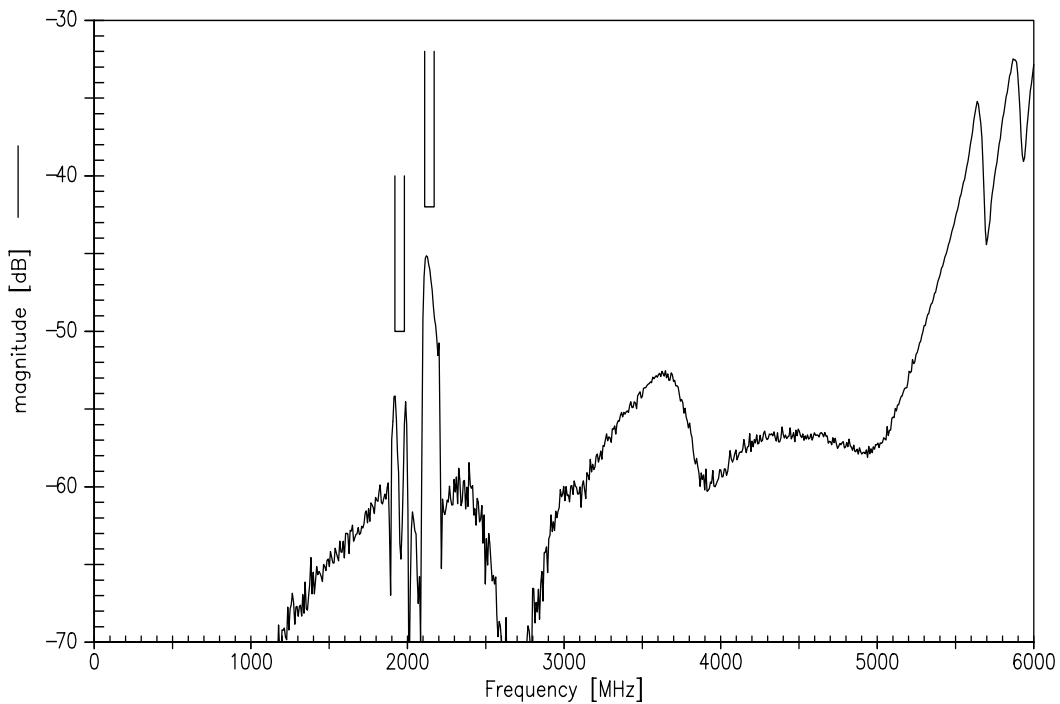




Frequency Response TX-RX



Frequency Response TX-RX (wideband)





SAW Components

B7684

SAW Duplexer

1950 / 2140 MHz

Data sheet



## References

Type	B7684
Ordering code	B39212B7684A710
Marking and package	C61157-A3-A39
Packaging	F61074-V8153-Z000
Date codes	L_1126
S-parameters	B7684_NB.s3p B7684_WB.s3p See file header for pin/port assignments
Soldering profile	S_6001
RoHS compatible	defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment."

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