SAW Components

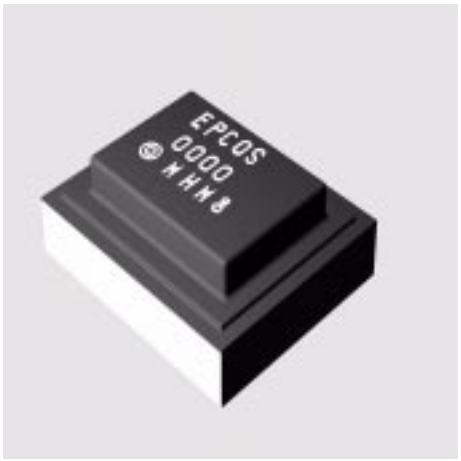
SAW Duplexer

for WCDMA Band I

Series/type:	**B7684**
Ordering code:	**B39212B7684A710**
Date:	May 21, 2008
Version:	2.0

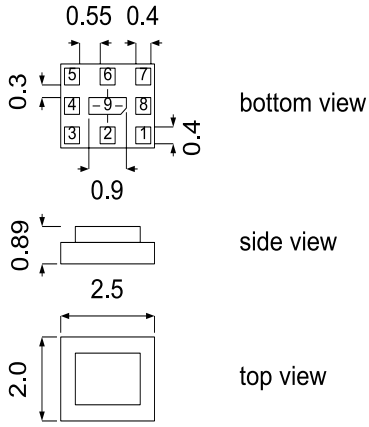
Application

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



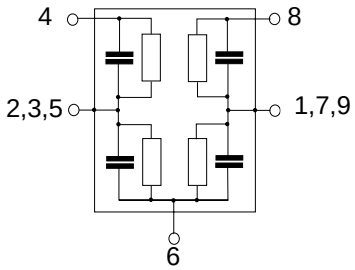
Features

- Package size 2.5 x 2.0 x 0.89 mm³
- RoHS compatible
- Approx. weight 0.018 g
- Package for **S**urface **M**ount **T**echnology (**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



Characteristics

Temperature range for specification: T = –30 ˚C to +85 ˚C
Antenna terminating impedance: Z_{ANT} = 50 Ω
TX terminating impedance: Z_{TX} = 50 Ω
RX terminating impedance: Z_{RX} = 50Ω

Characterisitcs TX - ANT		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	–	1950.0	–	MHz
Maximum insertion attenuation	α_{max}				
1920.0 ... 1980.0 MHz		–	1.3	1.6	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1920.0 ... 1980.0 MHz		–	0.2	0.8	dB
Amplitude ripple (p-p) **over any 3.84 MHz within passband**	$\Delta\alpha_{ch}$				
1920.0 ... 1980.0 MHz		–	0.1	0.5	dB
Input VSWR (TX port)					
1920.0 ... 1980.0 MHz		–	1.6	1.9	
Output VSWR (ANT port)					
1920.0 ... 1980.0 MHz		–	1.5	1.9	
Attenuation	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

Characteristics

Temperature range for specification: T = –30 ˚C to +85 ˚C
Antenna terminating impedance: Z_{ANT} = 50 Ω
TX terminating impedance: Z_{TX} = 50 Ω
RX terminating impedance: Z_{RX} = 50 Ω

Characterisitcs ANT - RX		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	–	2140.0	–	MHz
Maximum insertion attenuation	α_{max}				
2110.0 ... 2170.0 MHz		–	1.8	2.2	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
2110.0 ... 2170.0 MHz		–	0.4	0.8	dB
Amplitude ripple (p-p) **over any 3.84 MHz within passband**	$\Delta\alpha_{ch}$				
2110.0 ... 2170.0 MHz		–	0.2	0.5	dB
Input VSWR (ANT port)					
2110.0 ... 2170.0 MHz		–	1.6	1.9	
Output VSWR (RX port)					
2110.0 ... 2170.0 MHz		–	1.6	1.9	
Attenuation	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 SMD

Characteristics

Temperature range for specification: T = –30 ˚C to +85 ˚C
Antenna terminating impedance: Z_{ANT} = 50 Ω
TX terminating impedance: Z_{TX} = 50 Ω
RX terminating impedance: Z_{RX} = 50Ω

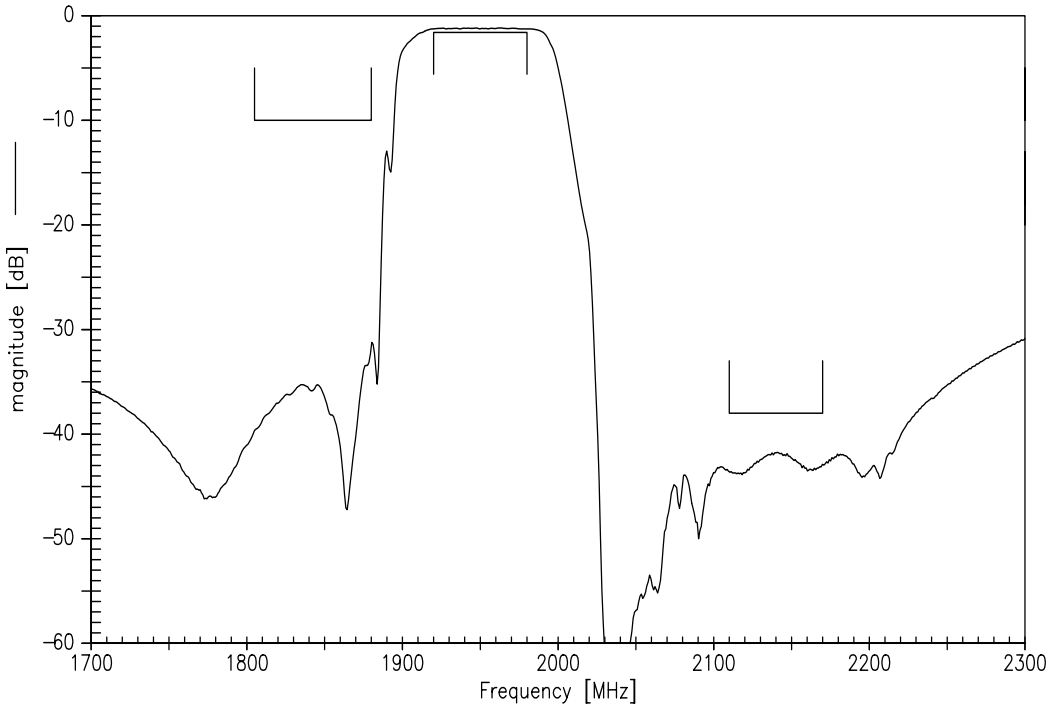
Characterisitcs TX - RX		min.	typ. @ 25 ˚C	max.	
Isolation	α				
1920.0 ... 1980.0 MHz		50	54	–	dB
2110.0 ... 2170.0 MHz		42	45	–	dB

Maximum ratings

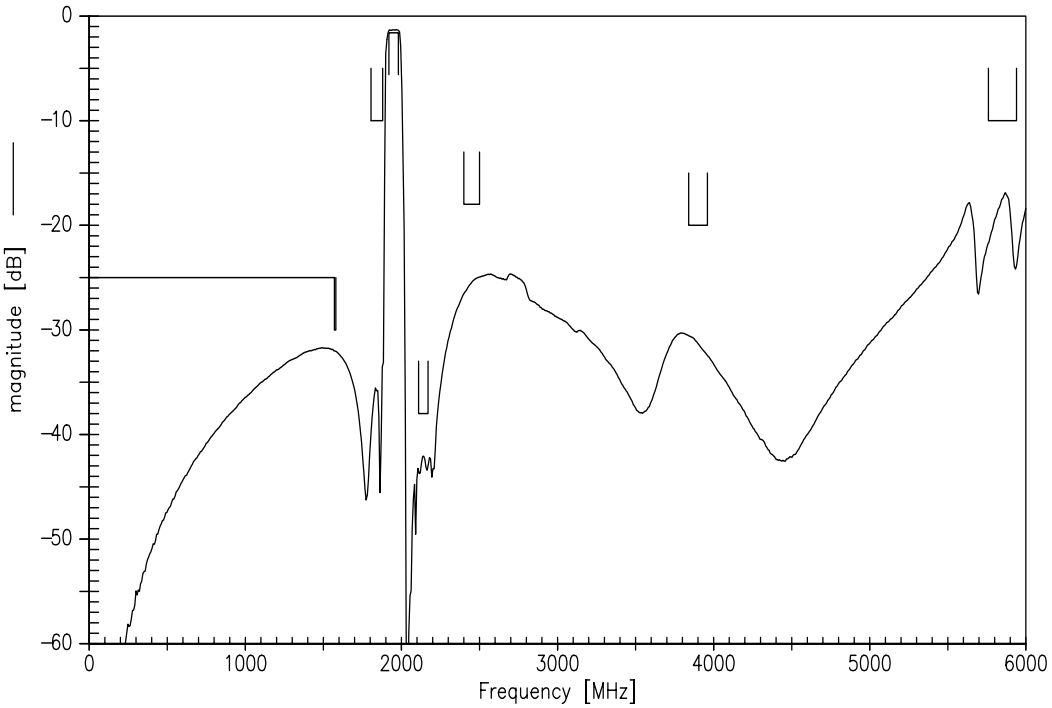
Temperature range for specification[1)]	T	–30 / +85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	50[2)]	V	machine model, 10 pulses
Input power at	P_{IN}			source and load impedance 50 Ω
1920.0 ... 1980.0 MHz		29	dBm	} continuous wave
elsewhere		10	dBm	*T* = 55˚C, 5000 h

1) Defines the temperature range in which the specification values are warranted.
2) acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.

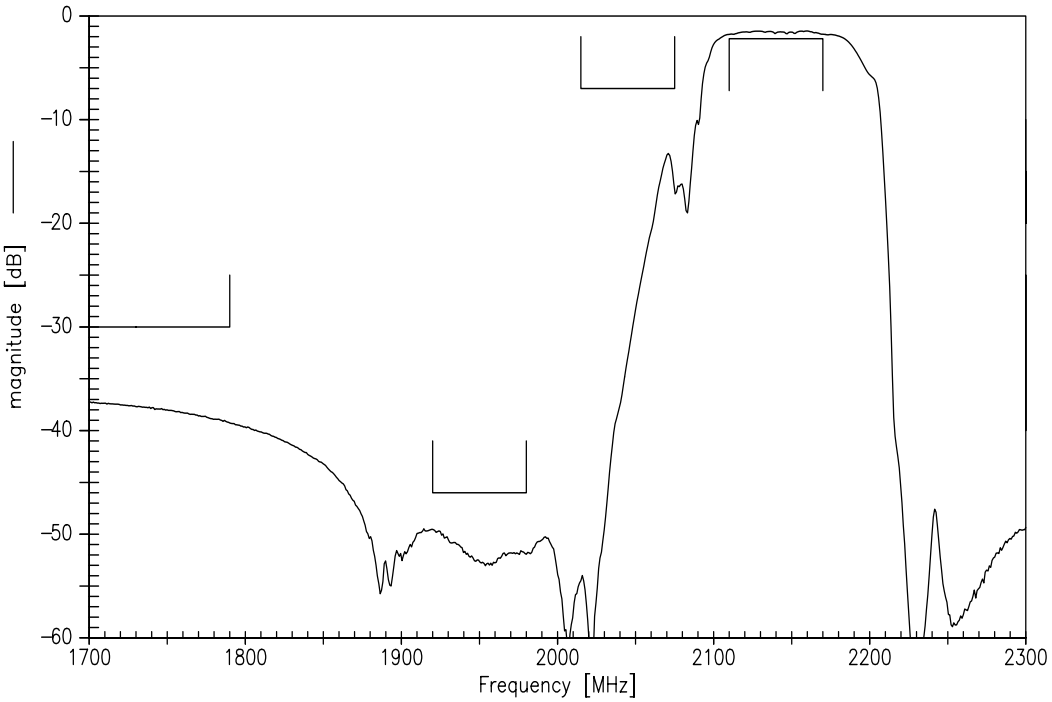
Frequency Response TX-ANT



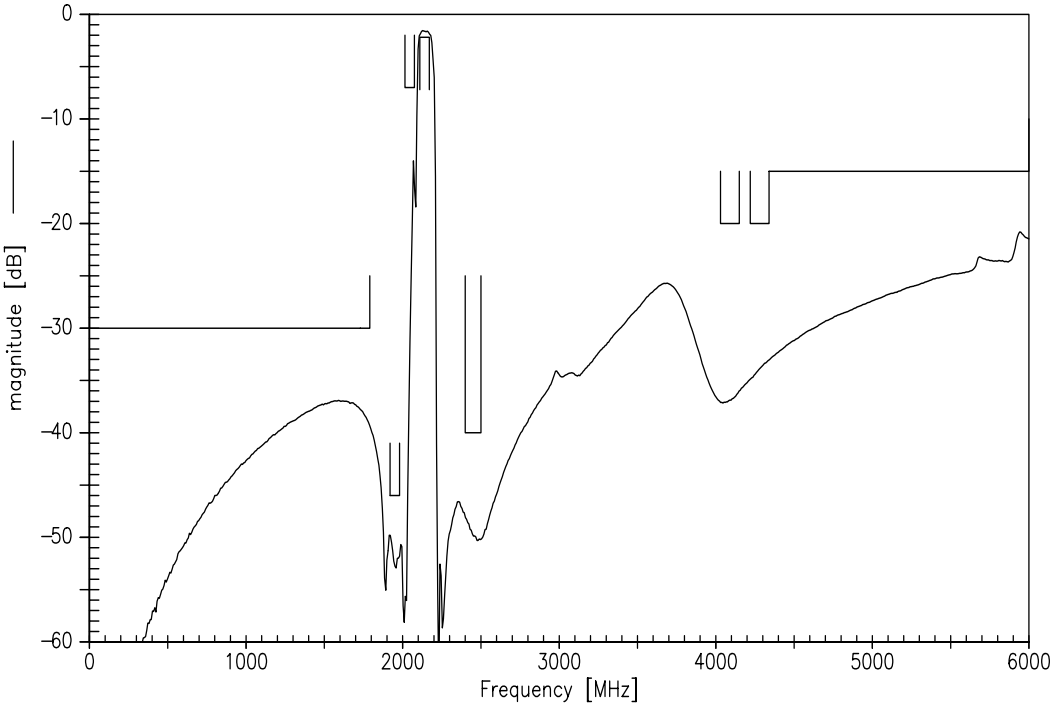
Frequency Response TX-ANT (wideband)



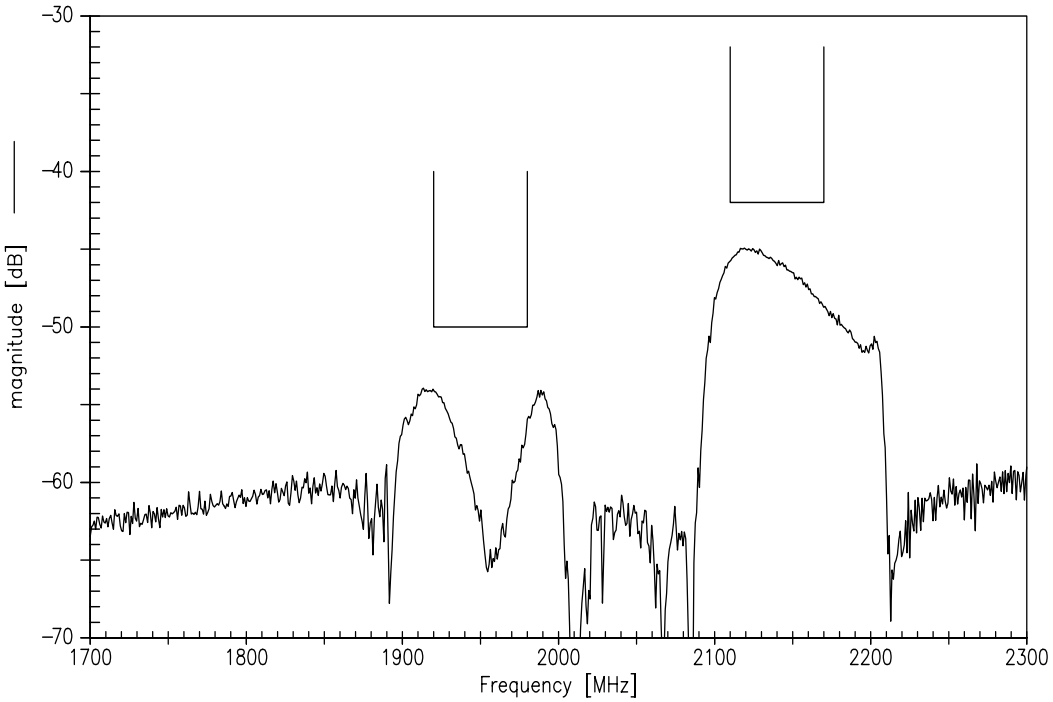
Frequency Response RX-ANT



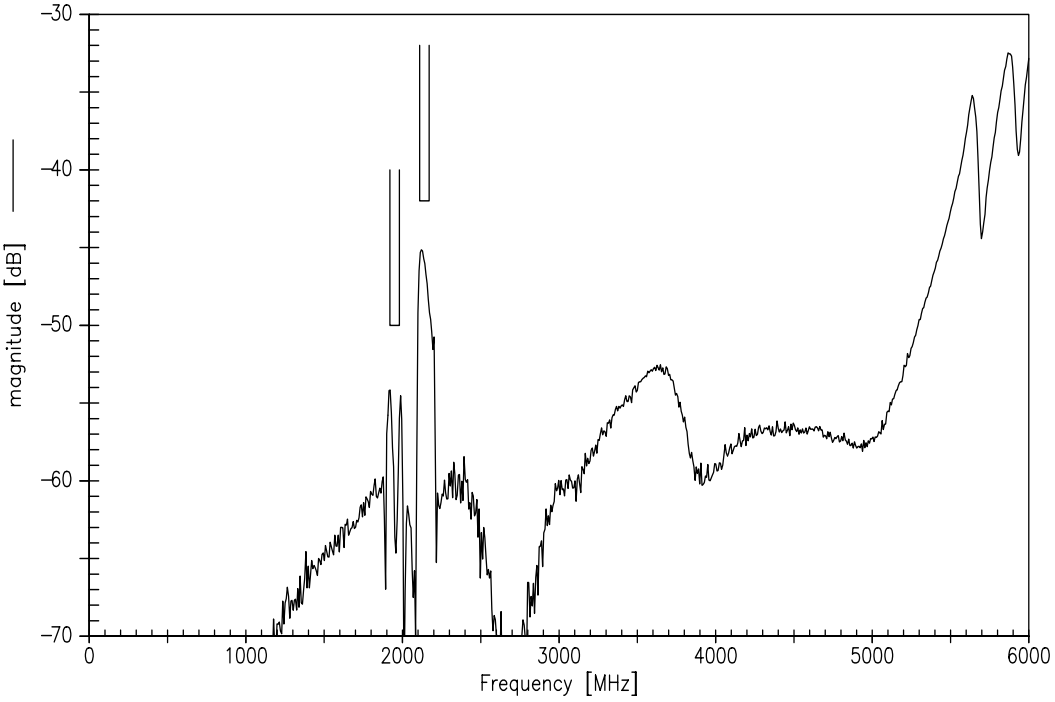
Frequency Response RX-ANT (wideband)



Frequency Response TX-RX



Frequency Response TX-RX (wideband)



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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