



SAW Components

BAW Duplexer

CDMA-PCS

Series/type:	B7685
Ordering code:	B39202B7685L310
Date:	June 05, 2009
Version:	2.0



Data sheet



Characteristics

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

Characteristics TX - ANT				min.	typ. @ 25 °C	max.	
Center frequency	f _C				1880.0		MHz
Insertion attenuation	α	1850.6 ... 1909.4	MHz		1.7 ¹⁾		dB
Maximum insertion attenuation	α _{max}	1850.6 ... 1909.4	MHz		2.5	3.0 ²⁾	dB
		1850.6 ... 1909.4	MHz		2.5	3.2 ³⁾	dB
Amplitude ripple (p-p)	Δα	1850.6 ... 1909.4	MHz		1.3	2.0	dB
Input VSWR (TX port)		1850.6 ... 1909.4	MHz		1.7	2.0	
Output VSWR (ANT port)		1850.6 ... 1909.4	MHz		1.8	2.1	
Attenuation	α						
		470.0 ... 1450.0	MHz	30	33		dB
		1450.0 ... 1480.0	MHz	30	33		dB
		1574.4 ... 1576.5	MHz	38	42		dB
		1770.0 ... 1830.0	MHz	10	22		dB
		1930.6 ... 1989.4	MHz	45	53		dB
		2400.0 ... 2500.0	MHz	20	26		dB
		3700.0 ... 3820.0	MHz	15	20		dB
		3820.0 ... 5150.0	MHz	8	12		dB
		5150.0 ... 5550.0	MHz	5	10		dB
		5550.0 ... 5730.0	MHz	5	10		dB
		5760.0 ... 6000.0	MHz	8	12		dB

1) Average value over indicated band.
 2) +15 °C to +35 °C.
 3) -30 °C to +15 °C and +35 °C to +85 °C.



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 RX terminating impedance: Z_{RX} = 50 Ω
 TX terminating impedance: Z_{TX} = 50 Ω

Characteristics ANT - RX				min.	typ. @ 25 °C	max.	
Center frequency	f _C				1960.0		MHz
Insertion attenuation	α	1930.6 ... 1989.4	MHz		2.1 ¹⁾		dB
Maximum insertion attenuation	α _{max}	1930.6 ... 1989.4	MHz		3.0	3.5 ²⁾	dB
		1930.6 ... 1989.4	MHz		3.0	3.8 ³⁾	dB
Amplitude ripple (p-p)	Δα	1930.6 ... 1989.4	MHz		1.6	2.4	dB
Input VSWR (ANT port)		1930.6 ... 1989.4	MHz		1.8	2.0 ²⁾	
		1930.6 ... 1989.4	MHz		1.8	2.7 ³⁾	
Output VSWR (RX port)		1930.6 ... 1989.4	MHz		1.9	2.0 ²⁾	
		1930.6 ... 1989.4	MHz		1.9	2.4 ³⁾	
Attenuation	α	50.0 ... 1770.0	MHz	30	36		dB
		1770.0 ... 1850.0	MHz	38	48		dB
		1850.6 ... 1908.9	MHz	51	54		dB
		1908.9 ... 1909.4	MHz	51 ⁴⁾	54		dB
		1908.9 ... 1909.4	MHz	48	54		dB
		2040.0 ... 2070.0	MHz	35	48		dB
		2400.0 ... 2500.0	MHz	40	55		dB
		3860.0 ... 3980.0	MHz	30	50		dB

- 1) Average value over indicated band.
- 2) +15 °C to +35 °C.
- 3) -30 °C to +15 °C and +35 °C to +85 °C.
- 4) -30 °C to +75 °C.



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Antenna terminating impedance: $Z_{ANT} = 50\ \Omega$
RX terminating impedance: $Z_{RX} = 50\ \Omega$
TX terminating impedance: $Z_{TX} = 50\ \Omega$

Characteristics TX - RX	min.	typ. @ 25 °C	max.	
Isolation α				
	1850.6 ... 1909.4 MHz	54	56	dB
	1930.6 ... 1989.4 MHz	49	56	dB



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Antenna terminating impedance:	Z _{ANT} = 50 Ω
RX terminating impedance:	Z _{RX} = 50 Ω
TX terminating impedance:	Z _{TX} = 50 Ω

Distortion products	min.	typ. @ 25 °C	max.
Harmonics level limits of Tx frequencies (1850 ... 1910 MHz) at antenna port¹⁾:			
H2 @ ANT		-35	dBm
H3 @ ANT		-65	dBm
IMD product level limits at Rx frequencies and at Rx port²⁾:			
Blocker 1 80.0 MHz		-112	dBm
Blocker 2 1770.0 ... 1830.0 MHz		-110	dBm
Blocker 3 3840.0 MHz		-86	dBm
Triple beat product level limits at Rx frequencies and at Rx port (rel. to CW jammer at ant. port)³⁾:			
f _{TX1} =1855 MHz, f _{TX2} =1856 MHz			
Blocker 1 1935.0 MHz		-90	dB
f _{TX1} =1880 MHz, f _{TX2} =1881 MHz			
Blocker 2 1960.0 MHz		-91	dB
f _{TX1} =1905 MHz, f _{TX2} =1906 MHz			
Blocker 3 1985.0 MHz		-87	dB

1) Harmonics level limits for power levels P_{TX}=+23.5dBm (antenna port output power).
 2) IMD product level limits for power levels P_{TX}=+21dBm (antenna port output power) and P_{Blocker}=-15dBm (antenna port input power).
 3) Triple beat product level limits for power levels P_{TX1}=P_{TX2}=+21dBm (Tx port input power) and P_{Blocker}=-27dBm CW@ Rx frequency (antenna port input power).



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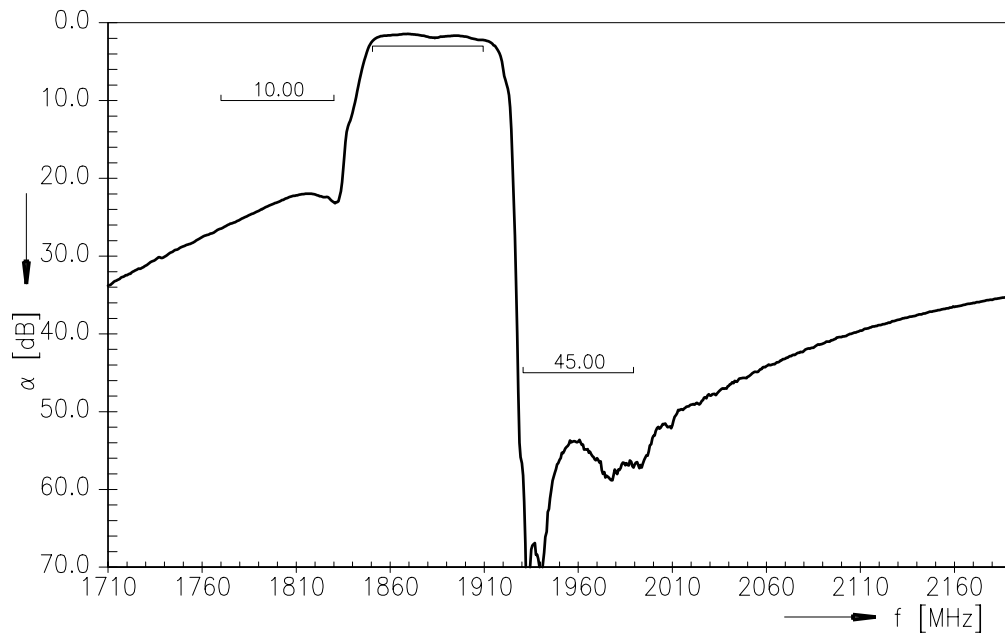
Maximum ratings

Operable temperature range	T	-30/+85	°C	machine model, 10 pulses source and load impedance 50 Ω } continuous wave T = 55°C, 5.000 h
Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	3	V	
ESD voltage	V _{ESD}	100 ¹⁾	V	
Input power at	P _{IN}			
1850.6 ... 1909.4 MHz		29	dBm	
elsewhere		10	dBm	

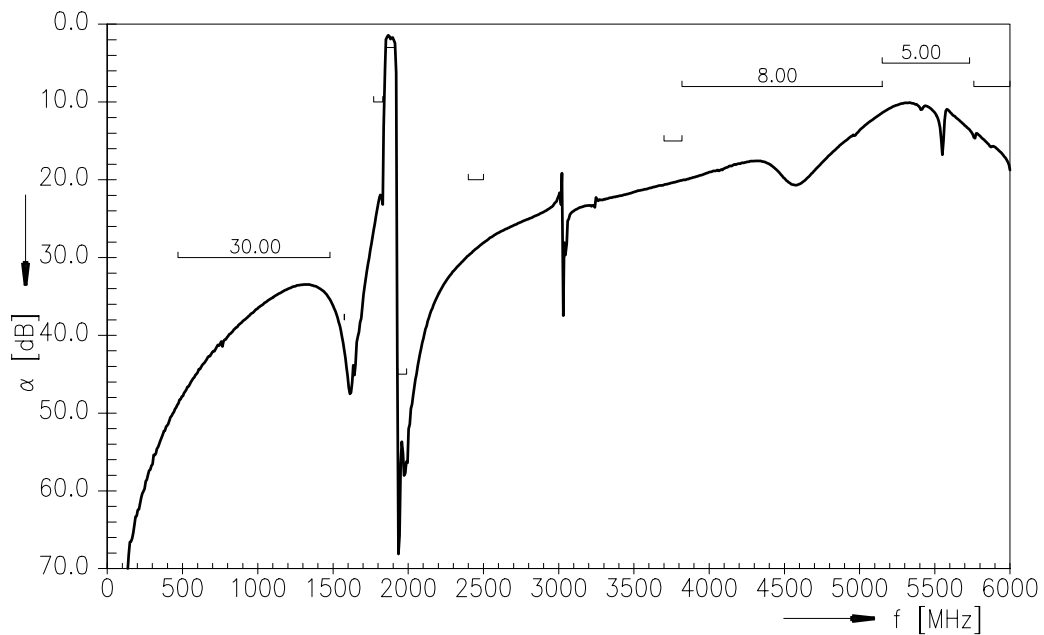
¹⁾ acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



Frequency response TX-ANT

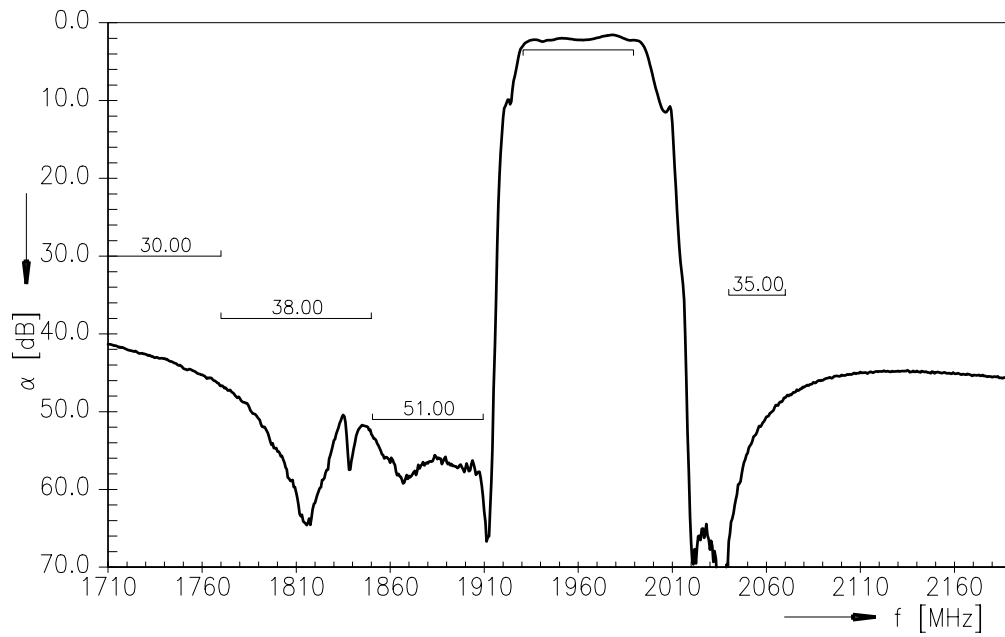


Frequency response TX-ANT (wideband)

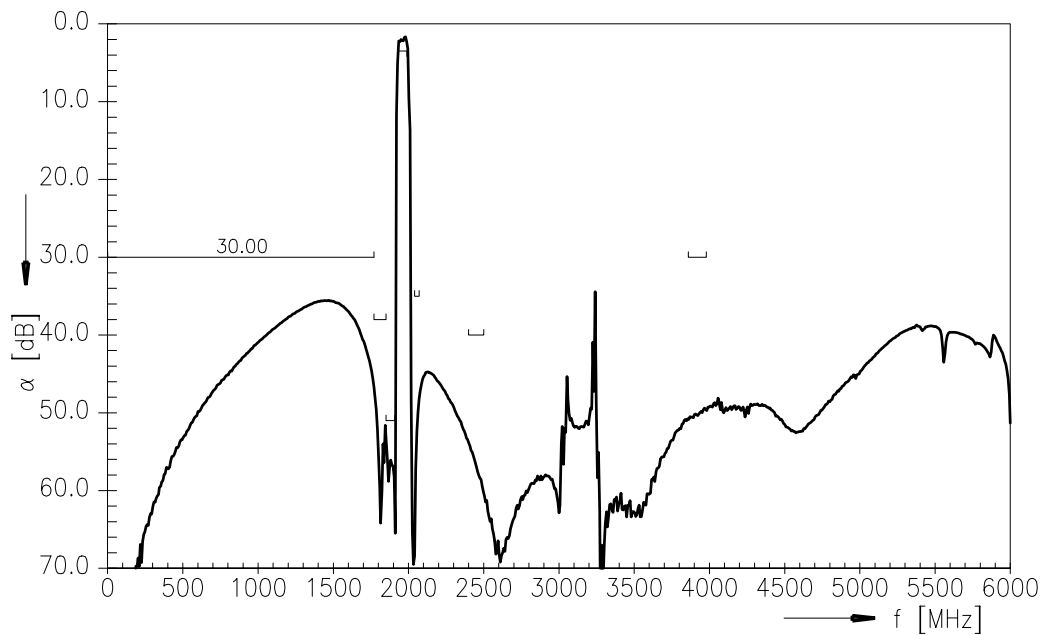




Frequency response ANT-RX

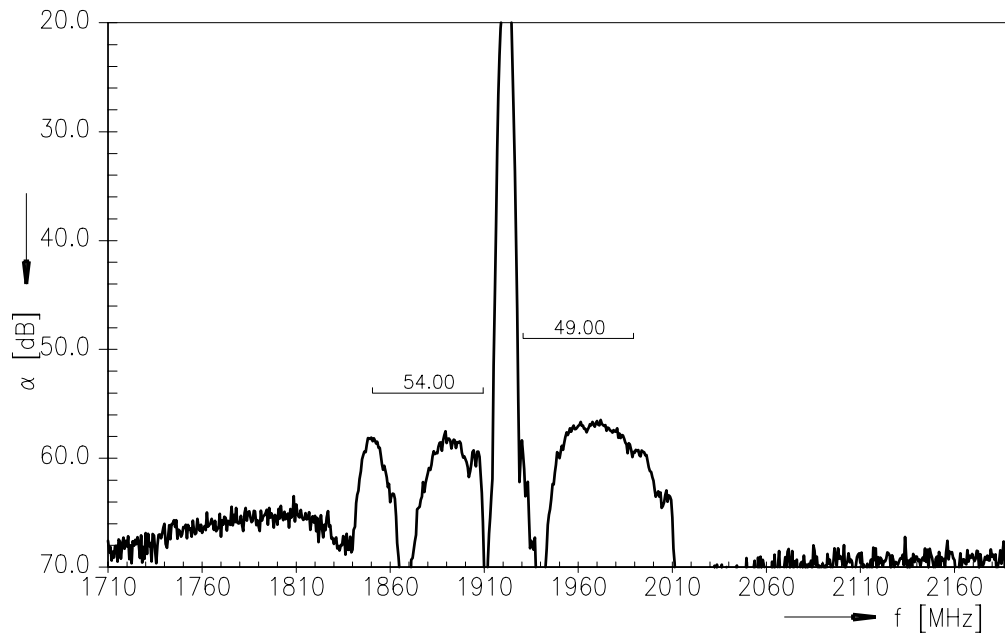


Frequency response ANT-RX (wideband)

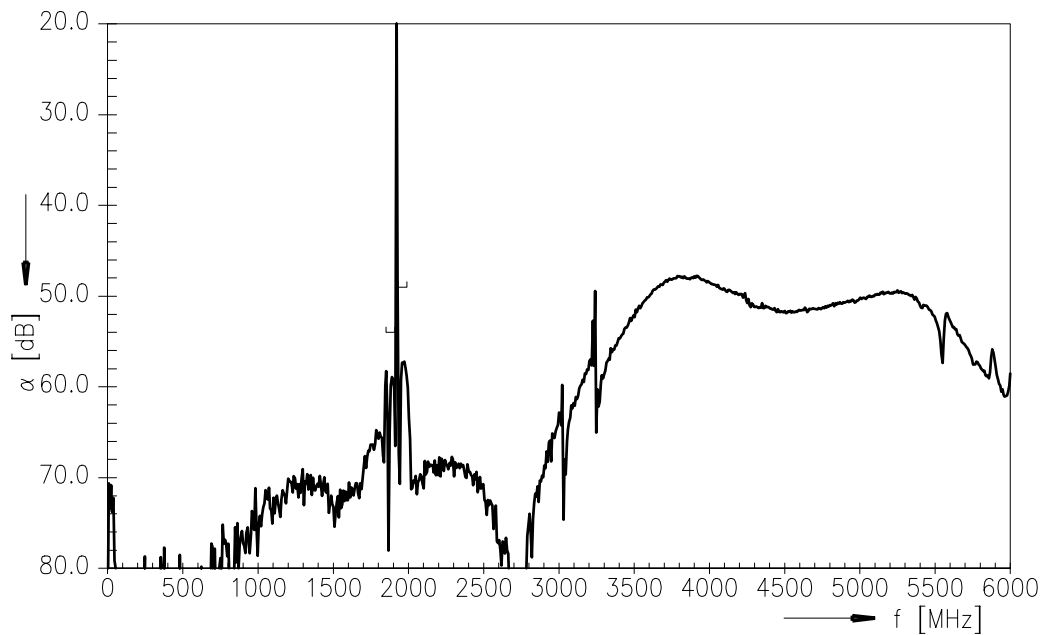




Frequency response TX-RX



Frequency response TX-RX (wideband)





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References

Type	B7685
Ordering code	B39202B7685L310
Marking and package	C61157-A3-A43
Packaging	F61074-V8211-Z000
Date codes	L_1126
S-parameters	B7685_NB.s3p / B7685_WB.s3p See file header for pin/port assignment
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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