SAW Components

BAW duplexer

1900 MHz CDMA (IS-95)

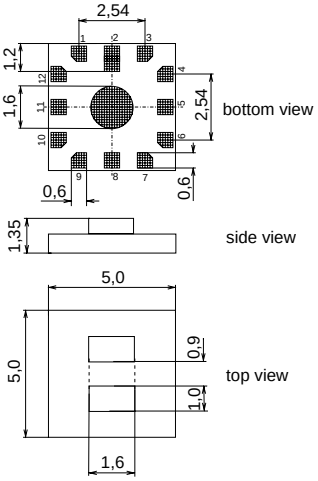
Series/type:	**B7633**
Ordering code:	**B39192B7633D810**
Date:	August 17, 2006
Version:	2.0

Application

- Low-loss RF duplexer for mobile telephone IS-95 CDMA systems

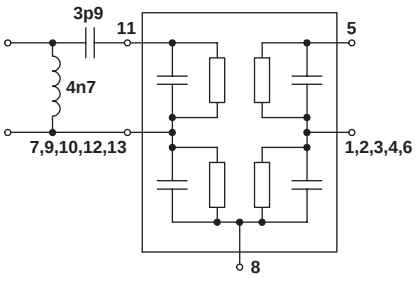
Features

- Package size 5.0 x 5.0 x 1.35 mm^3
- Package code QCS12E
- RoHS compatible
- Approximate weight 0.08 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- Ni-UBM
- Matching network required at TX-port



Pin configuration

■	11	TX input, single ended
■	5	RX output, single ended
■	8	Antenna
■	1, 2, 3, 4, 6	Ground
■	7, 9, 10, 12, 13	Ground



Data Sheet SMD

Characteristics

Operating temperature range: T = –30 ˚C to +85 ˚C
ANT 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
Maximum insertion attenuation	α_{max}					
1850.6 ... 1853.0 MHz			—	2.1	3.3	dB
1853.0 ... 1907.0 MHz			—	2.6	3.0	dB
1907.0 ... 1909.4 MHz			—	2.7	3.5	dB
Amplitude ripple (p-p)	$\Delta\alpha$					
1850.6 ... 1909.4 MHz			—	1.4	2.2	dB
Return loss						
TX port 1850.6 ... 1909.4 MHz			8.0	10.0	—	dB
ANT port 1850.6 ... 1989.4 MHz			6.0	8.0	—	dB
Attenuation	α					
0.3 ... 1570.0 MHz			31	33.5	—	dB
1570.0 ... 1580.0 MHz			30	32.5	—	dB
1580.0 ... 1800.0 MHz			29	31.5	—	dB
1930.6 ... 1935.0 MHz			42	51.5	—	dB
1935.0 ... 1989.4 MHz			38	41.5	—	dB
2400.0 ... 2500.0 MHz			34	36.5	—	dB
2500.0 ... 3400.0 MHz			20	28	—	dB
3400.0 ... 4400.0 MHz			25	30	—	dB
4400.0 ... 5550.0 MHz			5	7.5	—	dB
5550.0 ... 5730.0 MHz			5	7.5	—	dB

Data Sheet SMD

Characteristics

Operating temperature range: T = –30 ˚C to +85 ˚C
ANT terminating impedance: Z_{ANT} = 50 Ω
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
Maximum insertion attenuation	α_{max}				
1930.6 ... 1935.0 MHz		—	3.6	4.5[1)]	dB
1935.0 ... 1987.0 MHz		—	3.1	3.5	dB
1987.0 ... 1989.4 MHz		—	2.1	3.5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930.6 ... 1989.4 MHz		—	1.4	2.7	dB
Return loss					
RX port 1930.6 ... 1989.4 MHz		4.0	5.5	—	dB
ANT port 1850.6 ... 1989.4 MHz		6.0	8.0	—	dB
Attenuation	α				
0.3 ... 1770.0 MHz		33	35.5	—	dB
1770.0 ... 1850.6 MHz		39	41.5	—	dB
1850.6 ... 1905.0 MHz		54	57	—	dB
1905.0 ... 1909.4 MHz		48	58	—	dB
2010.0 ... 2070.0 MHz		7	20	—	dB
2070.0 ... 2750.0 MHz		39	41.5	—	dB
2750.0 ... 3350.0 MHz		20	34	—	dB
3350.0 ... 3500.0 MHz		39	41.5	—	dB
3500.0 ... 4500.0 MHz		30	40	—	dB
4500.0 ... 6000.0 MHz		20	25	—	dB

1) 4.0dB for 25˚C to 85˚C

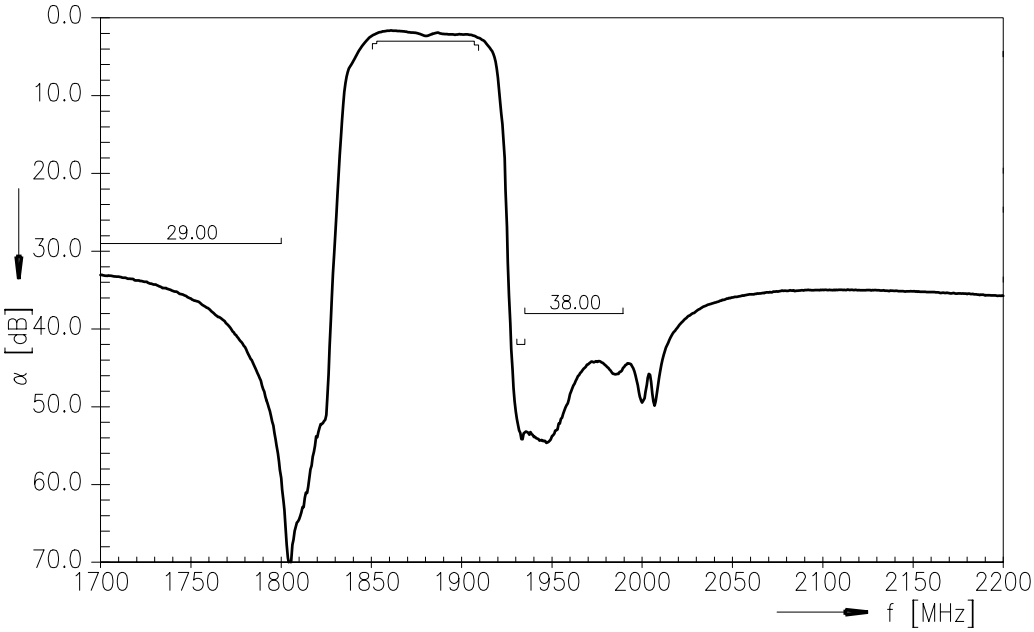
Characteristics TX-RX		min.	typ. @ 25°C	max.	
Isolation between RX and TX	α				
0.3 ... 1800.0 MHz		57	62	—	dB
1850.6 ... 1907.0 MHz		54	58	—	dB
1907.0 ... 1909.4 MHz		50	57	—	dB
1930.6 ... 1935.0 MHz		44	54	—	dB
1935.0 ... 1989.4 MHz		42	44	—	dB
2070.0 ... 4200.0 MHz		53	60	—	dB

Maximum ratings

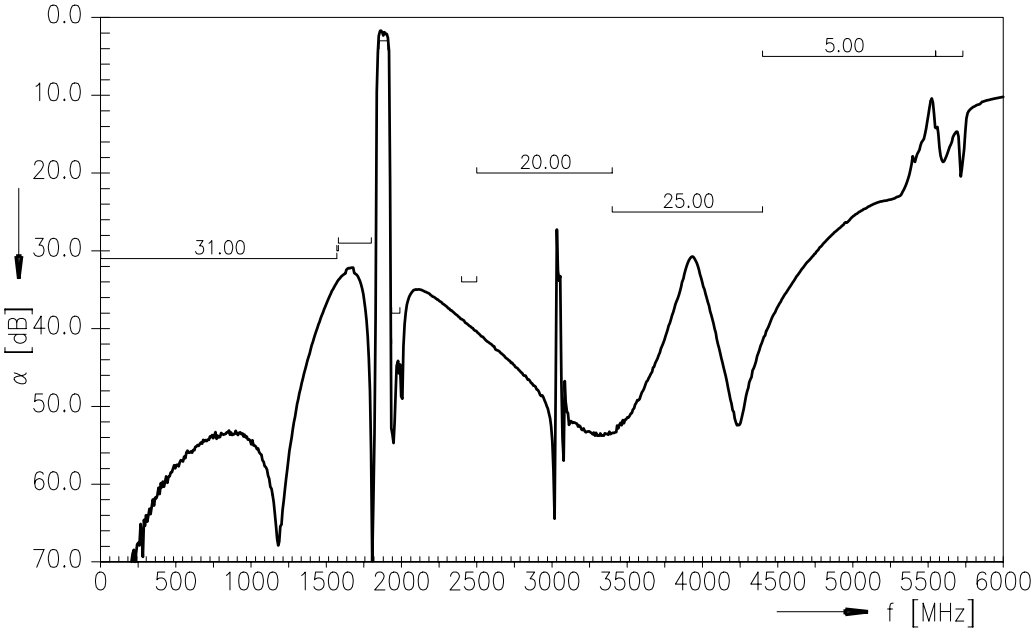
Operable temperature range	T	–30 / +85	˚C	
Storage temperature range	T_{stg}	–40 / +85	˚C	
DC voltage	V_{DC}	3	V	
ESD voltage	V_{ESD}	100[1)]	V	source and load impedance 50 Ω
Input Power at				
1850.6 ... 1909.4 MHz	P_{IN}	29	dBm	CDMA modulated signal
elsewhere	P_{IN}	10	dBm	CW

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

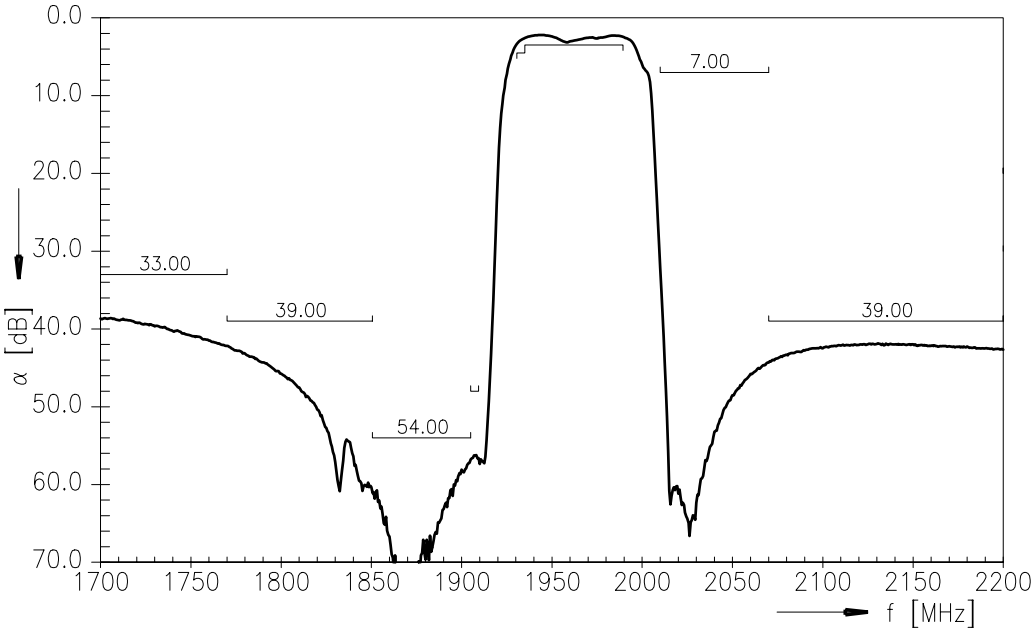
Frequency Response TX - ANT



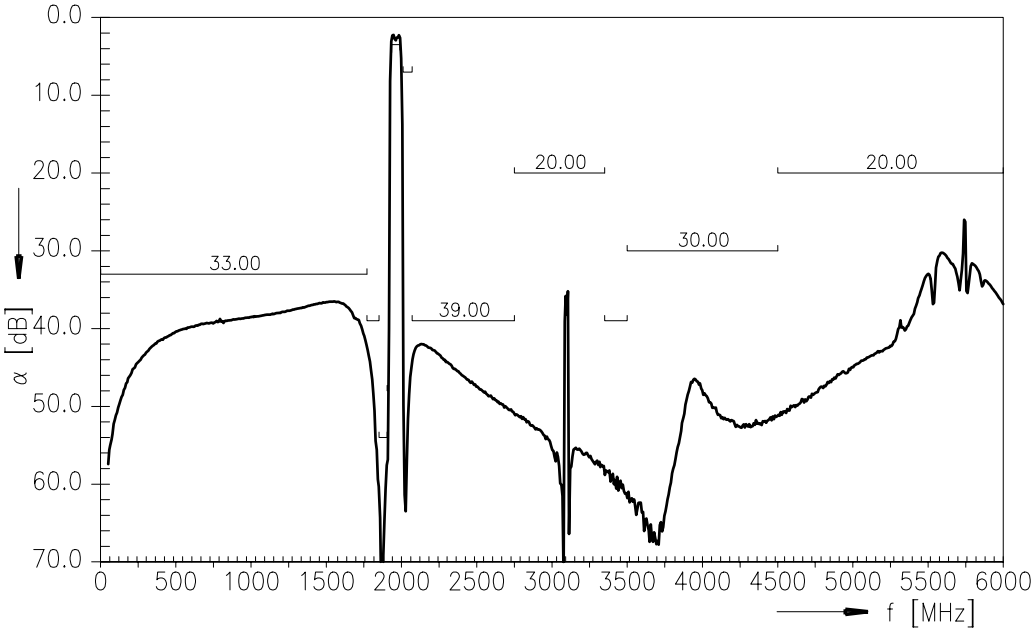
Frequency Response TX - ANT (wideband)



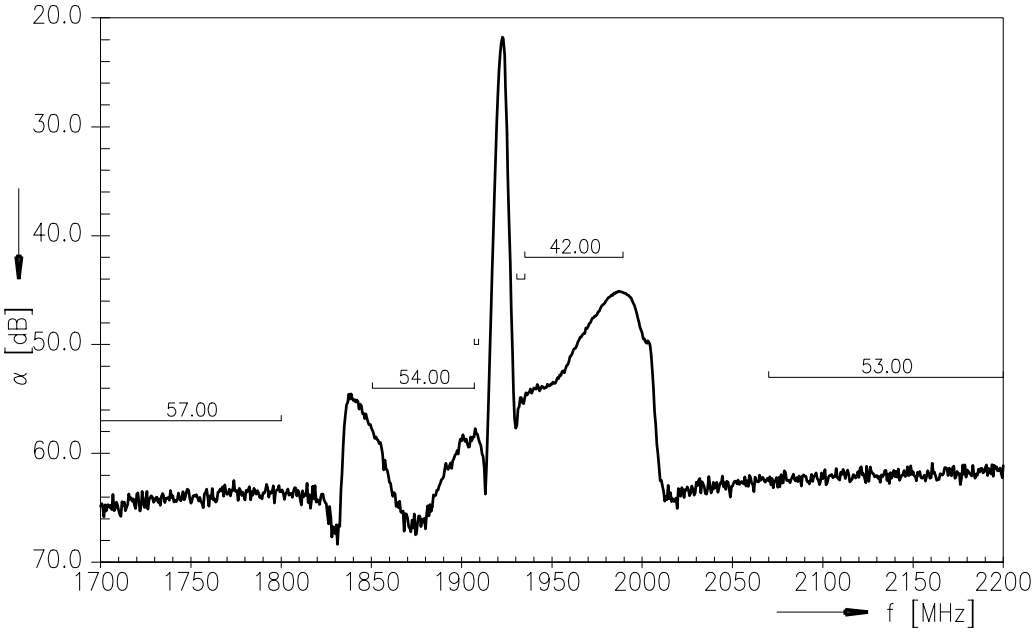
Frequency Response ANT - RX



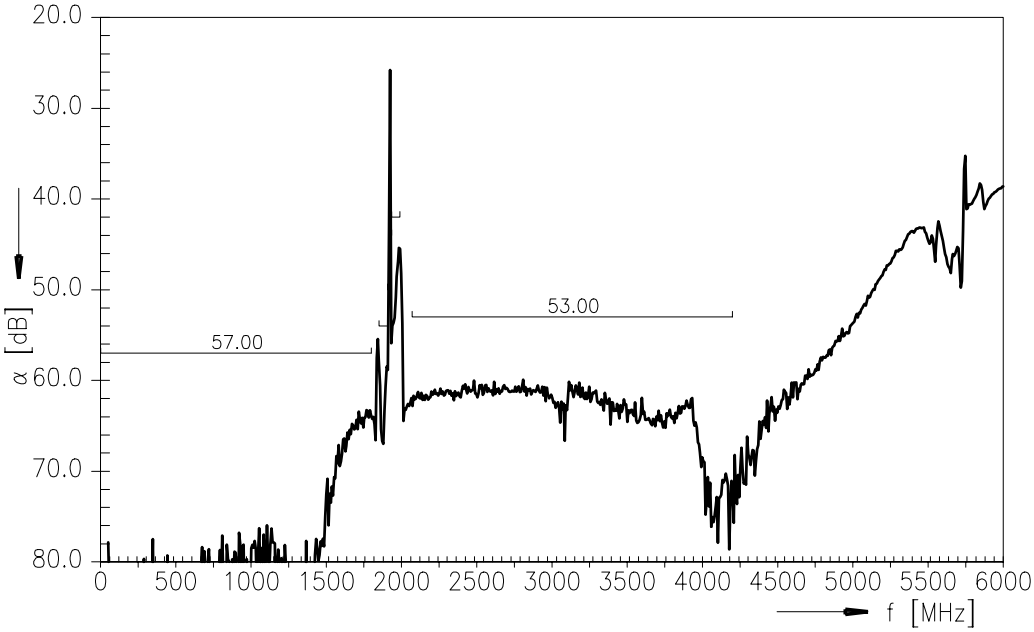
Frequency Response ANT - RX (wideband)



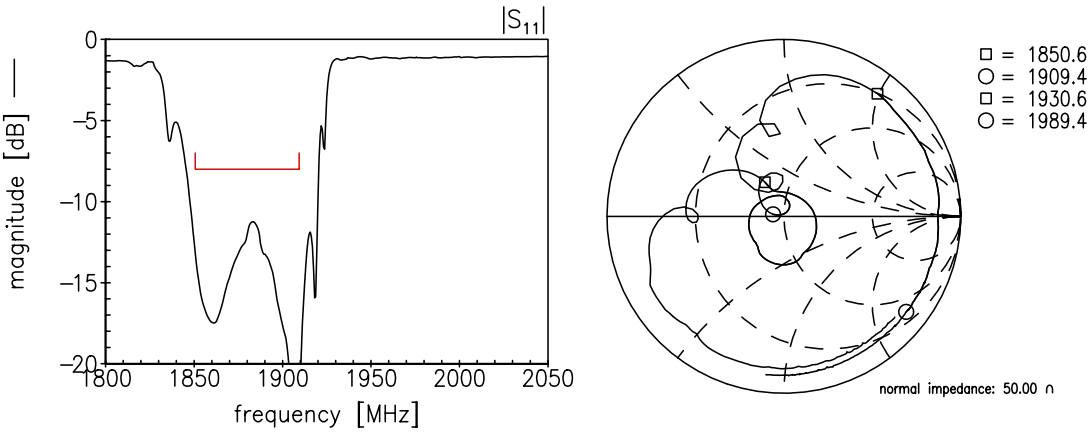
Frequency Response TX - RX

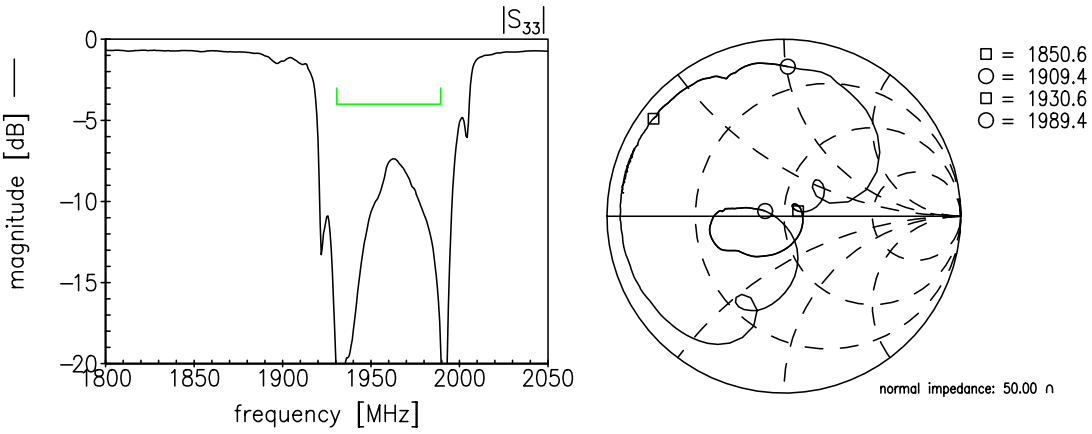


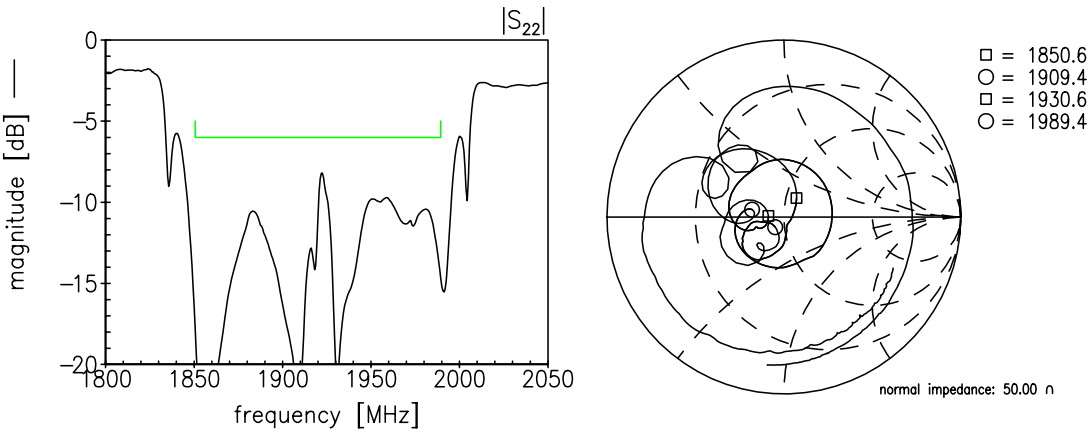
Frequency Response TX - RX (wideband)



Return Loss: **S_{11} TX-port** **S_{22} ANT-port** **S_{33} RX-port**







References

Type	B7633
Ordering code	B39192-B7633-D810
Marking and Package	C61157-A3-A5
Packaging	F61074-V8159-Z000
Date Codes	L_1126
S-Parameters	B7633_NB.s3p B7633_WB.s3p
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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