



## SAW Components

### BAW duplexer

1900 MHz CDMA (IS-95)

<b>Series/type:</b>	<b>B7633</b>
<b>Ordering code:</b>	<b>B39192B7633D810</b>
Date:	August 17, 2006
Version:	2.0

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1880.00 / 1960.00 MHz

Data Sheet



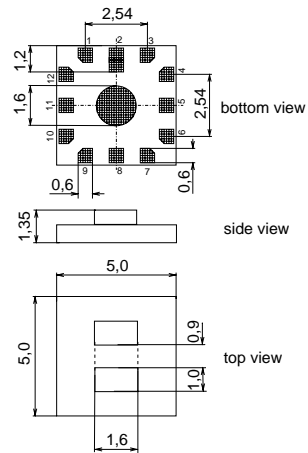
### Application

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



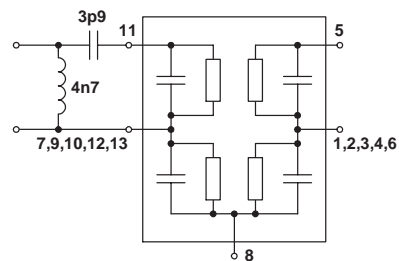
### Features

- Package size 5.0 x 5.0 x 1.35 mm<sup>3</sup>
- Package code QCS12E
- RoHS compatible
- Approximate weight 0.08 g
- Package for **Surface Mount Technology (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



Please read *cautions and warnings and important notes* at the end of this document.



Data Sheet



Characteristics

Operating temperature range: T = -30 °C to +85 °C  
 ANT terminating impedance: Z<sub>ANT</sub> = 50 Ω  
 RX terminating impedance: Z<sub>RX</sub> = 50 Ω  
 TX terminating impedance: Z<sub>TX</sub> = 50 Ω

Characteristics TX-ANT				min.	typ. @ 25°C	max.	
<b>Center frequency</b>			f <sub>C</sub>	—	1880.0	—	MHz
<b>Maximum insertion attenuation</b>			α <sub>max</sub>				
	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
<b>Amplitude ripple (p-p)</b>			Δα				
	1850.6 ... 1909.4	MHz		—	1.4	2.2	dB
<b>Return loss</b>							
TX port	1850.6 ... 1909.4	MHz		8.0	10.0	—	dB
ANT port	1850.6 ... 1989.4	MHz		6.0	8.0	—	dB
<b>Attenuation</b>			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



Characteristics

Operating temperature range: T = -30 °C to +85 °C  
 ANT terminating impedance: Z<sub>ANT</sub> = 50 Ω  
 RX terminating impedance: Z<sub>RX</sub> = 50 Ω  
 TX terminating impedance: Z<sub>TX</sub> = 50 Ω

Characteristics ANT-RX

				min.	typ. @ 25°C	max.	
<b>Center frequency</b>			f <sub>C</sub>	—	1960.0	—	MHz
<b>Maximum insertion attenuation</b>			α <sub>max</sub>				
	1930.6 ... 1935.0	MHz		—	3.6	4.5 <sup>1)</sup>	dB
	1935.0 ... 1987.0	MHz		—	3.1	3.5	dB
	1987.0 ... 1989.4	MHz		—	2.1	3.5	dB
<b>Amplitude ripple (p-p)</b>			Δα				
	1930.6 ... 1989.4	MHz		—	1.4	2.7	dB
<b>Return loss</b>							
RX port	1930.6 ... 1989.4	MHz		4.0	5.5	—	dB
ANT port	1850.6 ... 1989.4	MHz		6.0	8.0	—	dB
<b>Attenuation</b>			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



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Characteristics TX-RX				min.	typ. @ 25°C	max.	
<b>Isolation between RX and TX</b>							
			$\alpha$				
	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

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### Maximum ratings

Operable temperature range	T	-30 / +85	°C	
Storage temperature range	T <sub>stg</sub>	-40 / +85	°C	
DC voltage	V <sub>DC</sub>	3	V	
ESD voltage	V <sub>ESD</sub>	100 <sup>1)</sup>	V	source and load impedance 50 Ω
Input Power at				
1850.6 ... 1909.4 MHz	P <sub>IN</sub>	29	dBm	CDMA modulated signal
elsewhere	P <sub>IN</sub>	10	dBm	CW

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

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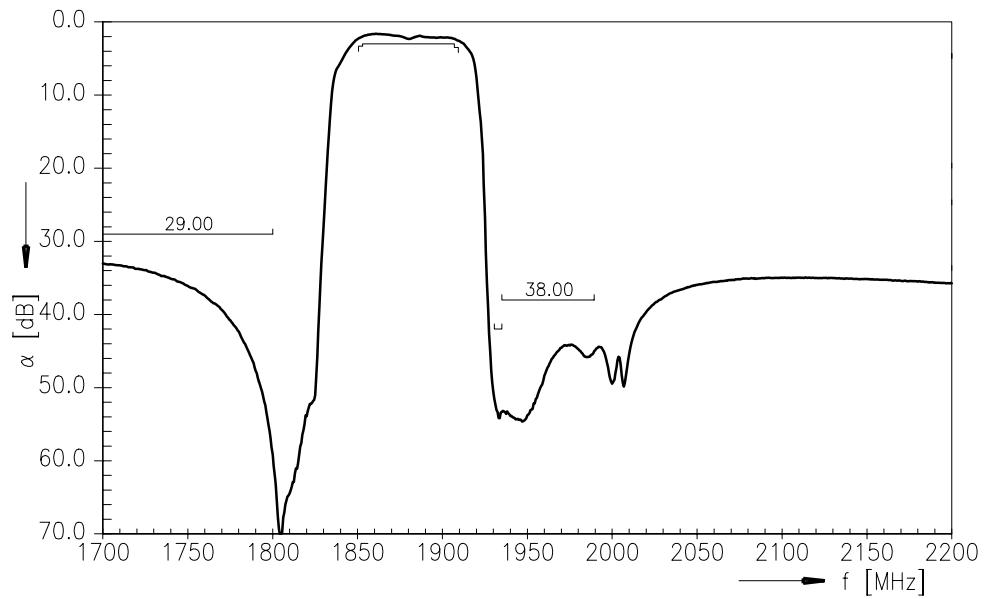
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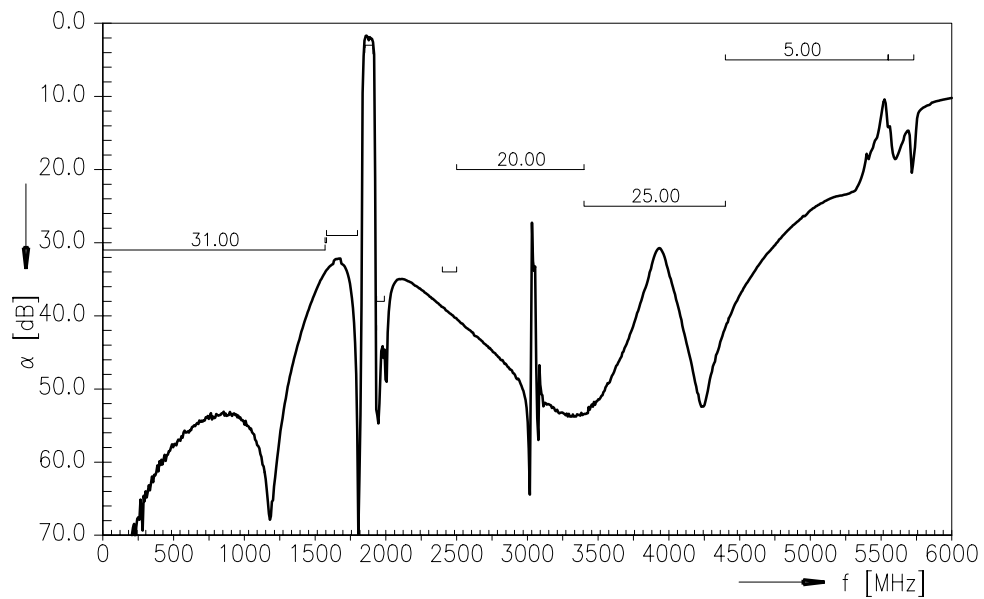
Data Sheet



Frequency Response TX - ANT



Frequency Response TX - ANT (wideband)



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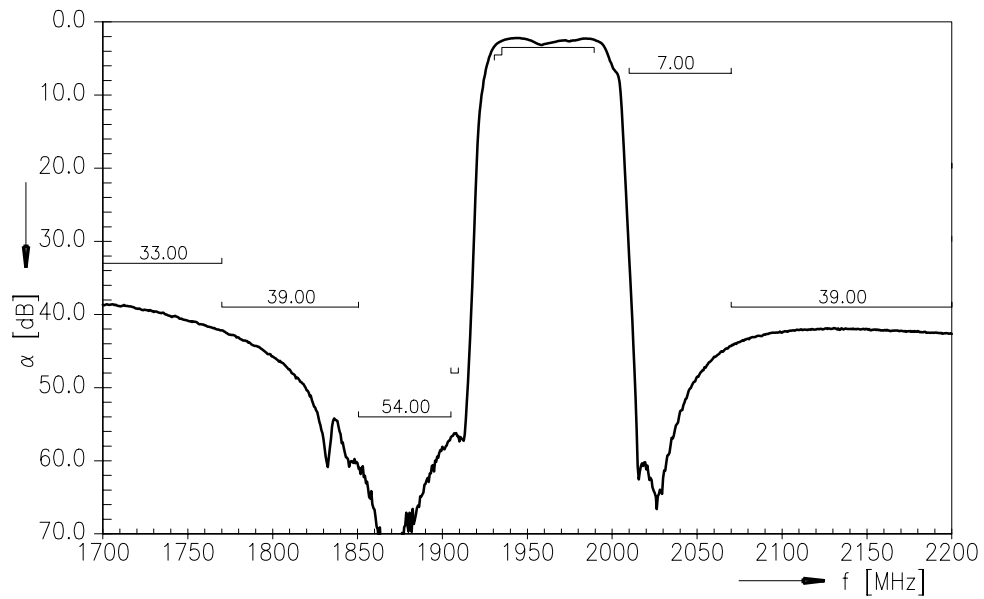
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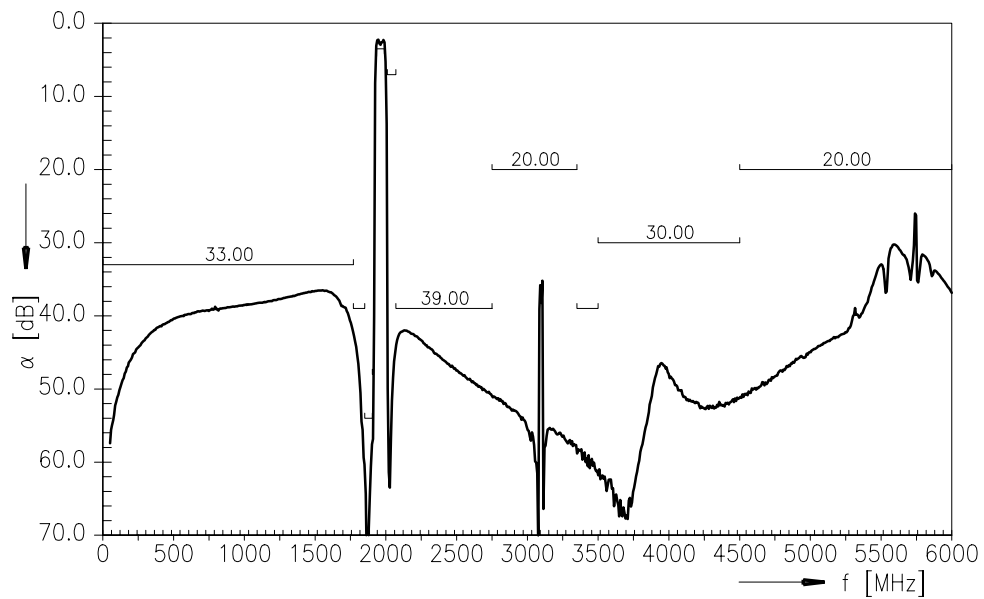
Data Sheet



Frequency Response ANT - RX



Frequency Response ANT - RX (wideband)



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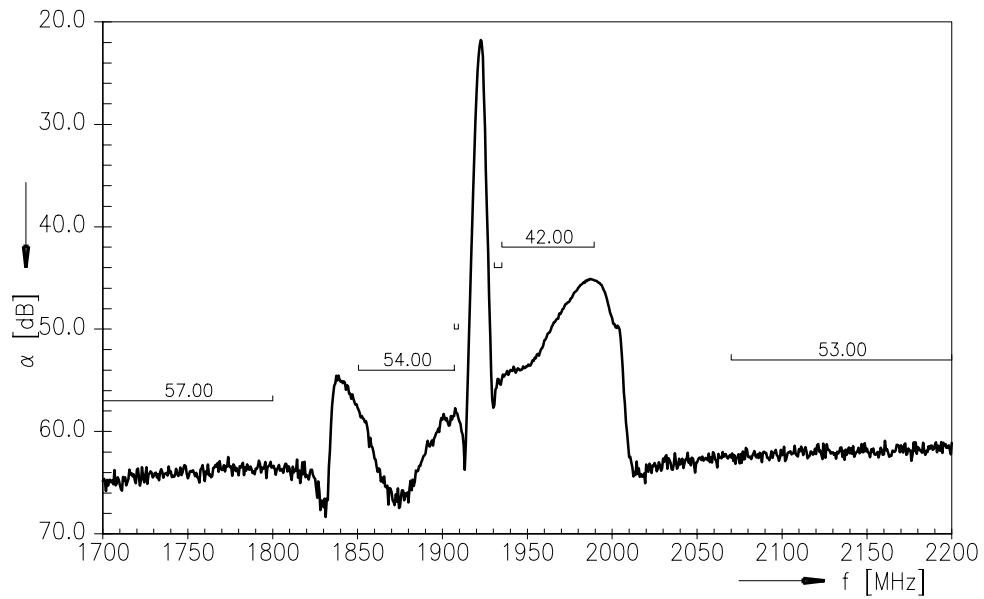
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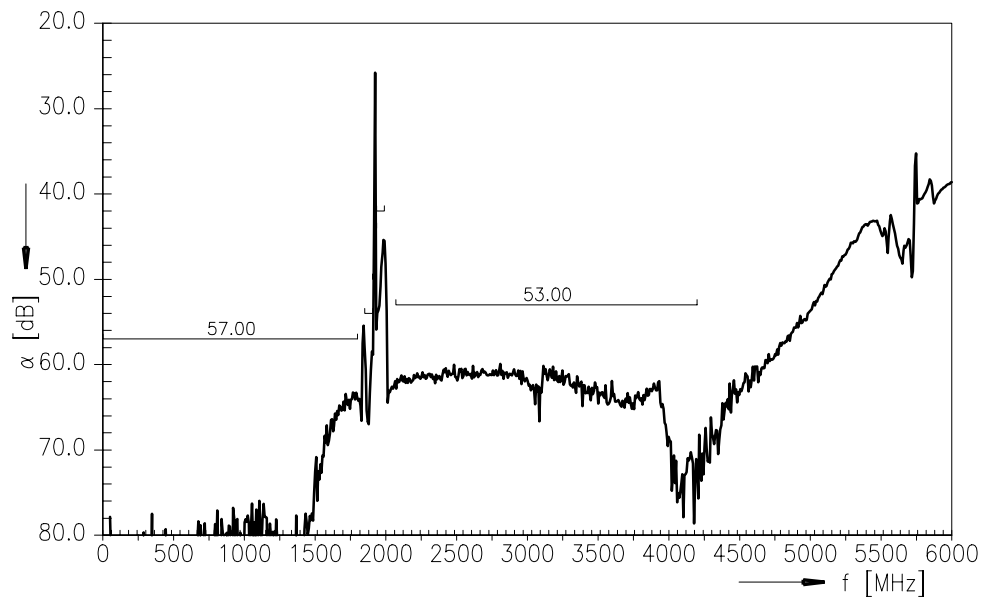
Data Sheet



Frequency Response TX - RX



Frequency Response TX - RX (wideband)



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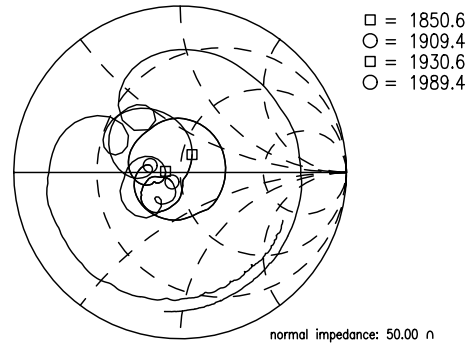
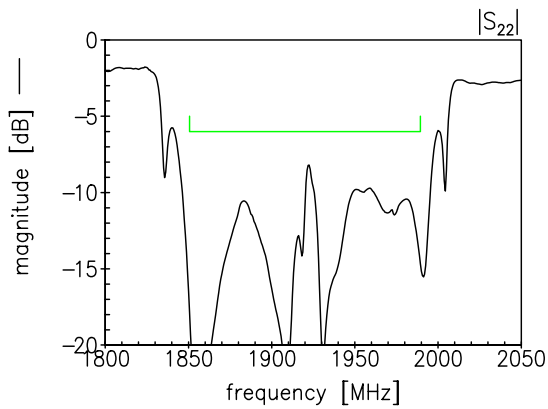
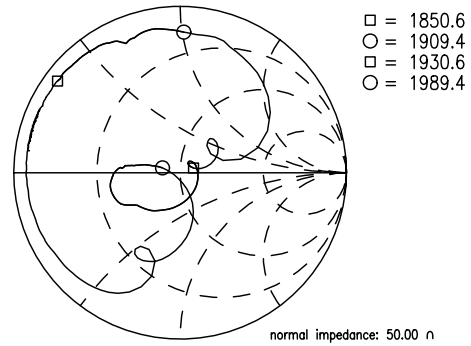
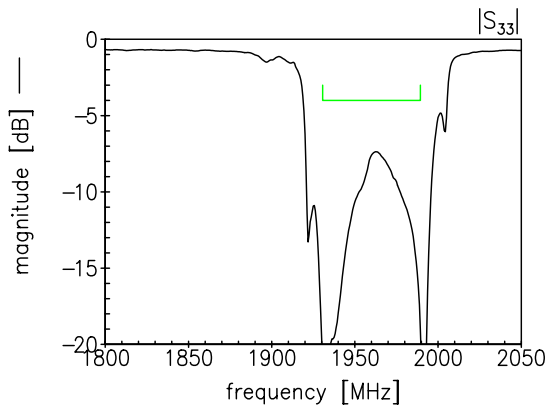
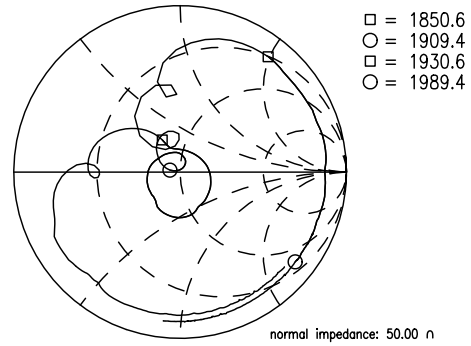
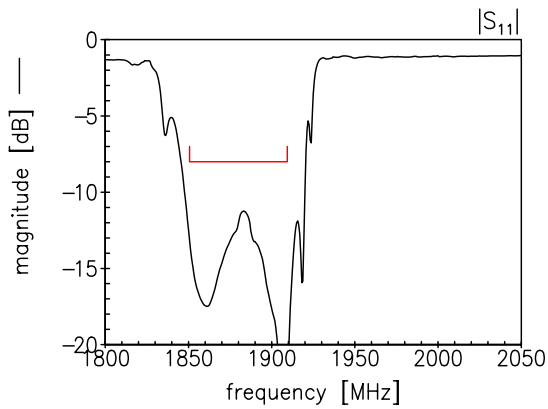
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Return Loss:  $S_{11}$  TX-port

$S_{22}$  ANT-port

$S_{33}$  RX-port



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**References**

<b>Type</b>	B7633
<b>Ordering code</b>	B39192-B7633-D810
<b>Marking and Package</b>	C61157-A3-A5
<b>Packaging</b>	F61074-V8159-Z000
<b>Date Codes</b>	L_1126
<b>S-Parameters</b>	B7633_NB.s3p B7633_WB.s3p
<b>Soldering profile</b>	S_6001
<b>RoHS compatible</b>	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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**11** August 17, 2006



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