



SAW Components

SAW Duplexer

LTE Band II (PCS)

Series/type:	B8663
Ordering code:	B39202-B8663-P810
Date:	November 18, 2014
Version:	2.1

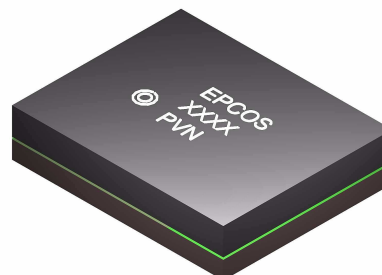
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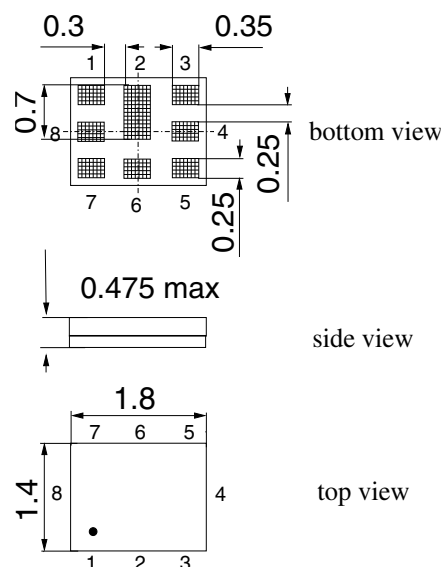
Data sheet

Application

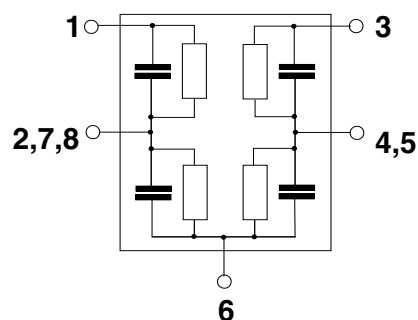
- Low-loss SAW duplexer for mobile telephone
LTE Band II (PCS) systems
- Low insertion attenuation
- Low amplitude ripple
- Usable passband 60 MHz


Features

- Package size 1.8 x 1.4 mm²,
max. height 0.475 mm
- RoHS compatible
- Approx. weight 0.0035 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitive Level 3 (MSL)**


Pin configuration

- 3 TX input
- 1 RX output
- 6 Antenna
- 2, 4, 5, 7, 8 To be grounded



Data sheet


Characteristics

Temperature range for specification:	T = -20 °C to +90 °C
ANT terminating impedance:	Z _{ANT} = 50 Ω 3.5 nH
RX terminating impedance:	Z _{RX} = 50 Ω + 1.6 nH
TX terminating impedance:	Z _{TX} = 50 Ω

Characteristics TX - ANT		B8663			
		min.	typ. @ 25 °C	max.	
Center frequency	f _C	—	1880.0	—	MHz
Maximum insertion attenuation	1852.5 ... 1907.5 MHz α _{LTE} 1)	—	1.6	2.5	dB
Error Vector Magnitude	@f _{Carrier} 1852.4 ... 1907.6 MHz EVM 2)	—	0.6	3.0	%
Input VSWR (TX port)	1850.24 ... 1909.76 MHz	—	1.3	2.0	
Output VSWR (RX port)	1850.24 ... 1909.76 MHz	—	1.3	2.0	
Attenuation	α				
	10.0 ... 787.0 MHz	30	43	—	dB
	728.0 ... 764.0 MHz	40	43	—	dB
	869.0 ... 894.0 MHz	38	41	—	dB
	1226.0 ... 1250.0 MHz	35	37	—	dB
	1559.0 ... 1585.5 MHz	41	45	—	dB
	1597.5 ... 1605.9 MHz	41	48	—	dB
	1605.8 ... 1680.0 MHz	30	40	—	dB
	1932.5 ... 1987.5 MHz α _{LTE}	44	52	—	dB
	2010.0 ... 2025.0 MHz	20	50	—	dB
	2110.0 ... 2155.0 MHz	30	33	—	dB
	2400.0 ... 2500.0 MHz	10	14	—	dB
	3700.0 ... 3820.0 MHz	27	30	—	dB
	4900.0 ... 5950.0 MHz	21	25	—	dB
	5550.0 ... 5730.0 MHz	23	27	—	dB

1) Averaged value of linear s-parameter over 5 MHz

2) Error Vector Magnitude (EVM) based on definition given in 3GPP TS 25.141.

Data sheet


Characteristics

Temperature range for specification:	T = -20 °C to +90 °C
ANT terminating impedance:	Z _{ANT} = 50 Ω 3.5 nH
RX terminating impedance:	Z _{RX} = 50 Ω + 1.6 nH
TX terminating impedance:	Z _{TX} = 50 Ω

		B8663			
Characteristics ANT - RX		min.	typ. @ 25°C	max.	
Center frequency	f _C	—	1960.0	—	MHz
Maximum insertion attenuation					
	1932.5 ... 1987.5 MHz α _{LTE} ¹⁾	—	2.1	3.0	dB
Input VSWR (ANT port)	1930.24 ... 1989.76 MHz	—	1.3	2.0	
Output VSWR (RX port)	1930.24 ... 1989.76 MHz	—	1.2	2.0	
Attenuation	α				
	0.2 ... 1850.0 MHz	43	46	—	dB
	80.0 MHz	50	>60	—	dB
	1852.5 ... 1907.5 MHz α _{LTE}	45	52	—	dB
	2050.0 ... 2075.0 MHz	25	37	—	dB
	2075.0 ... 2350.0 MHz	35	44	—	dB
	2350.0 ... 2550.0 MHz	20	28	—	dB
	2550.0 ... 6000.0 MHz	40	51	—	dB
	5610.0 ... 5845.0 MHz	48	52	—	dB

1) Averaged value of linear s-parameter over 5 MHz

		B8663			
Characteristics TX - RX		min.	typ. @ 25°C	max.	
Isolation	α				
	1574.0 ... 1577.0 MHz	40	64	—	dB
	1852.5 ... 1907.5 MHz α _{LTE} ¹⁾	54	58	—	dB
	1932.5 ... 1987.5 MHz α _{LTE}	55	62	—	dB
	3700.0 ... 3820.0 MHz	20	56	—	dB
	5550.0 ... 5850.0 MHz	20	53	—	dB

1) Averaged value of linear s-parameter over 5 MHz

Maximum ratings

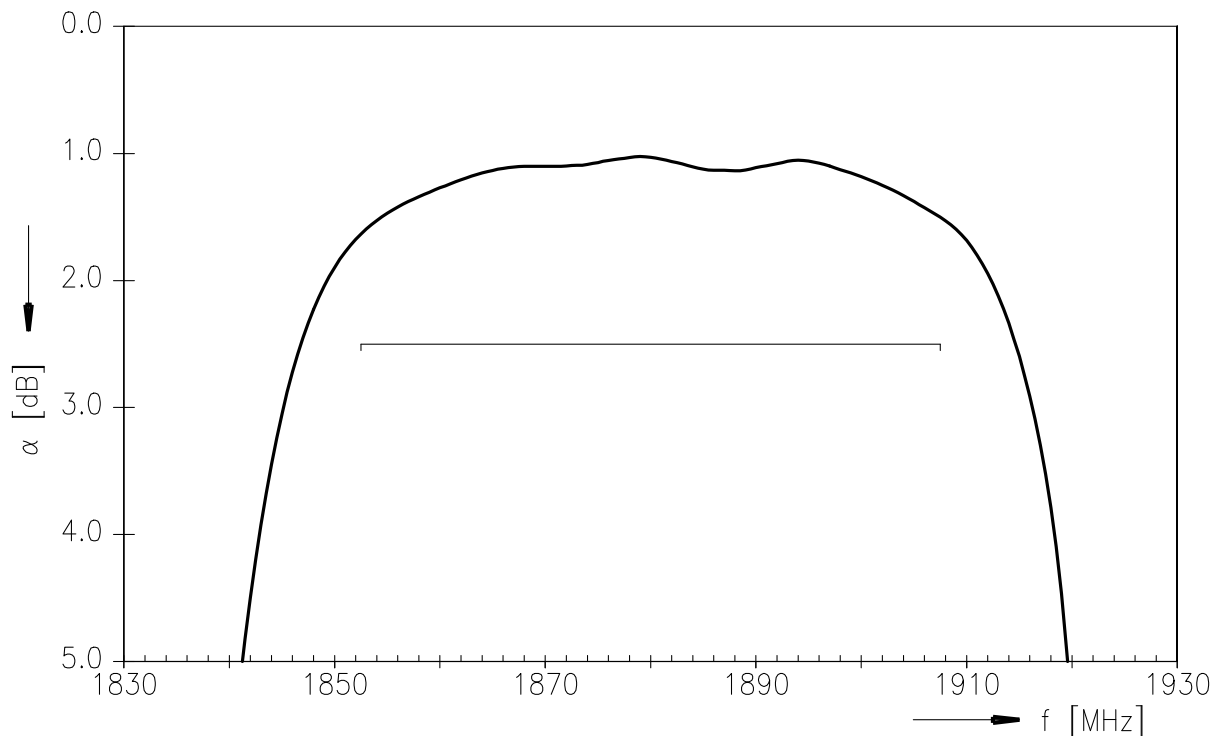
Operable temperature range	T	-30/+90	°C	
Storage temperature range	T _{stg}	-40/+90	°C	
DC voltage	V _{DC}	0	V	
ESD voltage	V _{ESD}	250	V	human body model ¹⁾
ESD voltage	V _{ESD}	600	V	charge device model ²⁾
ESD voltage	V _{ESD}	150	V	machine model ³⁾
Input power at	P _{IN}			source and load impedance 50 Ω
1850.24 ... 1909.76 MHz		29	dBm	} continuous wave T = 50 °C, >5.000 h
elsewhere		10	dBm	

1) acc. to JESD22-A114F (HBM)

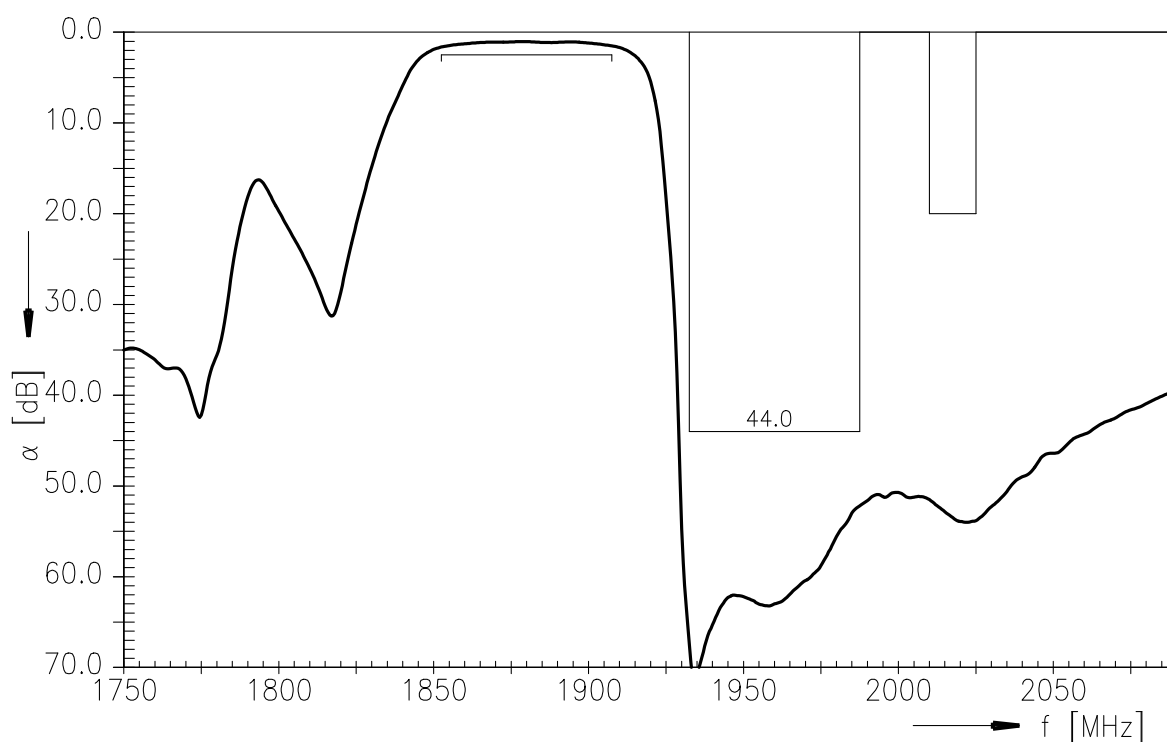
2) acc. to JESD22-C101C (CDM)

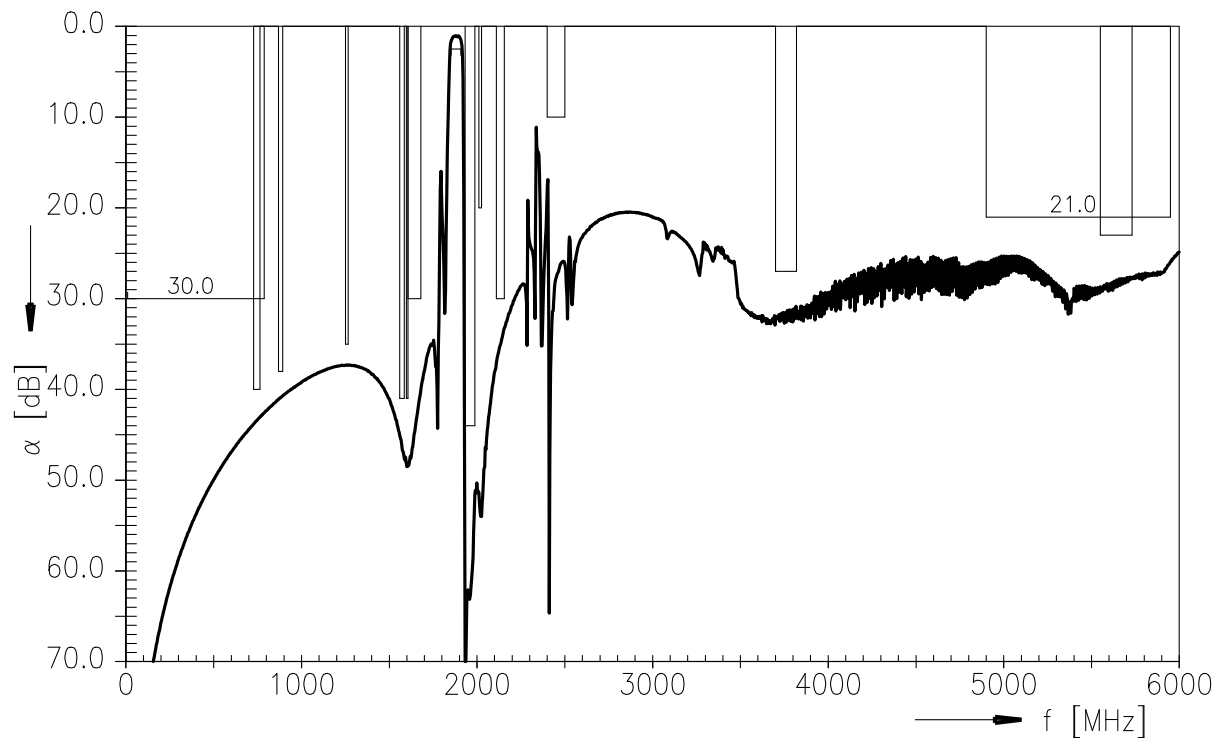
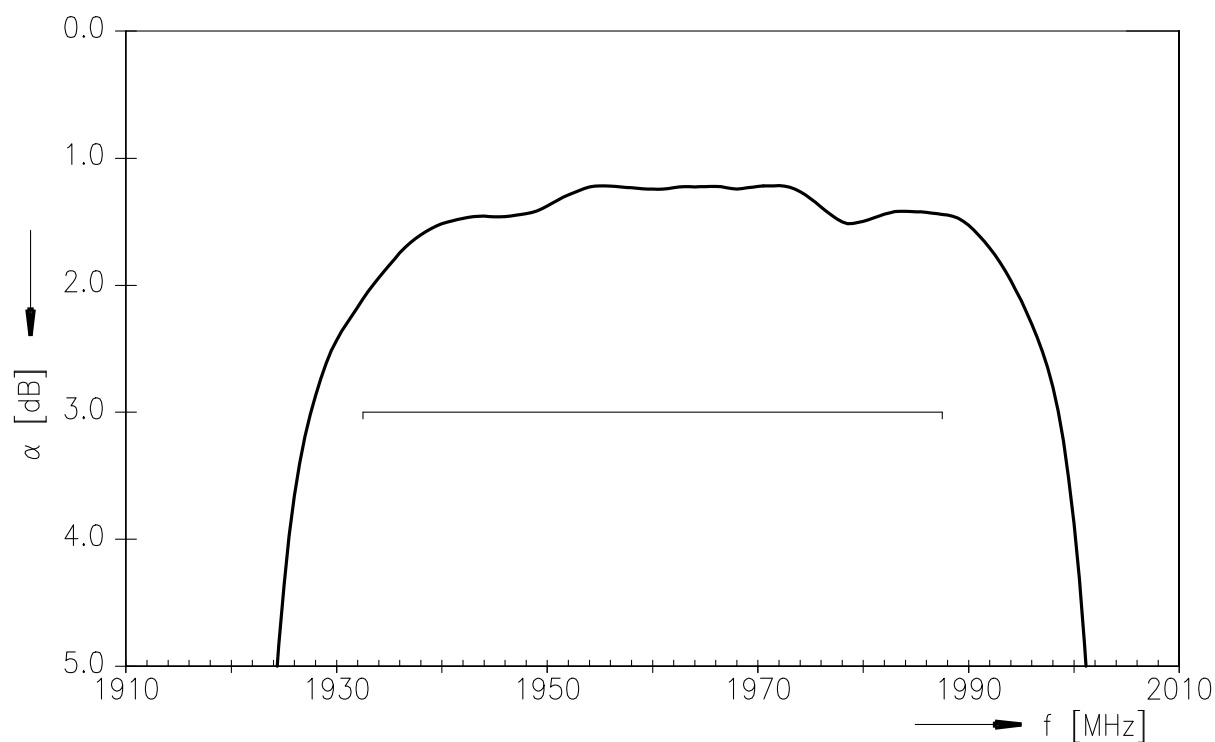
3) acc. to JESD22-A115B (MM)

Frequency response TX - ANT (passband, averaged value of linear s-parameter over 5 MHz)

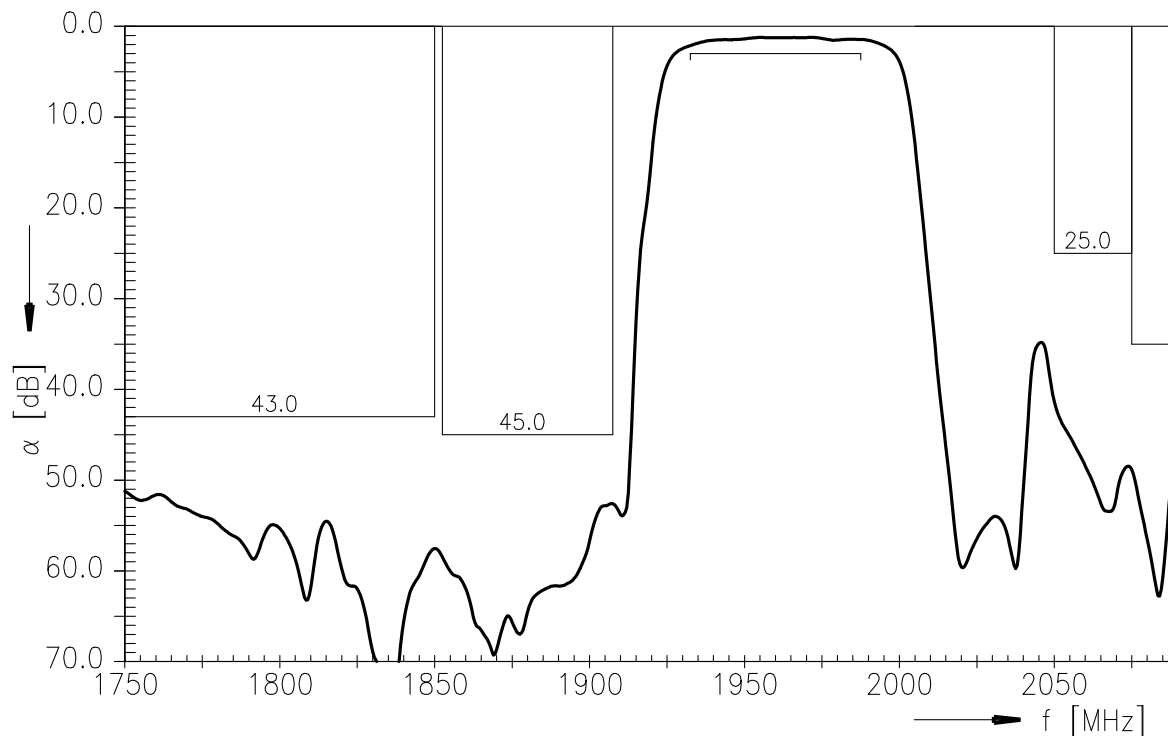


Frequency response TX - ANT (averaged value of linear s-parameter over 5 MHz)

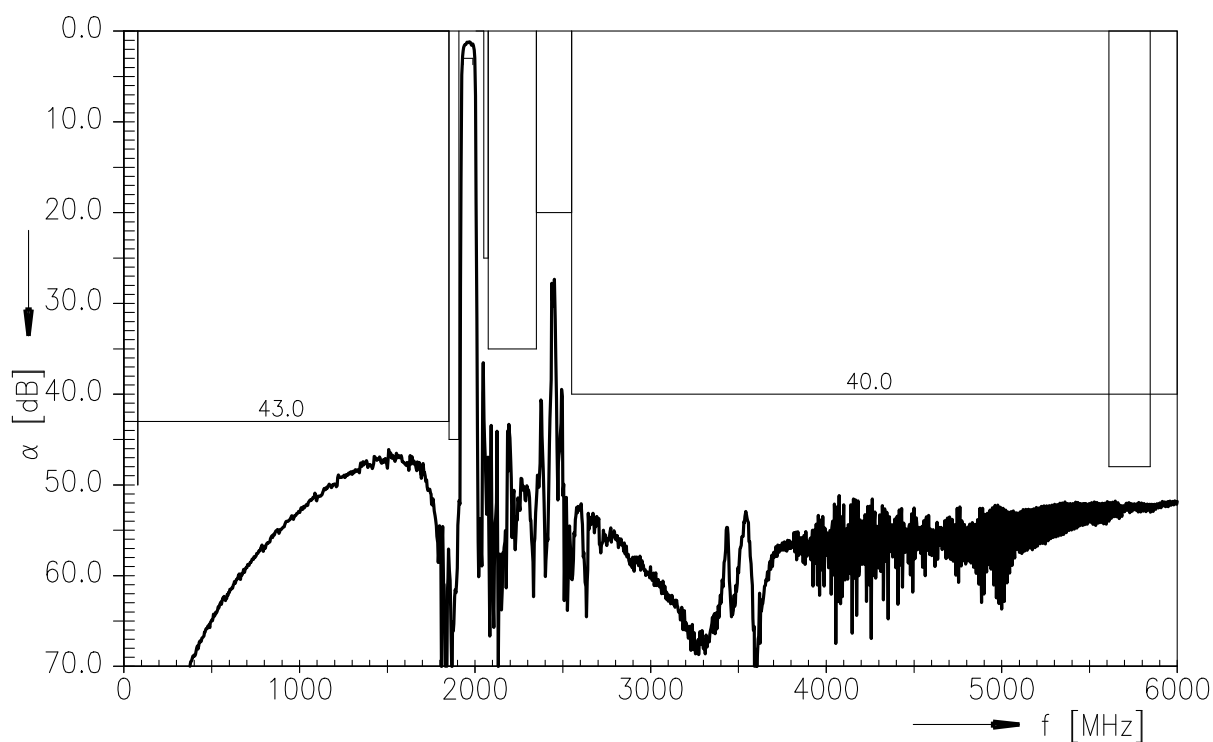


Frequency response TX - ANT (wideband)

Frequency response ANT - RX (passband, averaged value of linear s-parameter over 5 MHz)


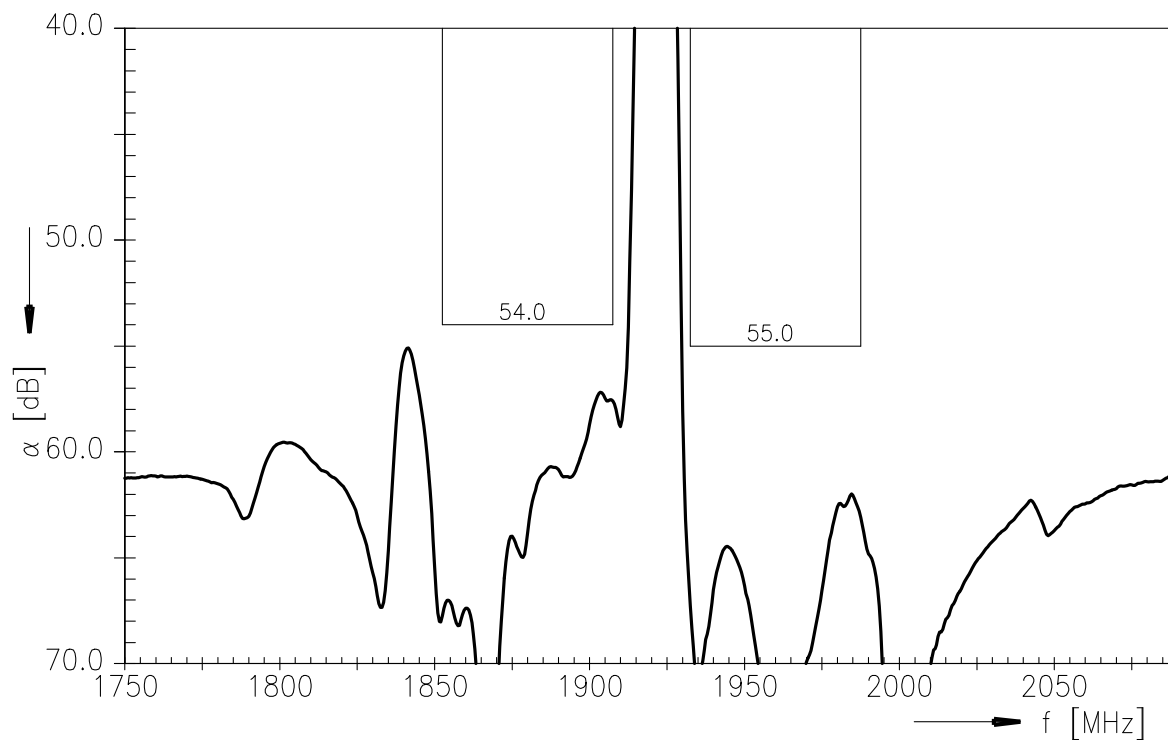
Frequency response ANT - RX (averaged value of linear s-parameter over 5 MHz)



Frequency response ANT - RX (wideband)



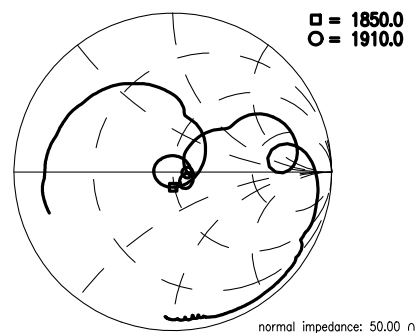
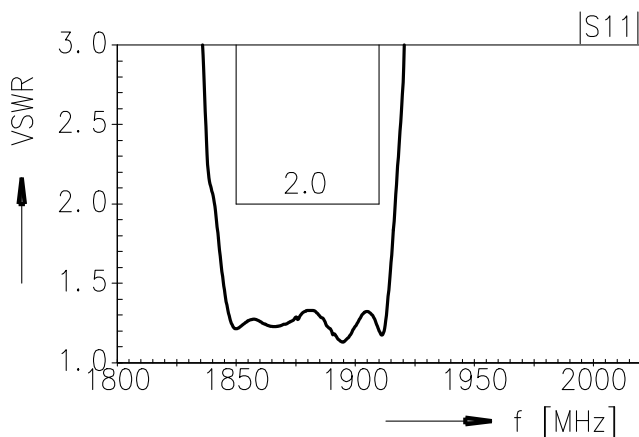
Data sheet

SMD
Frequency response TX - RX isolation (averaged value of linear s-parameter over 5 MHz)


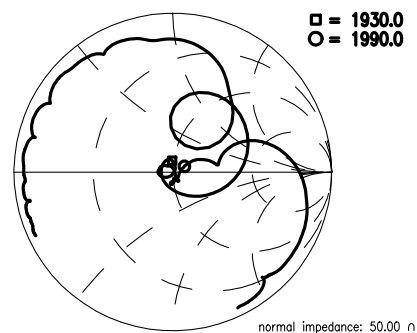
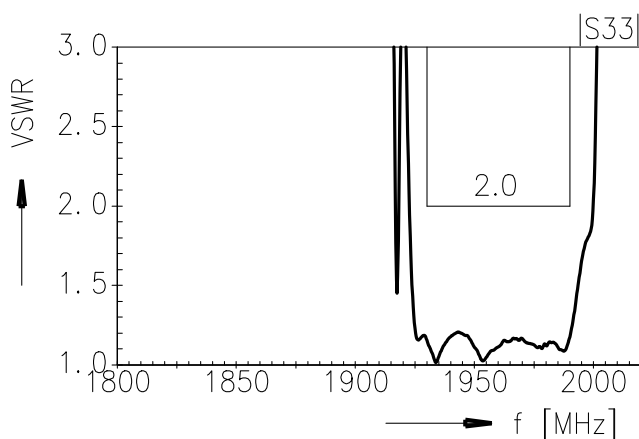
Data sheet

SMD

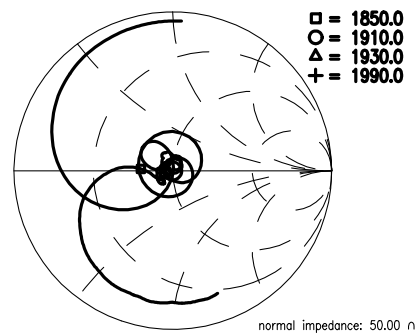
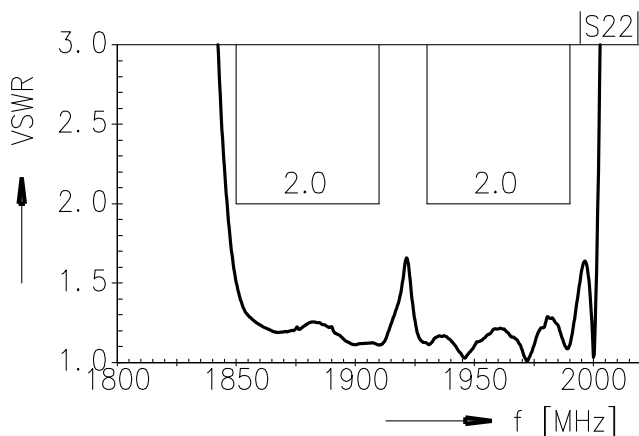
VSWR S_{11} TX-port



VSWR S_{33} RX-port



VSWR S_{22} ANT-port



References

Type	B8663
Ordering code	B39202-B8663-P810
Marking and package	C61157-A8-A87
Packaging	F61074-V8259-Z000
Date codes	L_1126
S-parameters	B8663_NB_UN.s3p (unmatched, narrow band) B8663_WB_UN.s3p (unmatched, wide band) see file header for port/pin assignment table
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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SMD

Matching coils	See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm for a large variety of matching coils.
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