EPCOS

SAW Components

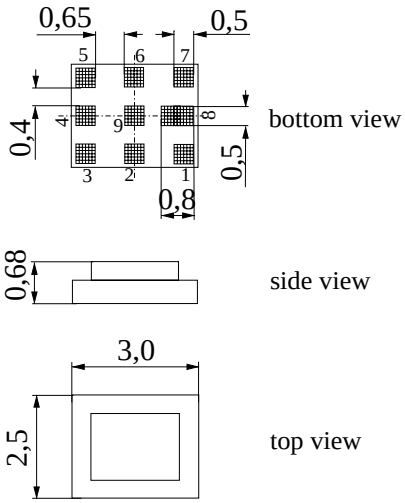
Datasheet B7661



Chip **Si**zed **S**AW **P**ackage **QCS9A**

Features

- Low-loss duplexer for W-CDMA 800MHz band mobile telephone systems
- Package for **S**urface **M**ounted **T**echnology (**SMT**)
- Small size and low height



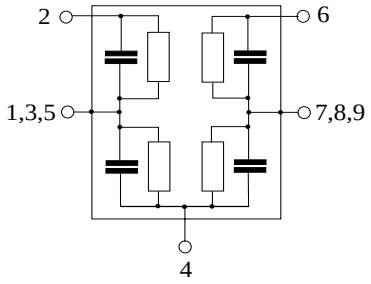
Dimensions in mm, approx. weight 0,015 g

Terminals

Ni, gold-plated

Pin configuration

6	TX Input
2	RX Output
4	Antenna
1, 3, 5	Ground
7, 8, 9	Ground



Type	Ordering code	Marking and Package according to	Packing according to
B7661	B39881-B7661-D610	C61157-A3-A8	F61074-V8156-Z000

Electrostatic **S**ensitive **D**evice (**ESD**)

Maximum ratings

Operating temperature range	T	– 30/+ 85	°C	
Storage temperature range	T_{stg}	– 40/+ 85	°C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	100[1)]	V	machine model, 10 pulses
Input power max.	P_{IN}			source and load impedance 50 Ω
830,0 ... 840,0 MHz		30	dBm	} continuous wave
elsewhere		10	dBm	

1) -acc. toJESD22-115A (Machine Model), 10 negatie & 10 positive pulses

Datasheet SMD

Characteristics

Operating temperature range T = 25 ± 2°C
ANT terminating impedance Z_{ANT} = 50 Ω, 8,2 nH (in parallel)
RX terminating impedance Z_{RX} = 50 Ω
TX terminating impedance Z_{TX} = 40 Ω , 8 nH (in series)

Characteristics TX - ANT		min.	typ.	max.	
Center frequency	f_c	—	835,00	—	MHz
Maximum insertion attenuation	α_{max}				
830,00 ... 840,00 MHz		—	1,5	1,8	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
830,00 ... 840,00 MHz		—	0,2	1,0	dB
Return loss					
830,00 ... 840,00 MHz		10,0	17,0	—	dB
Attenuation	α				
40,00 ... 400,00 MHz		30	40	—	dB
400,00 ... 500,00 MHz		25	36	—	dB
875,00 ... 885,00 MHz		50	55	—	dB
1210,00 ... 1400,00 MHz		20	32	—	dB
1590,00 ... 1680,00 MHz		25	38	—	dB
1680,00 ... 1980,00 MHz		27	42	—	dB
2490,00 ... 2520,00 MHz		35	52	—	dB

Characteristics ANT - RX		min.	typ.	max.	
Center frequency	f_c	—	880,00	—	MHz
Maximum insertion attenuation	α_{max}				
875,00 ... 885,00 MHz		—	2,3	2,4	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
875,00 ... 885,00 MHz		—	0,5	0,9	dB
880,00 ... 885,00 MHz		—	0,3	0,5	dB
Return loss					
875,00 ... 885,00 MHz		10,0	12,0	—	dB
Attenuation	α				
40,00 ... 50,00 MHz		55	80	—	dB
785,00 ... 795,00 MHz		35	46	—	dB
830,00 ... 840,00 MHz		55	58	—	dB
852,50 ... 862,50 MHz		1,5	3,0	—	dB
1000,00 ... 1705,00 MHz		35	43	—	dB
1705,00 ... 1770,00 MHz		45	57	—	dB
2535,00 ... 2565,00 MHz		25	43	—	dB
2625,00 ... 2655,00 MHz		32	40	—	dB
3500,00 ... 3540,00 MHz		20	24	—	dB
4375,00 ... 4425,00 MHz		15	25	—	dB
5230,00 ... 5310,00 MHz		15	24	—	dB
6125,00 ... 6195,00 MHz		—	22	—	dB

Characteristics ANT - RX		min.	typ.	max.	
Attenuation	α				
7000,00 ... 7080,00 MHz		—	20	—	dB
7875,00 ... 7965,00 MHz		—	16	—	dB
8750,00 ... 8850,00 MHz		—	17	—	dB
9625,00 ... 9735,00 MHz		—	13	—	dB
10500,00 ...10620,00 MHz		—	17	—	dB
11375,00 ...11505,00 MHz		—	18	—	dB
12250,00 ...12390,00 MHz		—	18	—	dB

Characteristics TX - RX		min.	typ.	max.	
Isolation between TX and RX path	α				
830,00 ... 840,00 MHz		55	58	—	dB
875,00 ... 885,00 MHz		50	53	—	dB

Characteristics

Operating temperature range T = -30 to 85°C
ANT terminating impedance Z_{ANT} = 50 Ω, 8,2 nH (in parallel)
RX terminating impedance Z_{RX} = 50 Ω
TX terminating impedance Z_{TX} = 40 Ω, 8 nH (in series)

Characteristics TX - ANT		min.	typ.	max.	
Center frequency	f_c	—	835,00	—	MHz
Maximum insertion attenuation	α_{max}				
830,00 ... 840,00 MHz		—	1,6	2,0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
830,00 ... 840,00 MHz		—	0,2	1,2	dB
Return loss					
830,00 ... 840,00 MHz		10,0	17,0	—	dB
Attenuation	α				
40,00 ... 400,00 MHz		30	40	—	dB
400,00 ... 500,00 MHz		25	36	—	dB
875,00 ... 885,00 MHz		48	52	—	dB
1210,00 ... 1400,00 MHz		20	32	—	dB
1590,00 ... 1680,00 MHz		25	38	—	dB
1680,00 ... 1980,00 MHz		27	42	—	dB
2490,00 ... 2520,00 MHz		35	52	—	dB

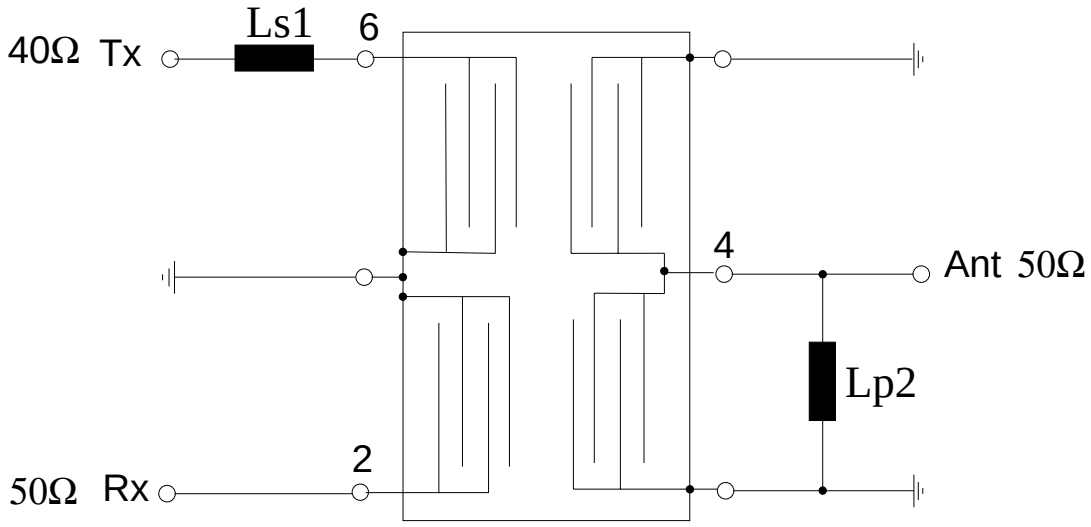
Characteristics ANT - RX		min.	typ.	max.	
Center frequency	f_c	—	880,00	—	MHz
Maximum insertion attenuation	α_{max}				
875,00 ... 885,00 MHz		—	2,3	2,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
875,00 ... 885,00 MHz		—	0,6	1,6	dB
Return loss					
875,00 ... 885,00 MHz		10,0	12,0	—	dB
Attenuation	α				
40,00 ... 50,00 MHz		55	80	—	dB
785,00 ... 795,00 MHz		30	46	—	dB
830,00 ... 840,00 MHz		55	58	—	dB
852,50 ... 862,50 MHz		1,5	3,0	—	dB
1000,00 ... 1705,00 MHz		35	43	—	dB
1705,00 ... 1770,00 MHz		45	57	—	dB
2535,00 ... 2565,00 MHz		25	43	—	dB
2625,00 ... 2655,00 MHz		32	40	—	dB
3500,00 ... 3540,00 MHz		20	24	—	dB
4375,00 ... 4425,00 MHz		15	25	—	dB
5230,00 ... 5310,00 MHz		15	24	—	dB
6125,00 ... 6195,00 MHz		—	22	—	dB

Characteristics ANT - RX		min.	typ.	max.	
Attenuation	α				
7000,00 ... 7080,00 MHz		—	28	—	dB
7875,00 ... 7965,00 MHz		—	16	—	dB
8750,00 ... 8850,00 MHz		—	17	—	dB
9625,00 ... 9735,00 MHz		—	13	—	dB
10500,00 ...10620,00 MHz		—	17	—	dB
11375,00 ...11505,00 MHz		—	18	—	dB
12250,00 ...12390,00 MHz		—	18	—	dB

Characteristics TX - RX		min.	typ.	max.	
Isolation between TX and RX path	α				
830,00 ... 840,00 MHz		55	58	—	dB
875,00 ... 885,00 MHz		48	51	—	dB

Matching circuit to terminating impedances

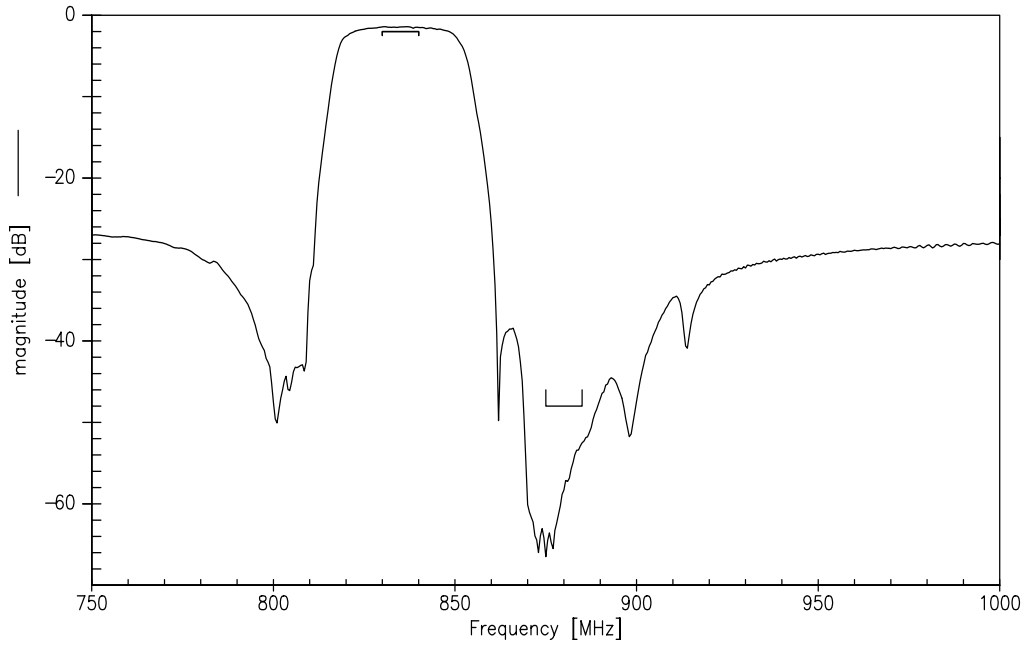
(Element values depend upon PCB layout)



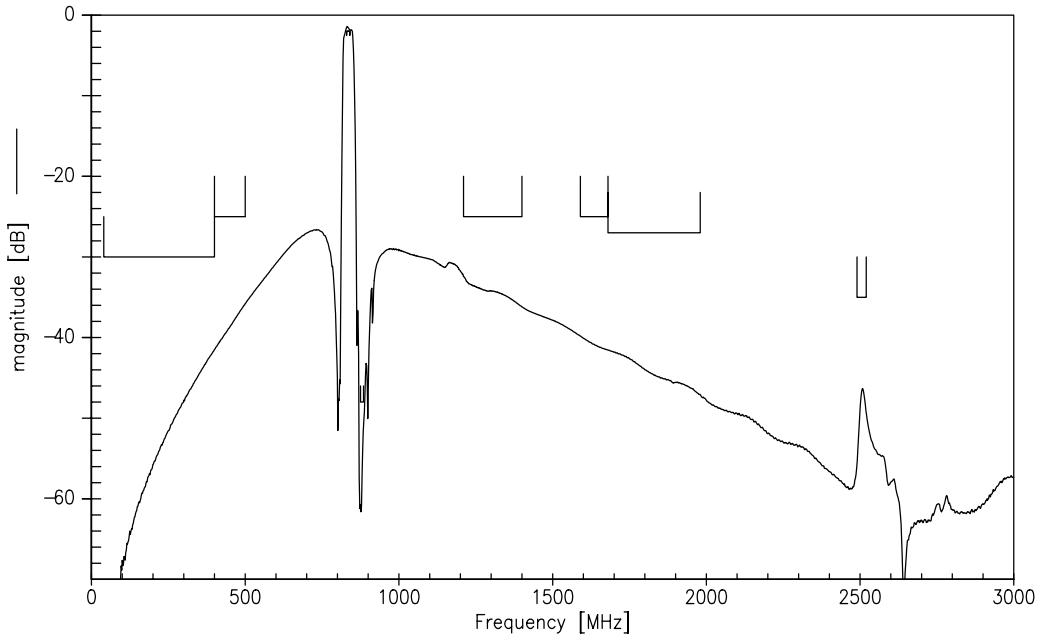
L_{s1} = 8.0 nH

L_{p2} = 8.2 nH

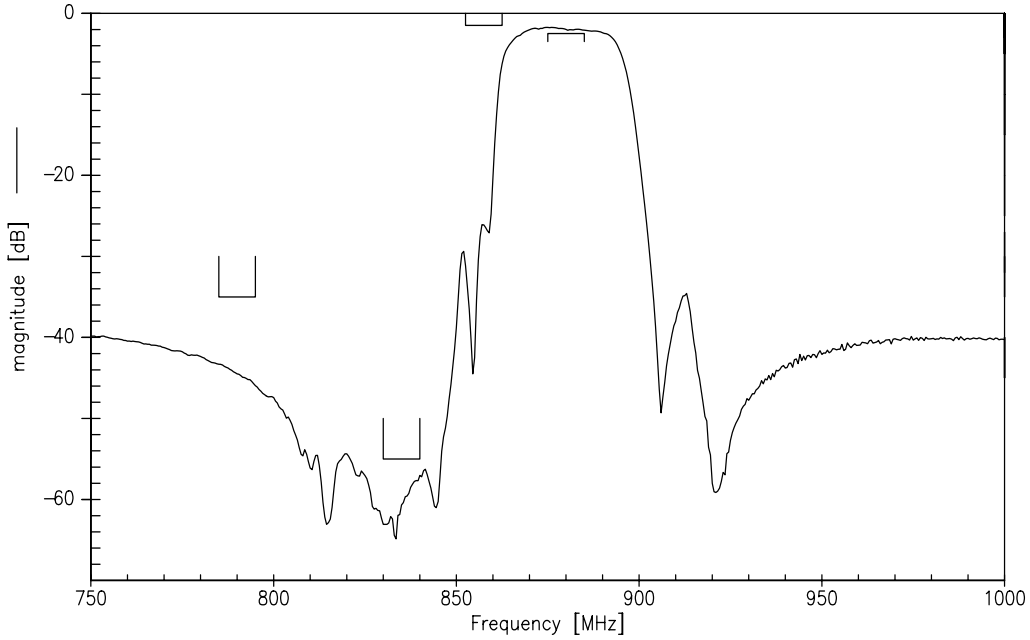
Frequency Response TX - ANT



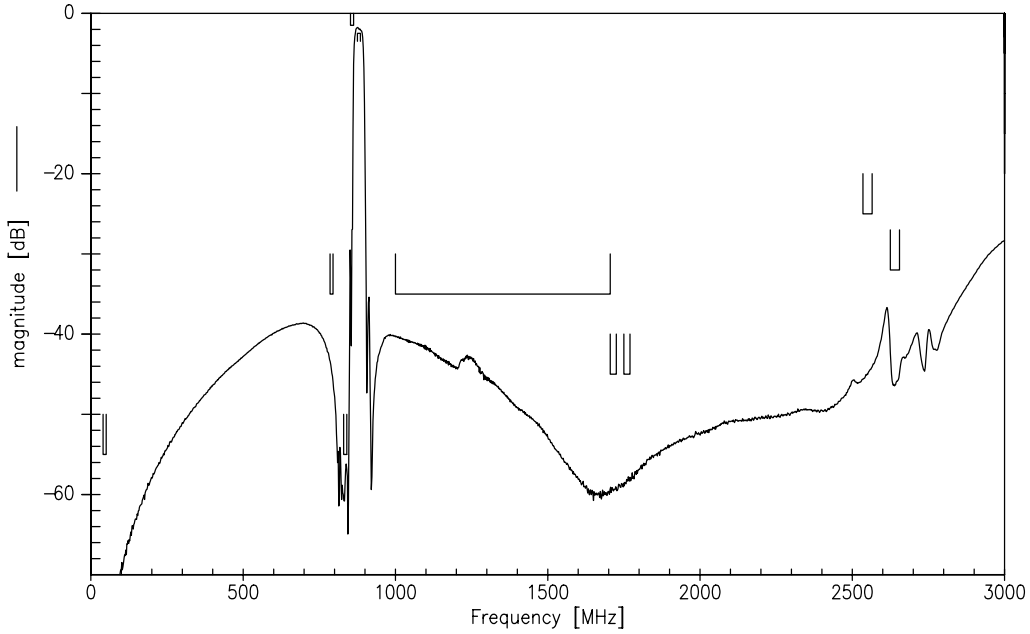
Frequency Response TX - ANT (wideband)



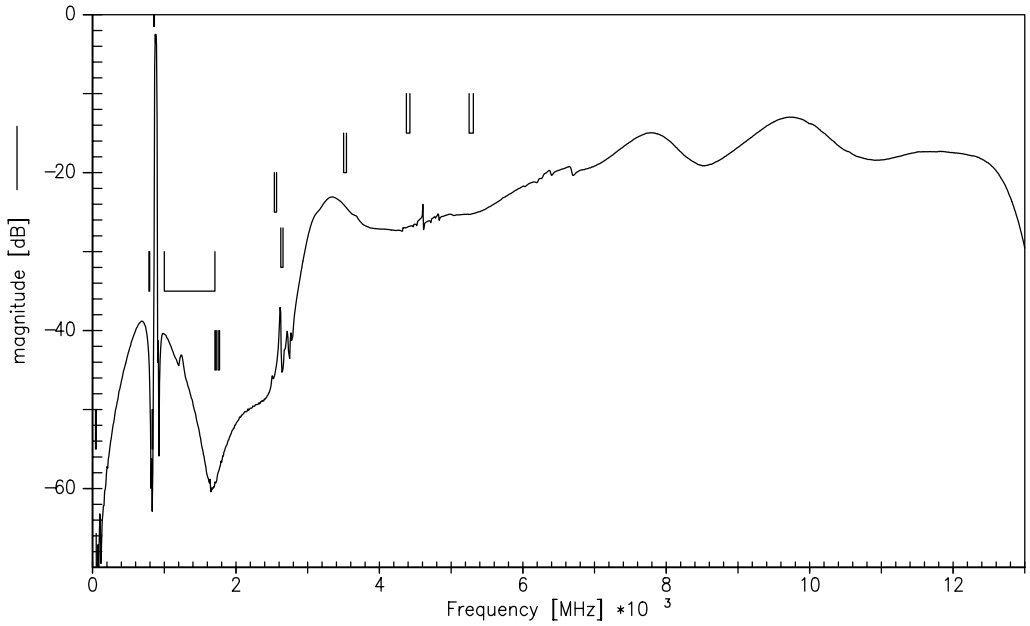
Frequency Response ANT - RX



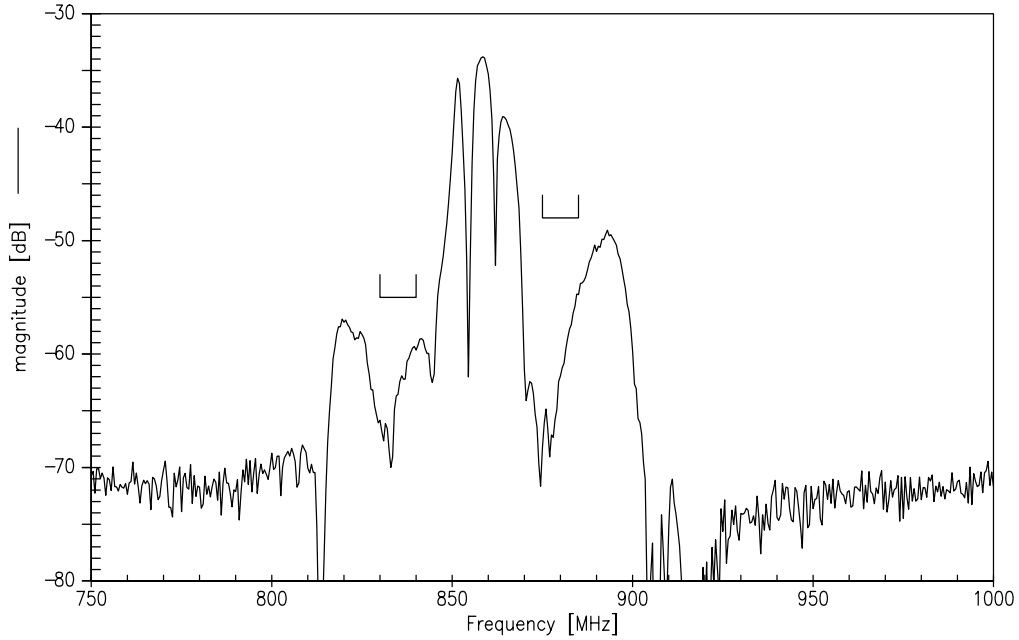
Frequency Response ANT - RX (wideband)



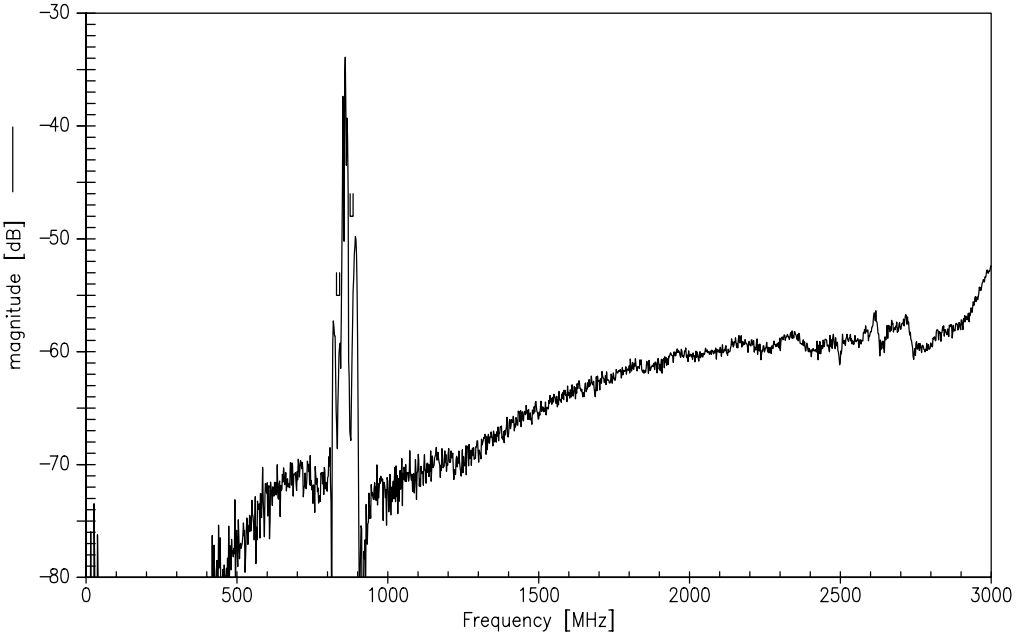
Frequency Response ANT - RX



Frequency Response TX - RX



Frequency Response TX - RX (wideband)



Published by EPCOS AG
Surface Acoustic Wave Components Division, SAW MC WT
P.O. Box 80 17 09, 81617 Munich, GERMANY

© EPCOS AG 2005. Reproduction, publication and dissemination of this brochure and the information contained therein without EPCOS' prior express consent is prohibited.

Purchase orders are subject to the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry recommended by the ZVEI (German Electrical and Electronic Manufacturers' Association), unless otherwise agreed.

This brochure replaces the previous edition.

For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.