



RF360
Europe GmbH

SAW Components

SAW Duplexer

LTE Band 13

Series/type: B8620
Ordering code: B39781B8620P810

Date: May 31, 2016
Version: 2.3

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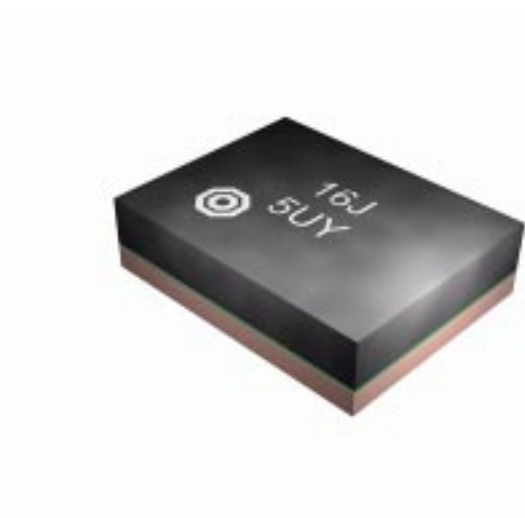
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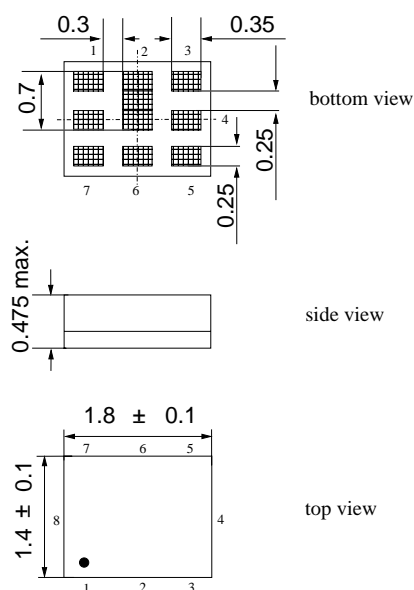
Data sheet


Application

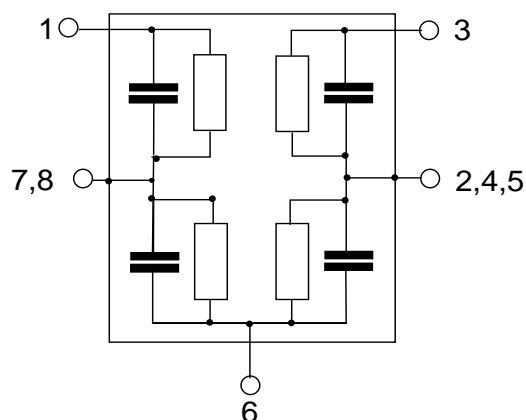
- Low-loss SAW duplexer for mobile telephone LTE Band 13 system
- Low insertion attenuation
- Low amplitude ripple
- 50Ω single-ended both in Antenna-Rx and Tx-Antenna paths


Features

- Package size 1.8 x 1.4 mm²
- max. Package height 0.475 mm
- RoHS compatible
- Approx. weight 0.0042g
- Package for **Surface Mount Technology (SMT)**
- Ni, Au-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitivity Level 3**


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 = -30 °C to +90 °C
Antenna terminating impedance:	Z _{Ant} = 50 Ω 15 nH
Rx terminating impedance:	Z _{Rx} = 50 Ω
Tx terminating impedance:	Z _{Tx} = 50 Ω

Characteristics Tx-Antenna		min.	typ. @ 25 °C	max.	
Center frequency	f _c	—	782.0	—	MHz
Maximum insertion attenuation	α				
777.0 ... 787.0 MHz		—	1.7	2.3	dB
Amplitude ripple (p-p)	Δα				
777.0 ... 787.0 MHz		—	0.5	1.1	dB
Amplitude ripple over any 5 MHz channel	Δα _{ch}				
777.0 ... 787.0 MHz		—	0.6	1.0	dB
Error Vector Magnitude					
@f _{Carrier} 779.4 ... 784.6 MHz	EVM ¹⁾	—	1.8	4.0	%
@f _{Carrier} 779.4 ... 784.6 MHz	EVM ²⁾	—	1.8	3.0	%
Tx port VSWR					
777.0 ... 787.0 MHz		—	1.3	2.0	
Ant port VSWR					
777.0 ... 787.0 MHz		—	1.3	2.0	
Attenuation	α				
10.0 ... 716.0 MHz		30	42	—	dB
716.0 ... 728.0 MHz		40	45	—	dB
728.0 ... 746.0 MHz		40	48	—	dB
746.0 ... 756.0 MHz		50	59	—	dB
758.0 ... 767.5 MHz		33	43	—	dB
767.5 ... 768.0 MHz		26	43	—	dB
768.0 ... 769.0 MHz		14	46	—	dB
769.0 ... 770.0 MHz		6	39	—	dB
770.0 ... 771.0 MHz		3	27	—	dB
771.0 ... 772.0 MHz		2	15	—	dB
799.0 ... 805.0 MHz		8	11	—	dB
869.0 ... 894.0 MHz		30	43	—	dB
1554.0 ... 1565.0 MHz		45	51	—	dB
1565.0 ... 1585.0 MHz		45	51	—	dB
1597.0 ... 1607.0 MHz		45	52	—	dB
1805.0 ... 1880.0 MHz		45	55	—	dB
1930.0 ... 1990.0 MHz		45	57	—	dB

Data sheet



Characteristics Tx-Antenna	min.	typ. @ 25 °C	max.	
2111.0 ... 2170.0 MHz	45	58	—	dB
2331.0 ... 2361.0 MHz	40	58	—	dB
2400.0 ... 2484.0 MHz	40	57	—	dB
3108.0 ... 3148.0 MHz	30	43	—	dB
4900.0 ... 5850.0 MHz	9	11	—	dB

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

2) T = +25 °C

Data sheet


Characteristics

Temperature range for specification:	T = -30 °C to +90 °C
Antenna terminating impedance:	Z _{Ant} = 50 Ω 15 nH
Rx terminating impedance:	Z _{Rx} = 50 Ω
Tx terminating impedance:	Z _{Tx} = 50 Ω

Characteristics Antenna-Rx				min.	typ. @ 25 °C	max.	
Center frequency	f _c			—	751.0	—	MHz
Maximum insertion attenuation	α			—	1.5	2.0	dB
		746.0 ... 756.0	MHz				
Amplitude ripple (p-p)	Δα			—	0.3	0.8	dB
		746.0 ... 756.0	MHz				
Ant port VSWR				—	1.4	2.0	
		746.0 ... 756.0	MHz				
Rx port VSWR				—	1.4	2.0	
		746.0 ... 756.0	MHz				
Attenuation	α						
		10.0 ... 686.0	MHz	40	53	—	dB
			31.0 MHz	50	96	—	dB
		686.0 ... 728.0	MHz	27	42	—	dB
		771.0 ... 772.0	MHz	27	42	—	dB
		777.0 ... 787.0	MHz	50	60	—	dB
		787.0 ... 1710.0	MHz	40	45	—	dB
		1710.0 ... 1755.0	MHz	40	51	—	dB
		1850.0 ... 1910.0	MHz	40	49	—	dB
		2238.0 ... 2268.0	MHz	37	44	—	dB
		2400.0 ... 2500.0	MHz	40	47	—	dB
		4900.0 ... 5950.0	MHz	33	37	—	dB
IMD product level limits¹⁾							
at f_{Tx}=782.0 MHz, f_{Rx}= 751.0 MHz							
Blocker 1		31.0	MHz	—	-136	-106	dBm
Blocker 2		813.0	MHz	—	-117	-102	dBm
Blocker 3		1533.0	MHz	—	-120	-106	dBm
Blocker 4		2315.0	MHz	—	-129	-109	dBm

¹⁾ IMD product level limits for power levels P_{Tx}=21.5 dBm (antenna port output power) and P_{Blocker}=-15dBm (antenna port input power)

Data sheet


Characteristics

Temperature range for specification:	T = -30 °C to +90 °C
Antenna terminating impedance:	Z _{Ant} = 50 Ω 15 nH
Rx terminating impedance:	Z _{Rx} = 50 Ω
Tx terminating impedance:	Z _{Tx} = 50 Ω

Characteristics Tx-Rx				min.	typ. @ 25 °C	max.	
Isolation			α				
	746.5 ... 749.0	MHz		55	57	—	dB
	749.0 ... 752.0	MHz		55	58	—	dB
	752.0 ... 755.5	MHz		57	59	—	dB
	777.0 ... 787.0	MHz		60	63	—	dB
	1552.0 ... 1574.0	MHz		30	59	—	dB
	2328.0 ... 2361.0	MHz		30	54	—	dB
	3104.0 ... 3148.0	MHz		30	52	—	dB

Maximum ratings

Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	5 ¹⁾	V	
ESD voltage	V _{ESD}	100 ²⁾	V	Machine Model
		175 ³⁾	V	Human Body Model
		600 ⁴⁾	V	Charged Device Model
Input power	P _{IN}			source and load impedance 50 Ω
777.0 ... 787.0 MHz		28.5	dBm	} continuous wave T = 50 °C, 5000 h
elsewhere	10	dBm		

1) 168h Damp Heat Steady State acc. to IEC 60068-2-67 Cy

2) acc. to JESD22-A115B (MM - Machine Model), 10 negative and 10 positive pulses.

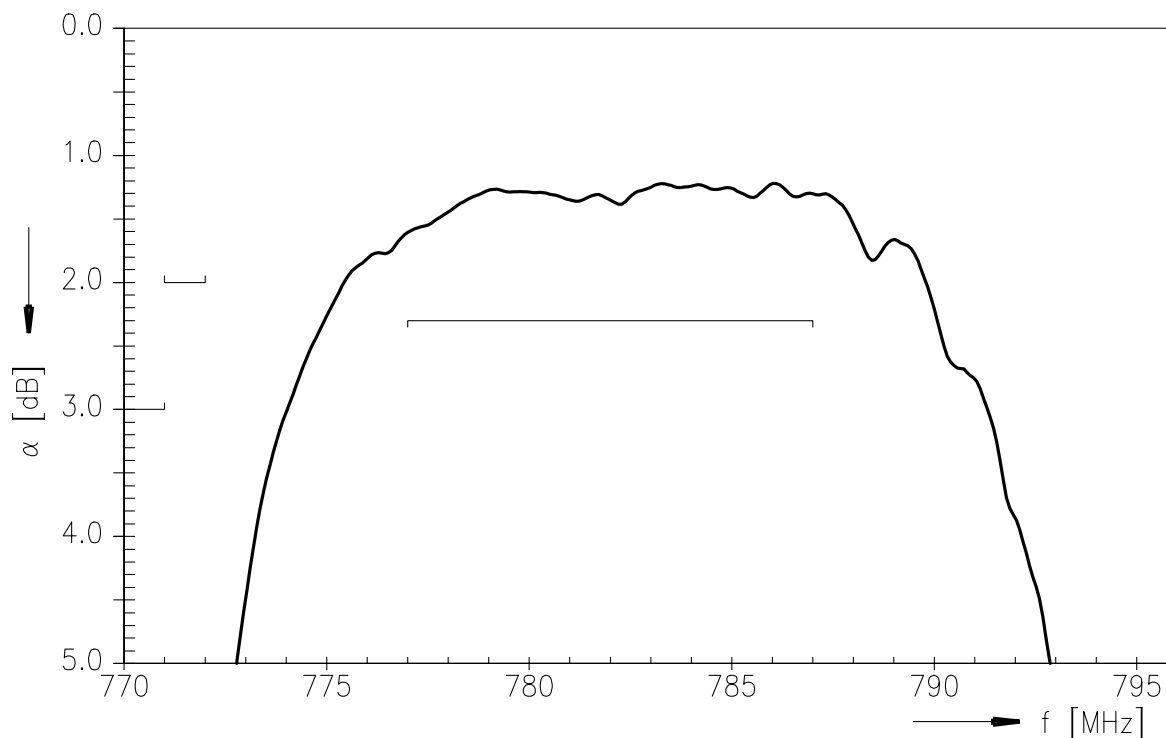
3) acc. to JESD22-A114F (HBM - Human Body Model), 1 negative and 1 positive pulses.

4) acc. to JESD22-C111C (CDM - Charged Device Model), 3 negative and 3 positive pulses.

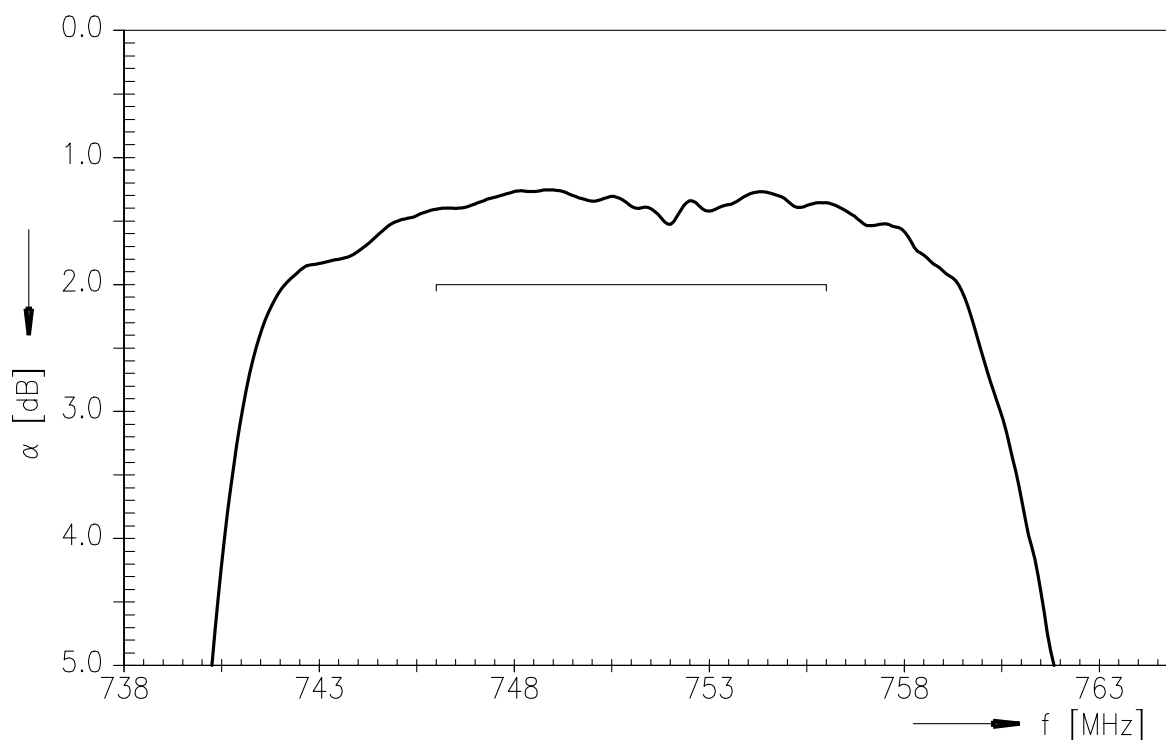
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Frequency Response Tx-Ant



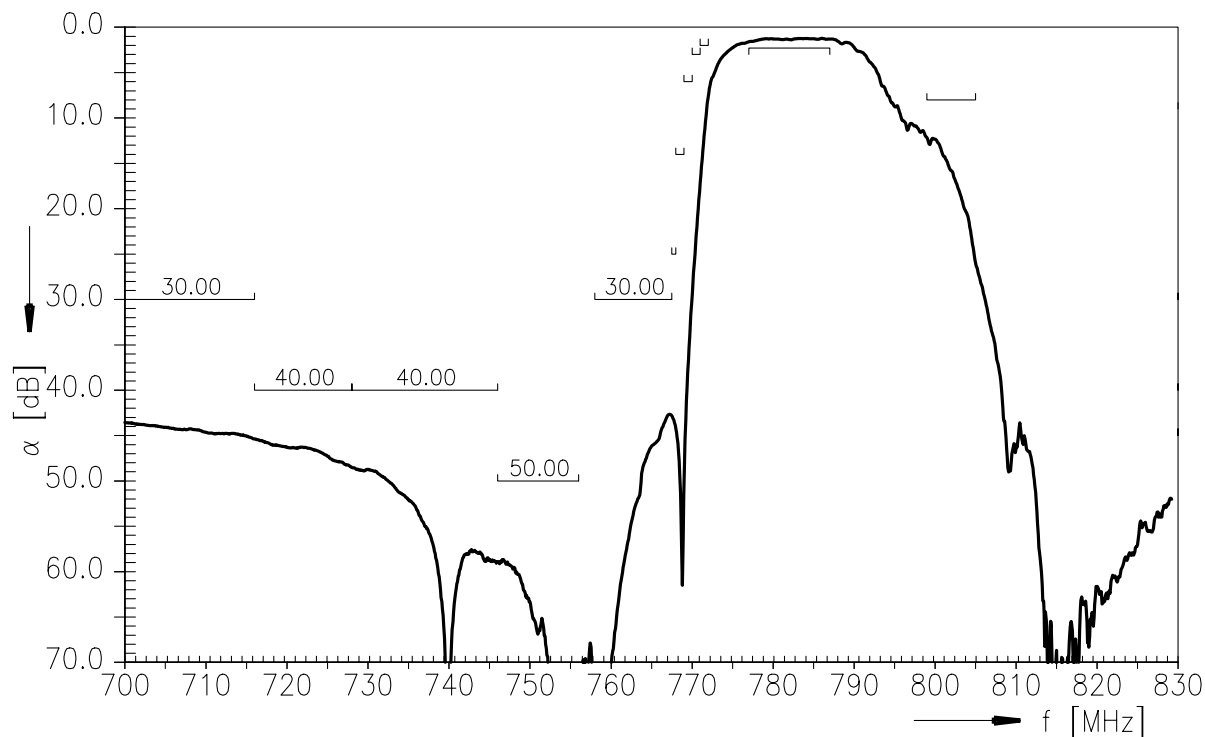
Frequency Response Ant-Rx



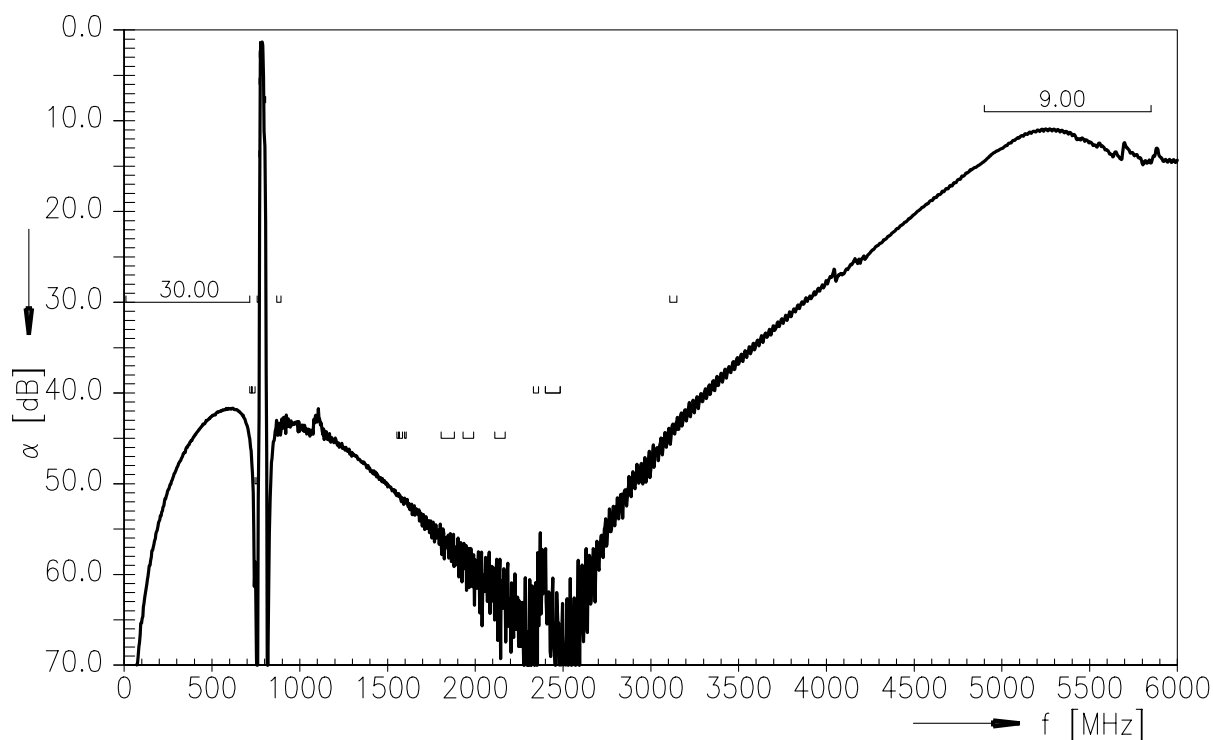
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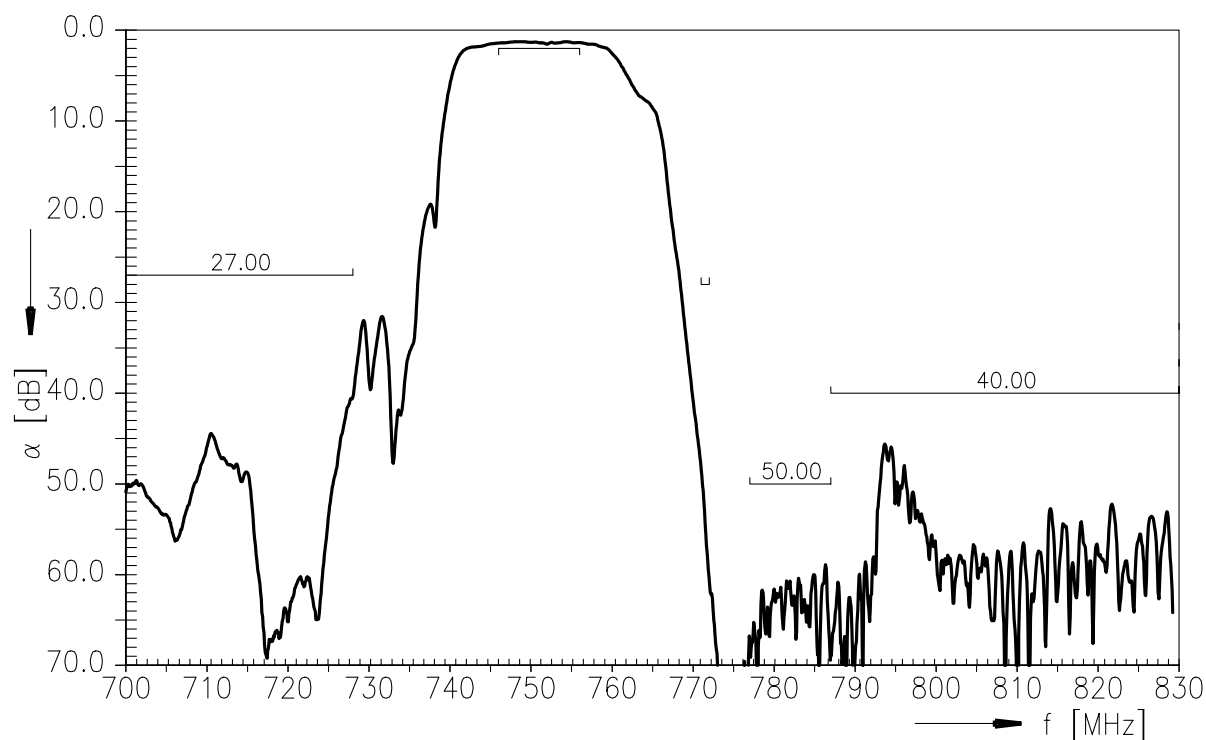
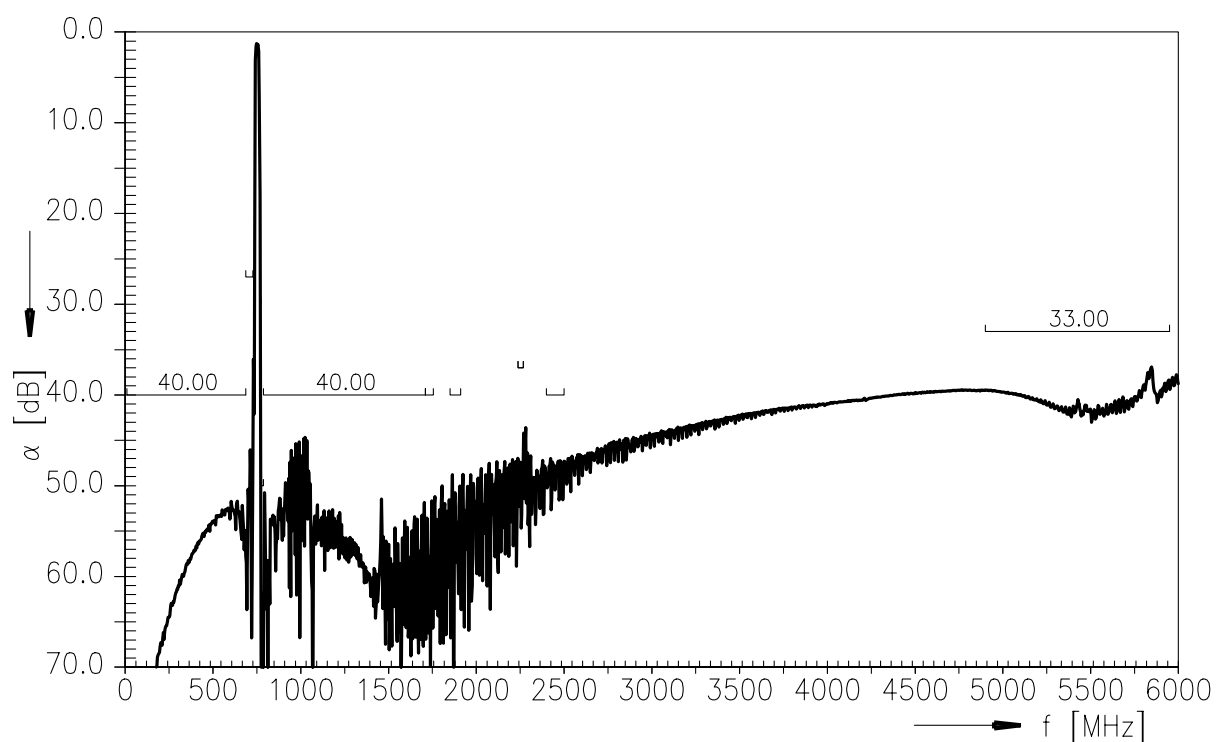
Frequency Response Tx-Ant



Frequency Response Tx-Ant (wideband)



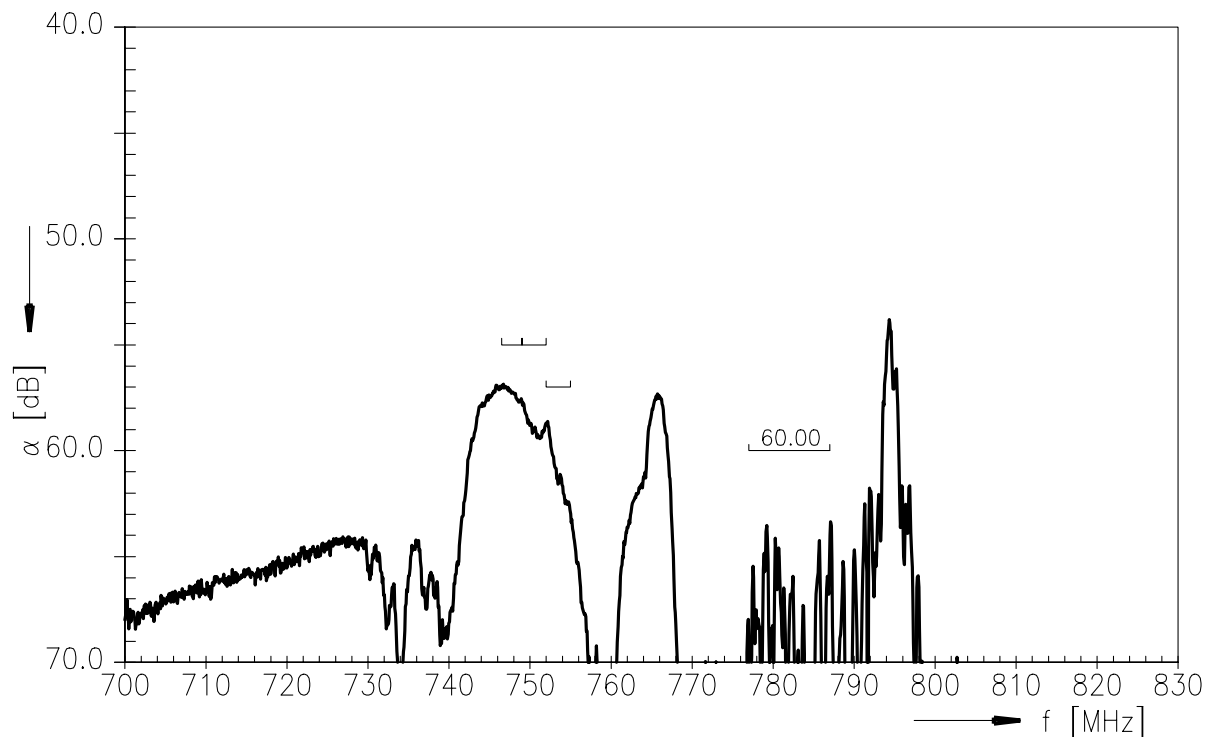
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Frequency Response Rx-Ant

Frequency Response Rx-Ant (wideband)


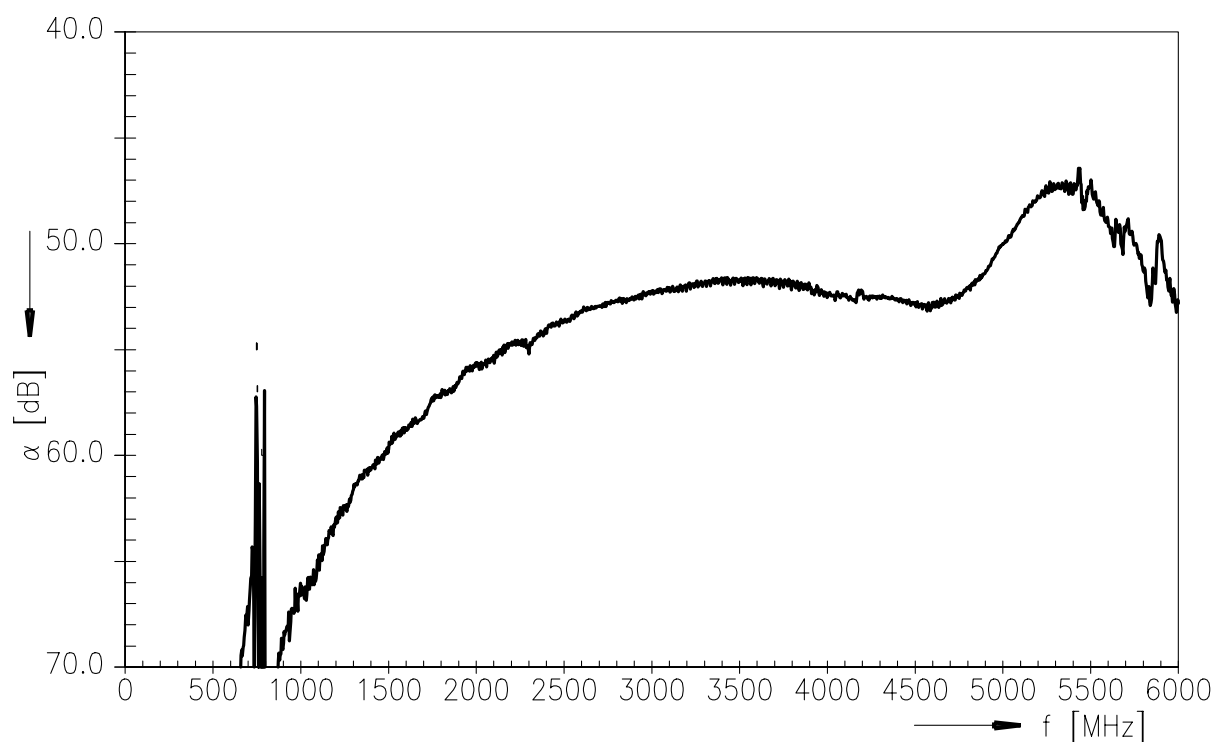
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Frequency Response Tx-Rx



Frequency Response Tx-Rx (wideband)



SAW Components

B8620

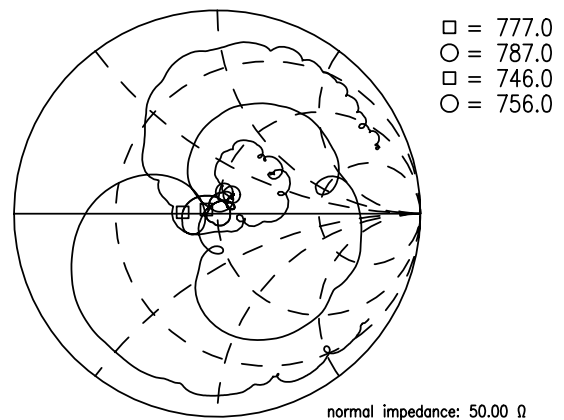
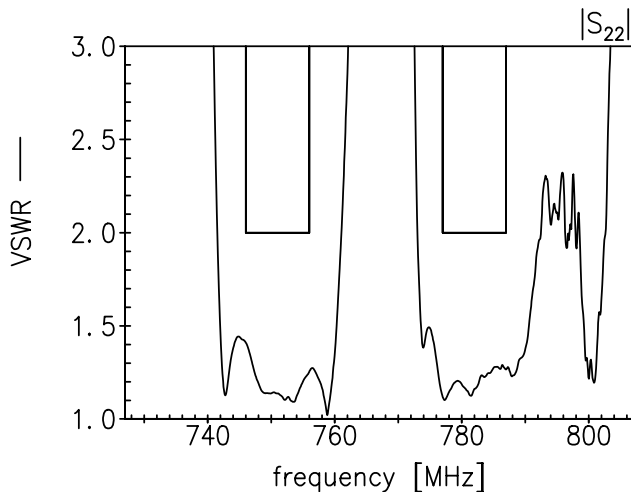
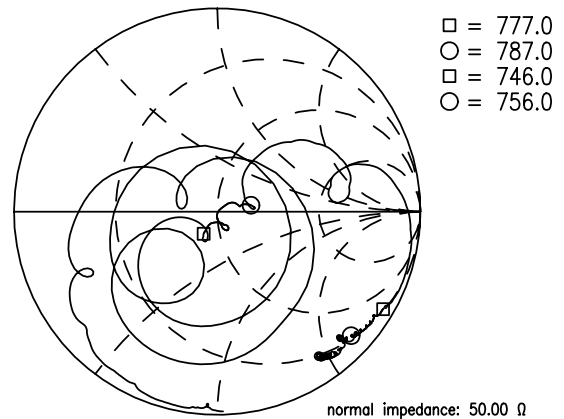
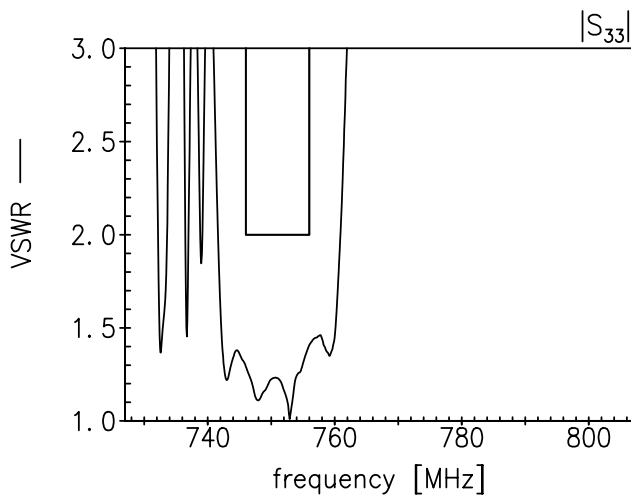
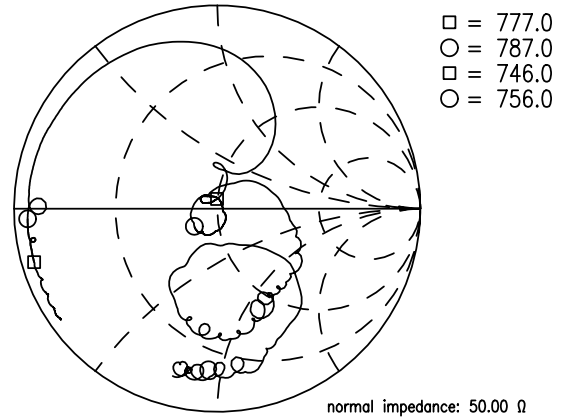
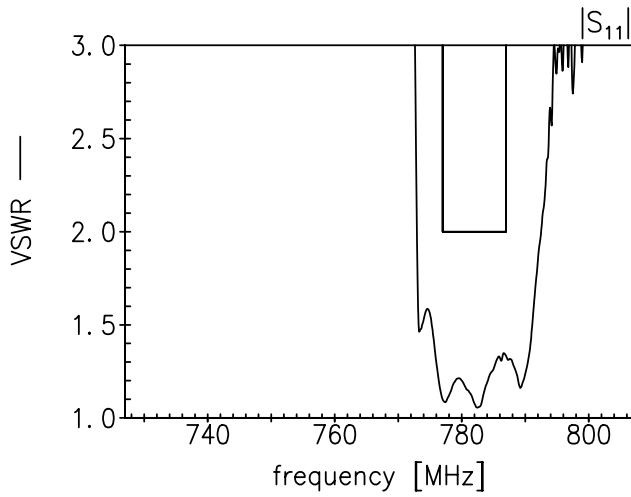
SAW Duplexer

782.0 / 751.0 MHz

Data sheet



Return Loss S_{11} Tx-port S_{22} Ant-port S_{33} Rx-port



SAW Components
B8620
SAW Duplexer
782.0 / 751.0 MHz

Data sheet



References

Type	B8620
Ordering code	B39781B8620P810
Marking and package	C61157-A8-A207
Packaging	F61074-V8259-Z000
Date codes	L_1126
S-parameters	B8620_NB_UN.s3p, B8620_WB_UN.s3p see file header for port/pin assignment table
Soldering profile	S_6001
RoHS compatible	RoHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8 th , 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases.
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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

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