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SAW Components

SAW Duplexer

Automotive telematics

Series/type:	B4404
Ordering code:	B39851B4404P810
Date:	June 12, 2014
Version:	2.1

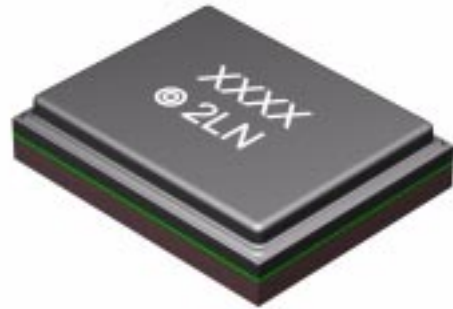
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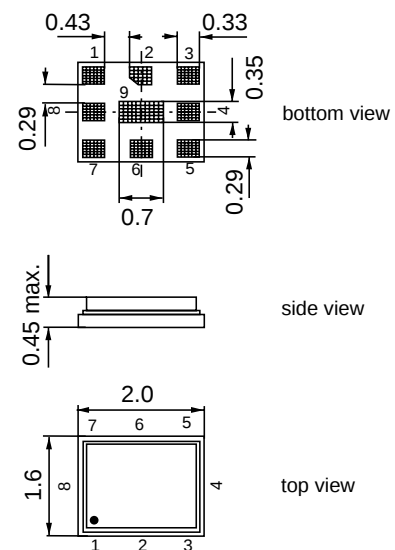
Application

- Low-loss SAW duplexer for LTE Band 20 systems
- Very high isolation
- Usable passband 30 MHz
- Single-ended to balanced transformation in Antenna-Rx path
- Impedance transformation 50 Ω to 100 Ω in Antenna-Rx path



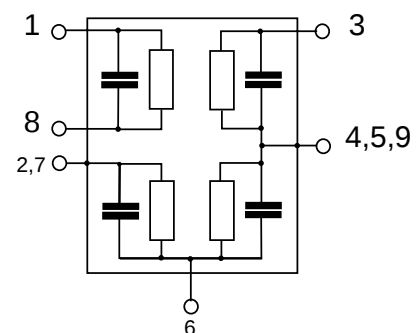
Features

- Package size 2.0 * 1.6 mm²
- Package height max. 0.45mm
- RoHS compatible
- Approximate weight 0.005 g
- Package for **Surface Mount Technology (SMT)**
- Ni terminals, Au-plated
- **Electrostatic Sensitive Device (ESD)**
- AEC-Q200 qualified component family (operable temperature range -40°C to +85°C)



Pin configuration

- 3 Tx input
- 1, 8 Rx output (balanced)
- 6 Antenna
- 2, 4, 5, 7, 9 To be grounded



SAW Components
B4404
SAW Duplexer
847.0 / 806.0 MHz
Data sheet

Characteristics

Temperature range for specification:	T = -15 °C to +85 °C
TX terminating impedance:	Z _{TX} = 50 Ω
ANT terminating impedance:	Z _{Ant} = 50 Ω 9.0 nH
RX terminating impedance:	Z _{RX} = 100 Ω (balanced) 43 nH

Characteristics Tx-Antenna				min.	typ. @ 25 °C	max.	
Center frequency	f _c				847.0		MHz
Maximum insertion attenuation	α						
832.0 ... 862.0 MHz				—	2.2	3.6	dB
832.0 ... 862.0 MHz				—	2.2	2.7 ¹⁾	dB
Amplitude ripple (p-p)	Δα						
832.0 ... 862.0 MHz				—	1.1	2.6	dB
Input VSWR (Tx port)							
832.0 ... 862.0 MHz				—	1.7	2.1	
Output VSWR (Ant Port)							
832.0 ... 862.0 MHz				—	1.7	2.0	
Absolute attenuation	α						
100.0 ... 771.0 MHz				34	41	—	dB
771.0 ... 791.0 MHz				35	46	—	dB
791.0 ... 821.0 MHz				40	54	—	dB
873.0 ... 903.0 MHz				13	32	—	dB
925.0 ... 960.0 MHz				30	43	—	dB
1565.0 ... 1606.0 MHz				40	50	—	dB
1664.0 ... 2170.0 MHz				40	52	—	dB
2400.0 ... 2620.0 MHz				35	39	—	dB
2620.0 ... 2690.0 MHz				35	47	—	dB
3328.0 ... 3448.0 MHz				20	43	—	dB

¹⁾ in +25,+55 °C temperature range

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Characteristics

Temperature range for specification:	T =	-15 °C to +85 °C
TX terminating impedance:	Z _{TX} =	50 Ω
ANT terminating impedance:	Z _{Ant} =	50 Ω 9.0 nH
RX teminating impedance:	Z _{RX} =	100 Ω (balanced) 43 nH

Characteristics Antenna-Rx				min.	typ. @ 25 °C	max.	
Center frequency	f _c				806.0		MHz
Maximum insertion attenuation	α						
791.0 ... 821.0 MHz				—	2.6	3.9	dB
791.0 ... 821.0 MHz				—	2.6	3.3 ¹⁾	dB
Amplitude ripple (p-p)	Δα						
791.0 ... 821.0 MHz				—	1.3	2.8	dB
Input VSWR (Ant port)							
791.0 ... 821.0 MHz				—	1.8	2.2	
Output VSWR (Rx Port)							
791.0 ... 821.0 MHz				—	2.2	2.5	
Common mode rejection ratio							
791.0 ... 821.0 MHz				23	28		dB
Absolute attenuation	α						
100.0 ... 760.0 MHz				45	52	—	dB
760.0 ... 782.0 MHz				25	50	—	dB
832.0 ... 862.0 MHz				50 ²⁾	53	—	dB
832.0 ... 833.5 MHz				35	62	—	dB
833.5 ... 862.0 MHz				50	53	—	dB
873.0 ... 903.0 MHz				40	55	—	dB
1623.0 ... 1683.0 MHz				40	61	—	dB
2400.0 ... 2545.0 MHz				40	55	—	dB
2545.0 ... 4000.0 MHz				35	53	—	dB

1) In +25,+55 °C temperature range

2) In +25,+85 °C temperature range

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Characteristics

Temperature range for specification:	T	=	-15 °C to +85 °C
TX terminating impedance:	Z _{TX}	=	50 Ω
ANT terminating impedance:	Z _{Ant}	=	50 Ω 9.0 nH
RX terminating impedance:	Z _{RX}	=	100 Ω (balanced) 43 nH

Characteristics Tx-Rx				min.	typ. @ 25 °C	max.	
Differential mode isolation							α
791.0	...	820.5	MHz	51	56	—	dB
820.5	...	821.0	MHz	45	60	—	dB
832.0	...	834.0	MHz	43	63	—	dB
832.0	...	834.0	MHz	52 ¹⁾	63	—	dB
834.0	...	862.0	MHz	52	56	—	dB
1574.0	...	1577.0	MHz	40	69	—	dB
1664.0	...	1724.0	MHz	20	68	—	dB
2496.0	...	2586.0	MHz	20	63	—	dB
Common mode isolation							α
832.0	...	862.0	MHz	60	64	—	dB

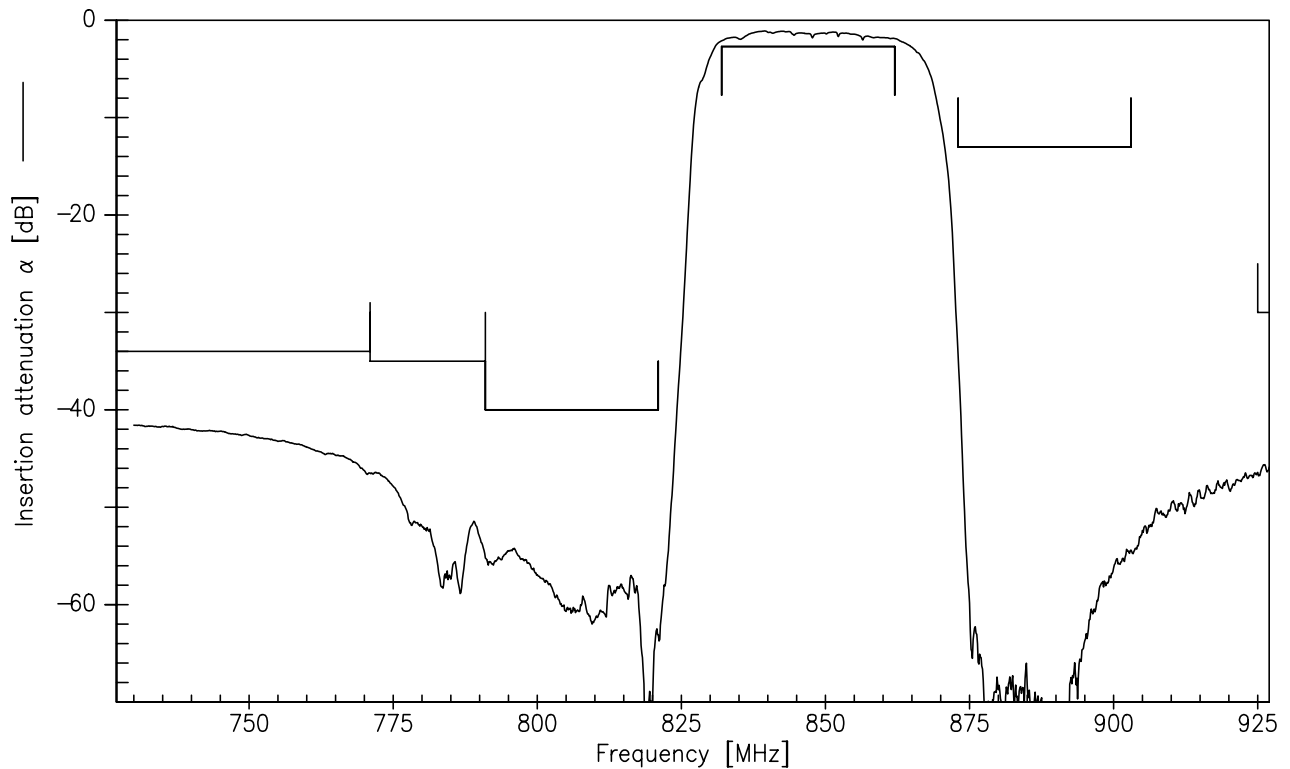
1) In +25,+85 °C temperature range

Maximum Ratings

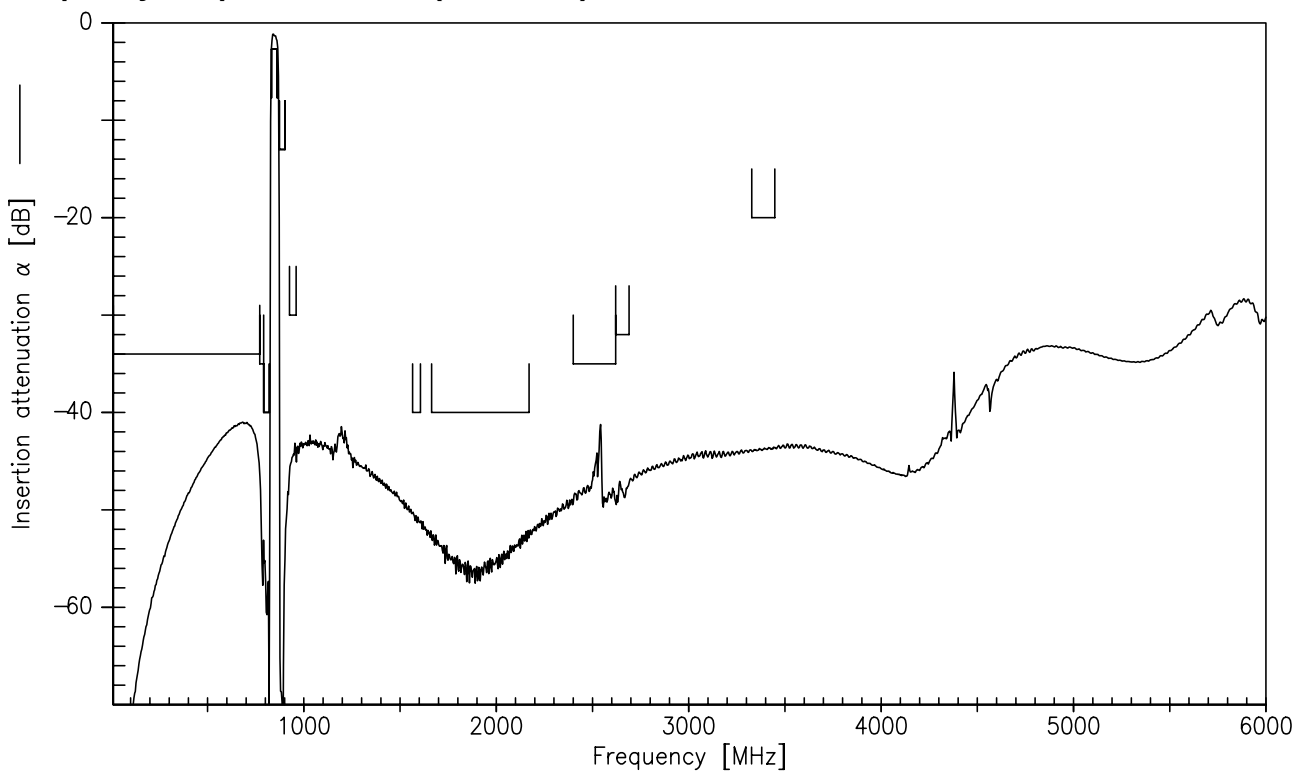
Operable temperature range	T	-40/+85	°C	} continuous wave 50 °C, 5000h
Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	0	V	
Input power at Tx Port				
832.0 ...862.0 MHz	P _{in}	28	dBm	}
elsewhere	P _{in}	10	dBm	



Frequency Response TX-ANT

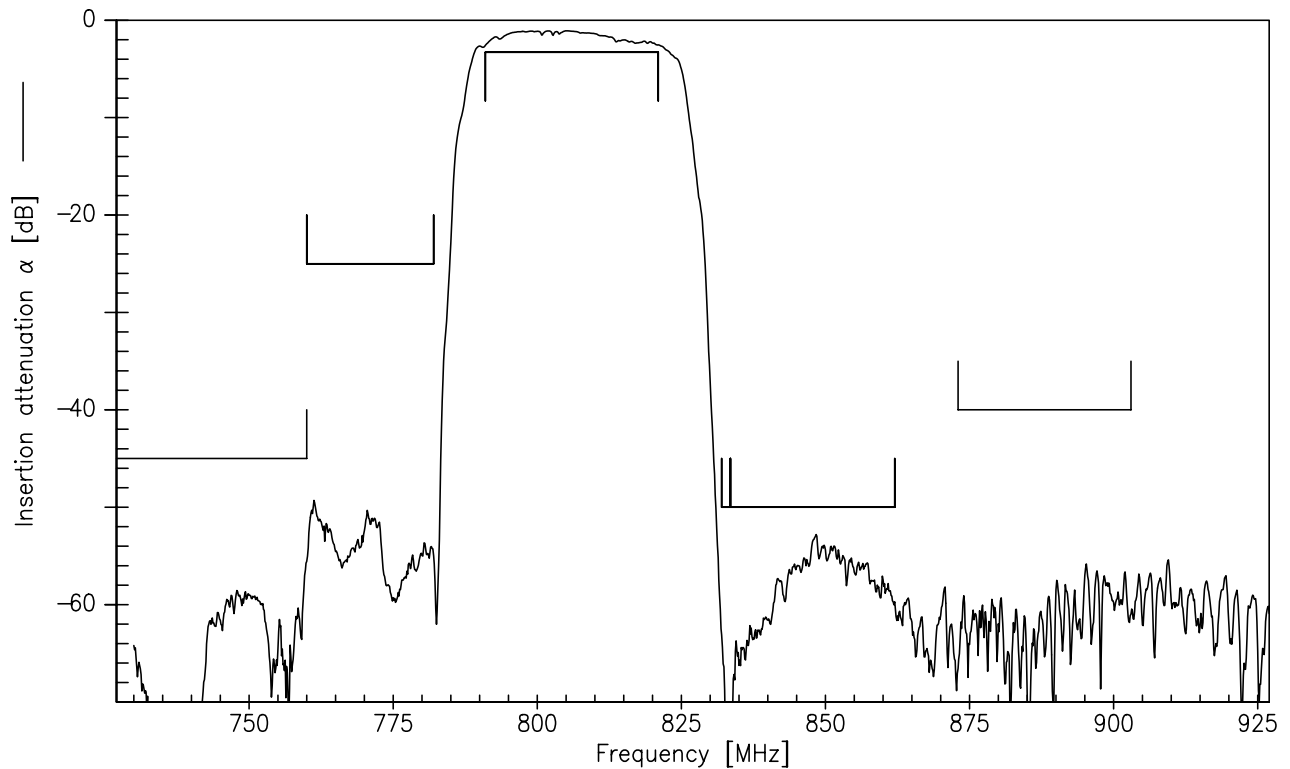


Frequency Response TX-ANT (wideband)

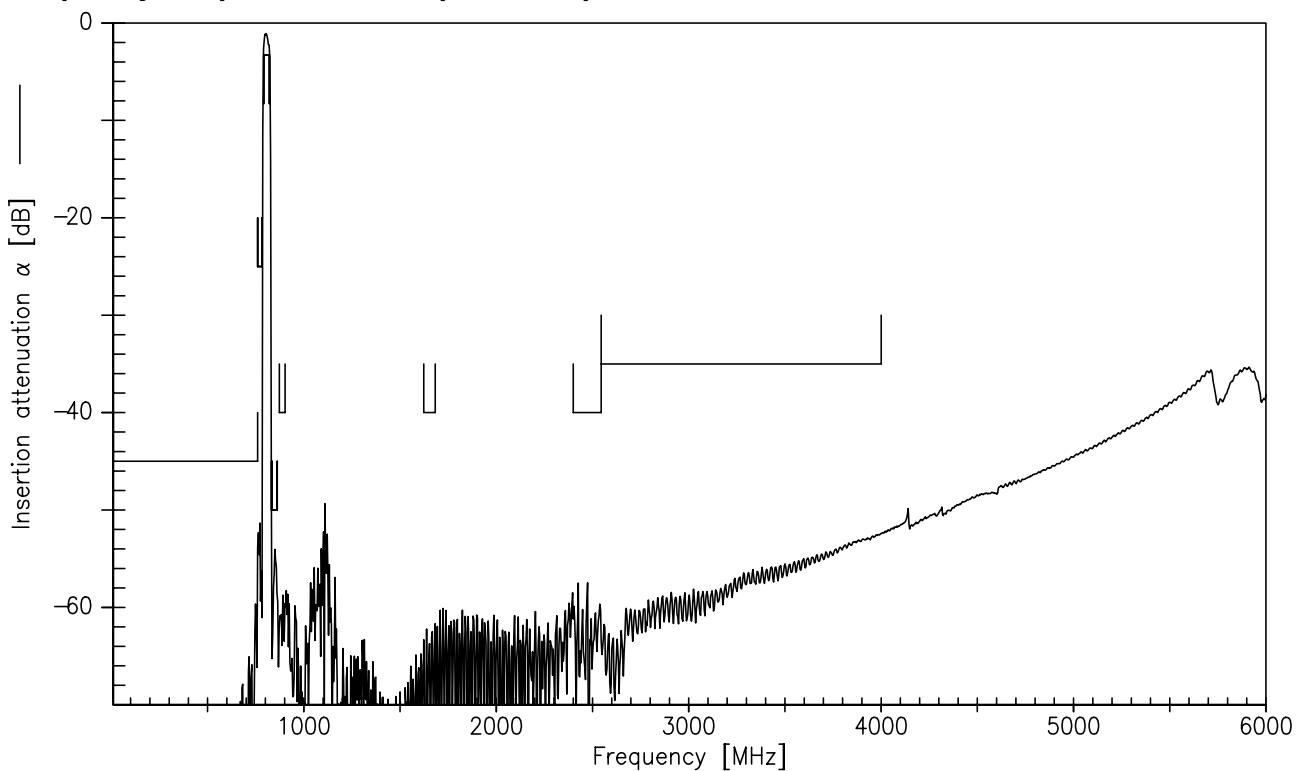


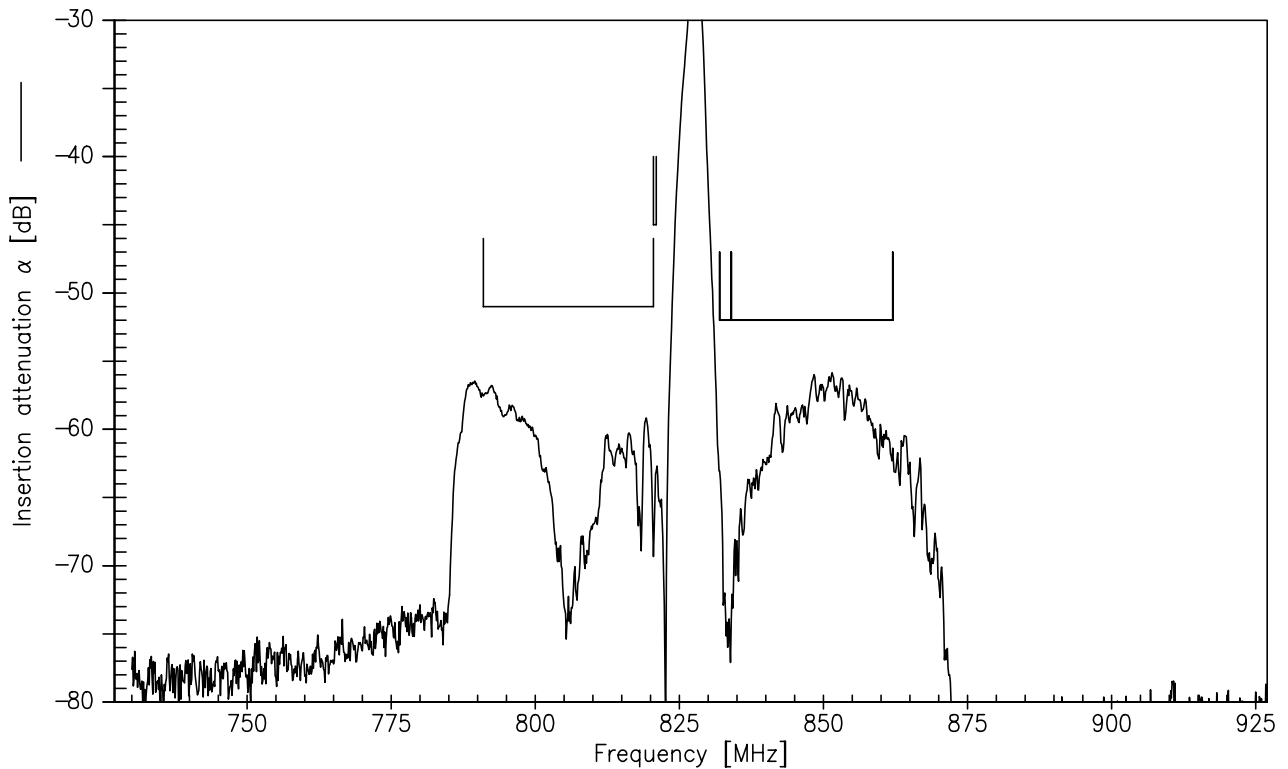
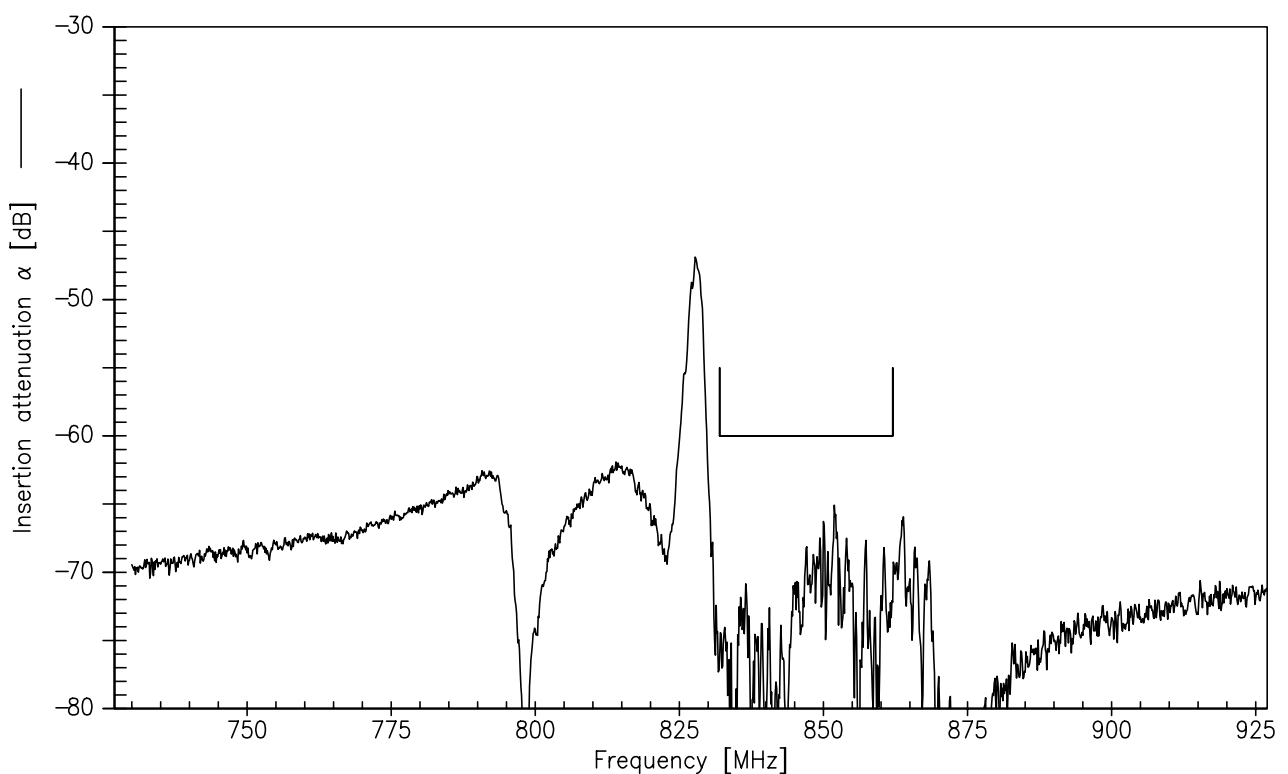


Frequency Response RX-ANT



Frequency Response RX-ANT (wideband)




Frequency Response TX-RX

Frequency Response TX-RX (Common Mode)


SAW Components

B4404

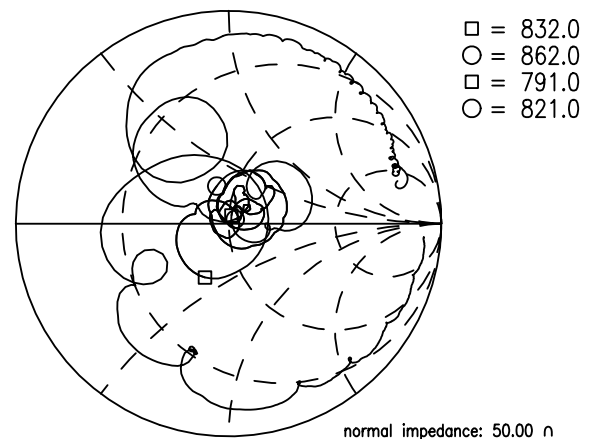
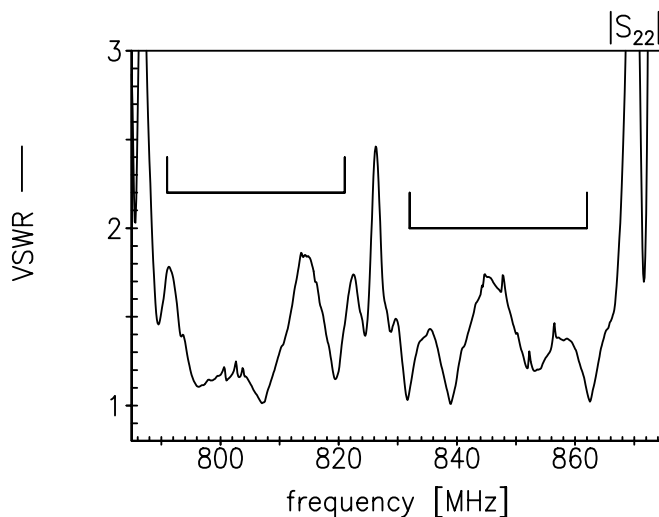
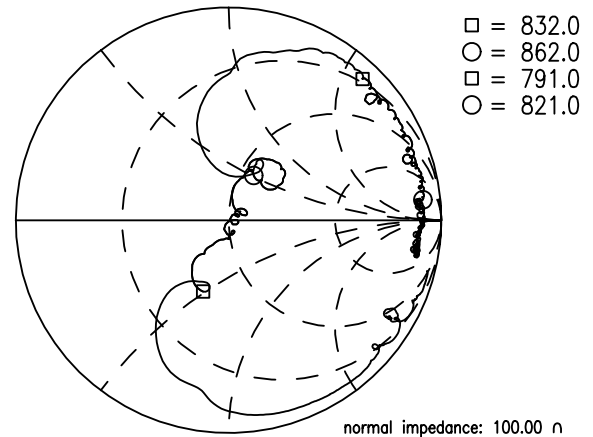
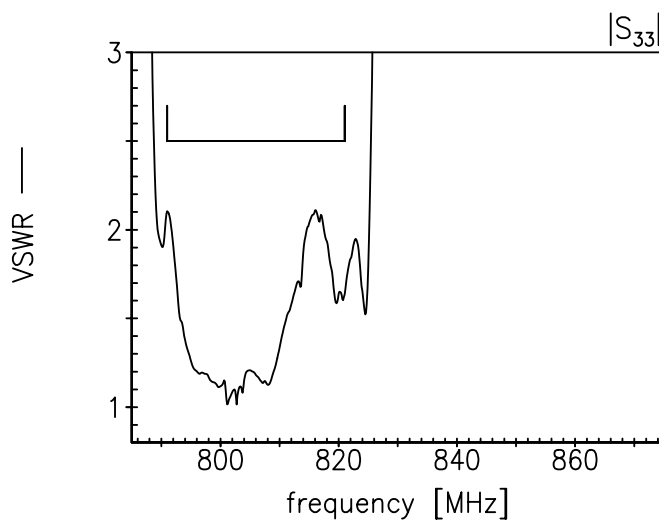
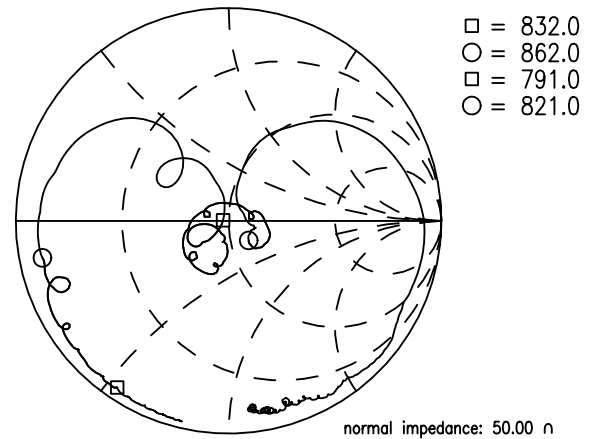
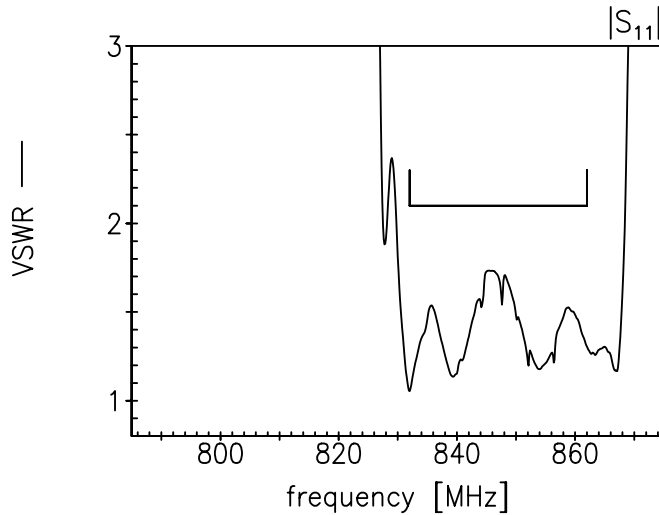
SAW Duplexer

847.0 / 806.0 MHz

Data sheet



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



SAW Components
B4404
SAW Duplexer
847.0 / 806.0 MHz

Data sheet



References

Type	B4404
Ordering code	B39851B4404P810
Marking and package	C61157-A8-A37
Packaging	F61074-V8247-Z000
Date codes	L_1126
S-parameters	B4404_NB_UN.s4p, B4404_WB_UN.s4p 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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