SAW Components

SAW duplexer

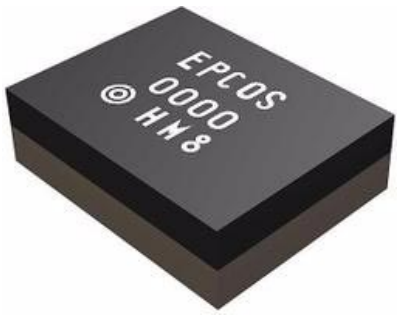
LTE band XXVIII Block A

Series/type:	**B8531**
Ordering code:	**B39771B8531P810**
Date:	May 22, 2014
Version:	2.2

EPCOS AG is a TDK Group Company.

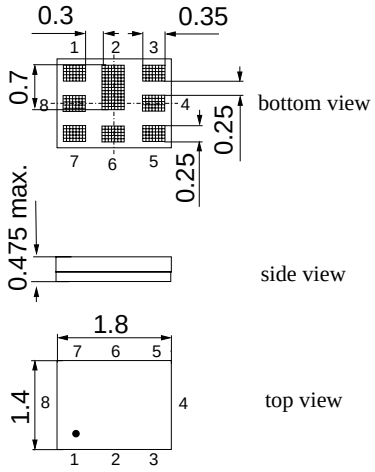
Application

- Low-loss SAW duplexer for mobile telephone LTE Band XXVIII systems
- Low insertion attenuation
- Usable passband 30 MHz
- Duplexer for lower part of Band XXVIII (Block A)
- Companion type is B8532 for upper Band XXVIII (Block B)
- Single ended to balanced transformation in Antenna - Rx path
- Impedance transformation 50Ω to 100Ω in Antenna - Rx path



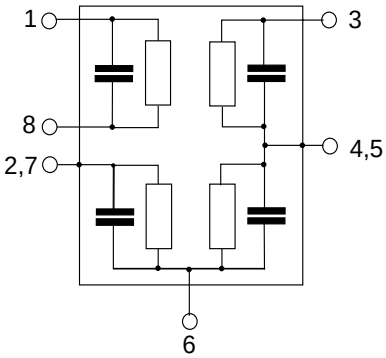
Features

- Package size 1.8 x 1.4mm², package height 0.475mm max.
- RoHS compatible
- Approximate weight 0.0042 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- **M**oisture **S**ensitive **L**evel 3



Pin configuration

1,8	RX output
3	TX input
6	Antenna
2,4,5,7	Ground



Data Sheet SMD

Characteristics

Temperature range for specification: T = -20 ˚C to +90 ˚C
ANT terminating impedance: Z_{ANT}= 50 Ω || 7.5 nH
TX terminating impedance: Z_{TX} = 50 Ω + 4.0 nH (series)
RX terminating impedance: Z_{RX} = 100 Ω

Characteristics Tx - Ant		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	718.0	—	MHz
Maximum insertion attenuation	α				
703.240... 732.760MHz			2.4	3.5	dB
Amplitude ripple	α				
703.240... 732.760MHz			1.5	2.4	dB
VSWR					
TX port 703.0 ... 733.0 MHz			1.7	2.0	
ANT port 703.0 ... 733.0 MHz			1.7	2.0	
Attenuation	α				
10.0 ... 670.0 MHz		30	36		dB
670.0 ... 694.0 MHz		30	36		dB
758.240... 787.760MHz		43	48		dB
788.0 ... 803.0 MHz		30	38		dB
859.0 ... 894.0 MHz		30	36		dB
1225.0 ... 1250.0 MHz		35	42		dB
1406.0 ... 1466.0 MHz		34	38		dB
1559.0 ... 1563.0 MHz		34	37		dB
1565.42 ... 1573.374MHz		34	37		dB
1573.374... 1577.466MHz		34	37		dB
1577.466... 1585.42 MHz		34	37		dB
1597.55 ... 1605.89 MHz		34	37		dB
1830.0 ... 1880.0 MHz		27	35		dB
2109.0 ... 2199.0 MHz		30	34		dB
2400.0 ... 2484.0 MHz		28	33		dB
2812.0 ... 2932.0 MHz		20	32		dB
3515.0 ... 3665.0 MHz		20	32		dB
4228.0 ... 4398.0 MHz		20	33		dB
4921.0 ... 5850.0 MHz		15	22		dB

Data Sheet SMD

Characteristics

Temperature range for specification: T = –20 ˚C to +90 ˚C
ANT terminating impedance: Z_{ANT} = 50 Ω || 7.5 nH
TX terminating impedance: Z_{TX} = 50 Ω + 4.0 nH (series)
RX terminating impedance: Z_{RX} = 100 Ω

Characteristics Rx - Ant		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	773.0	—	MHz
Maximum insertion attenuation	α				
758.240... 787.760MHz			2.2	3.1	dB
Amplitude ripple	α				
758.240... 787.760MHz			0.7	1.6	dB
VSWR					
RX port 758.0 ... 788.0 MHz			1.7	2.0	
ANT port 758.0 ... 788.0 MHz			1.6	2.0	
Attenuation	α				
1.0 ... 703.0 MHz		40	60		dB
703.0 ... 733.0 MHz		45	62		dB
1710.0 ... 1785.0 MHz		40	54		dB
1850.0 ... 1920.0 MHz		40	53		dB
1920.0 ... 2400.0 MHz		40	52		dB
2400.0 ... 2500.0 MHz		45	52		dB
2484.0 ... 2775.0 MHz		40	51		dB
2775.0 ... 2880.0 MHz		45	51		dB
2800.0 ... 6000.0 MHz		40	46		dB

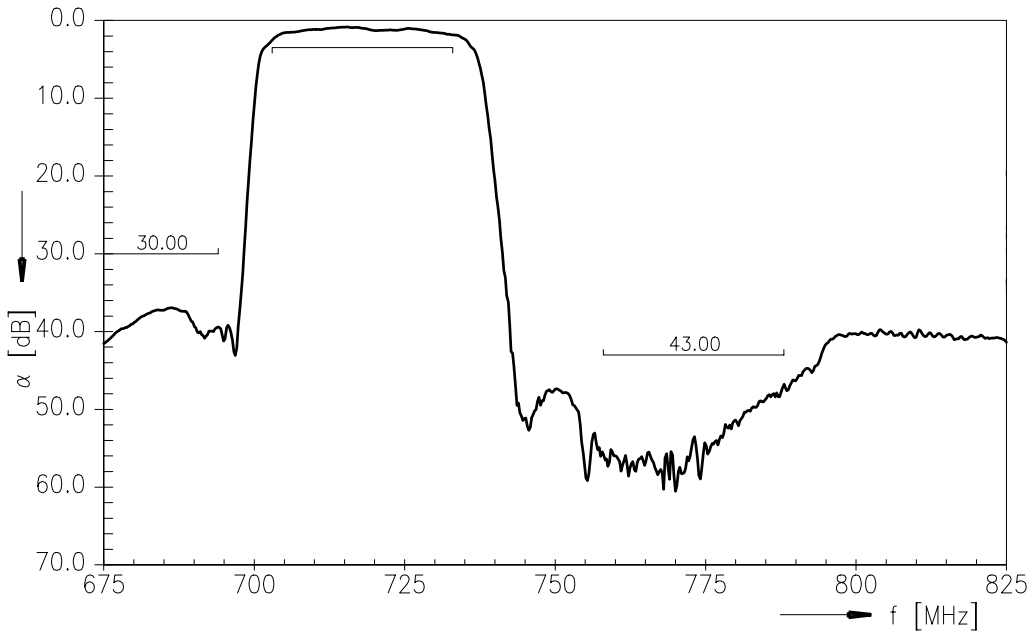
Characteristics TX - RX		min.	typ. @ 25 ˚C	max.	
Differential Mode Isolation	α				
703.240... 732.760MHz		55	63		dB
758.240... 787.760MHz		50	54		dB
Common Mode Isolation	α				
703.240... 732.760MHz		55	61		dB

Maximum ratings

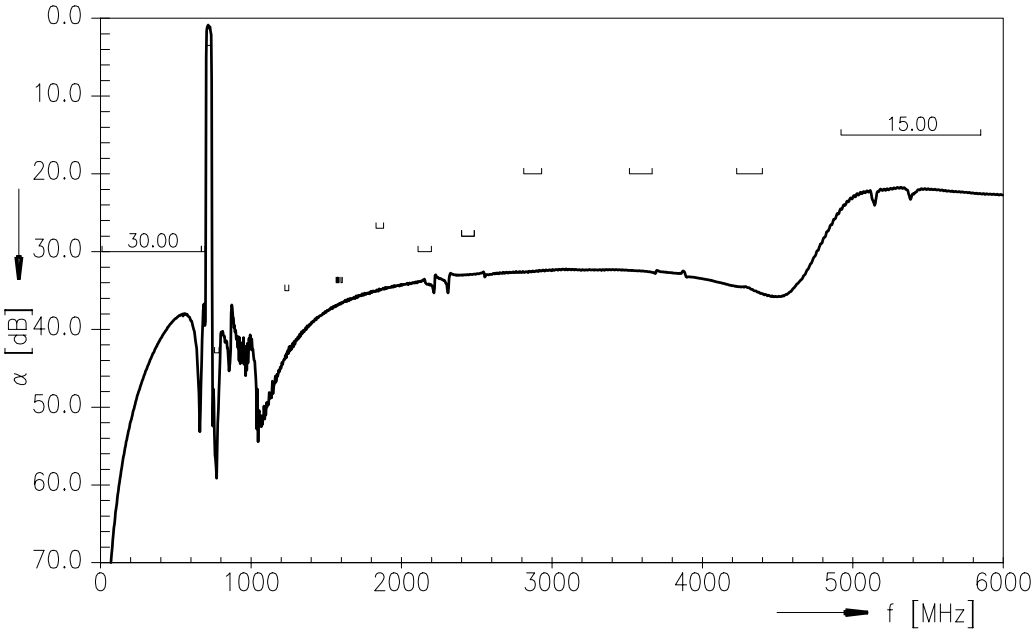
Storage temperature range	T_{stg}	–40/+85[1)]	°C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	100[2)]	V	machine model, 10 pulses
ESD voltage	V_{ESD}	300[3)]	V	HBM,+/- 1 pulses
ESD voltage	V_{ESD}	600[4)]	V	CDM,+/- 3 pulses
Input power at	P_{IN}			
703.0 ... 733.0 MHz		29	dBm	} 5 MHz LTE uplink
elsewhere		10	dBm	} 50 °C, 3000 h

1) Extended upperlimit: 168@125°C acc. to IEC 60068-2-2 Bb.
2) acc. to JESD22-A115B (machine model), 10 negative & 10 positive pulses.
3) acc. to JESD22-A114F (human body model), 1 negative & 1 positive pulses.
4) acc. to JESD22-A101C (charge device model), 3 negative & 3 positive pulse

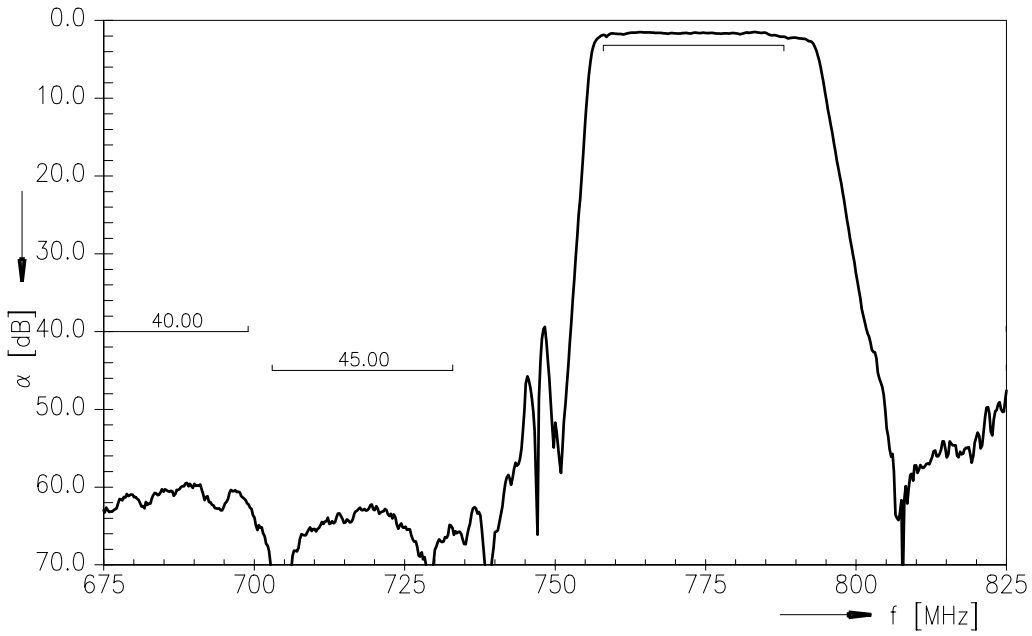
Frequency response Tx-Antenna



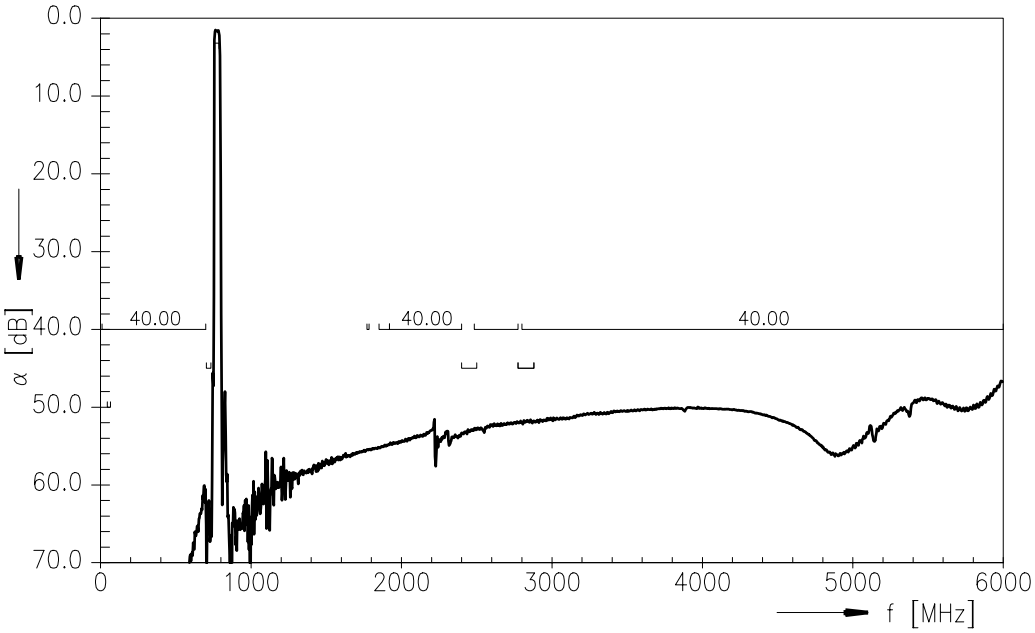
Frequency response Tx-Antenna (wideband)



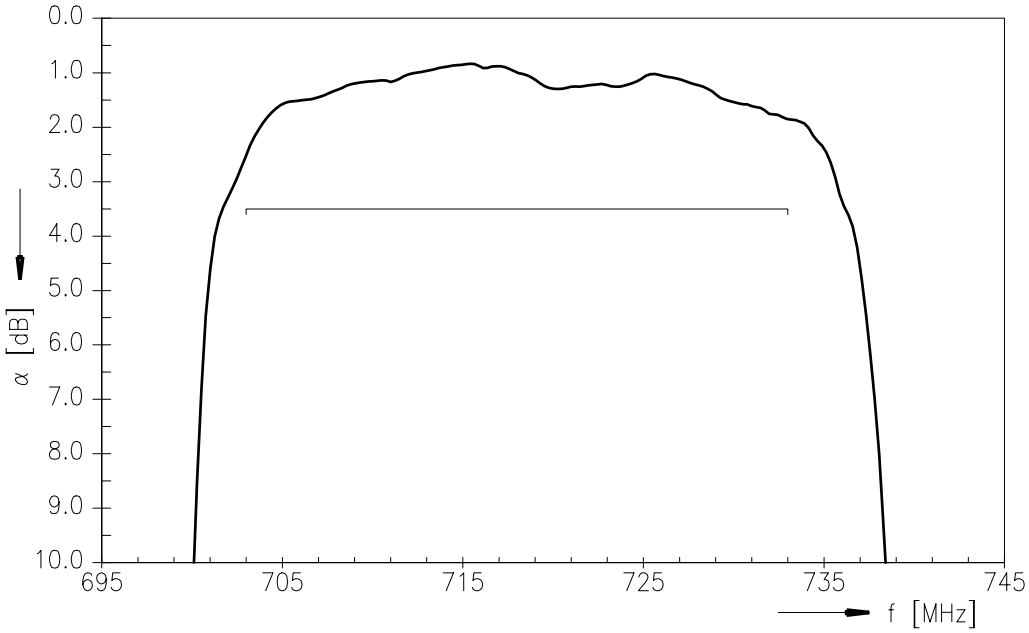
Frequency response Antenna-Rx



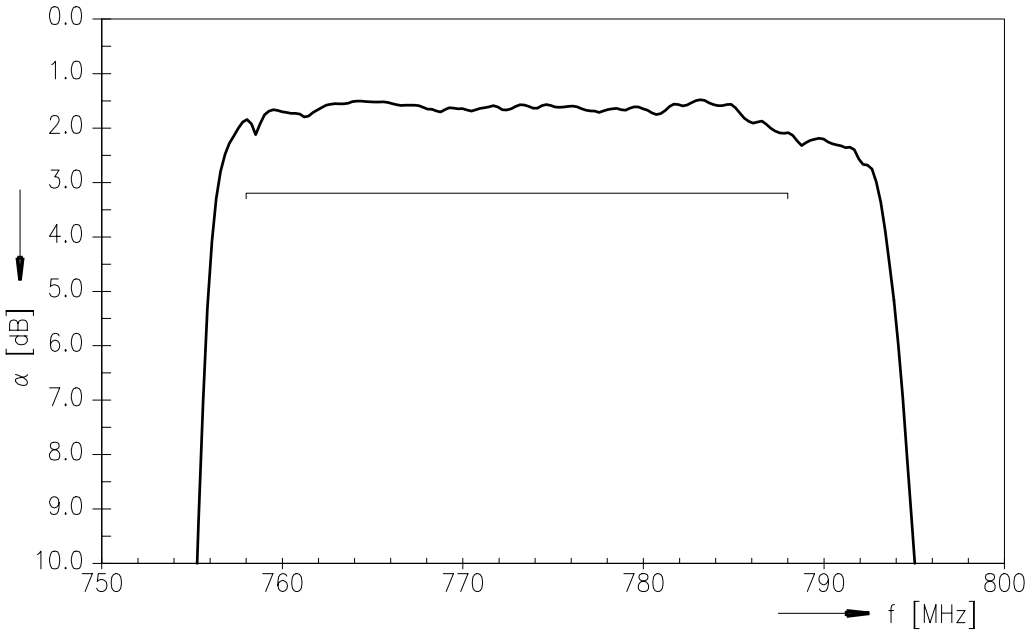
Frequency response Antenna-Rx (wideband)



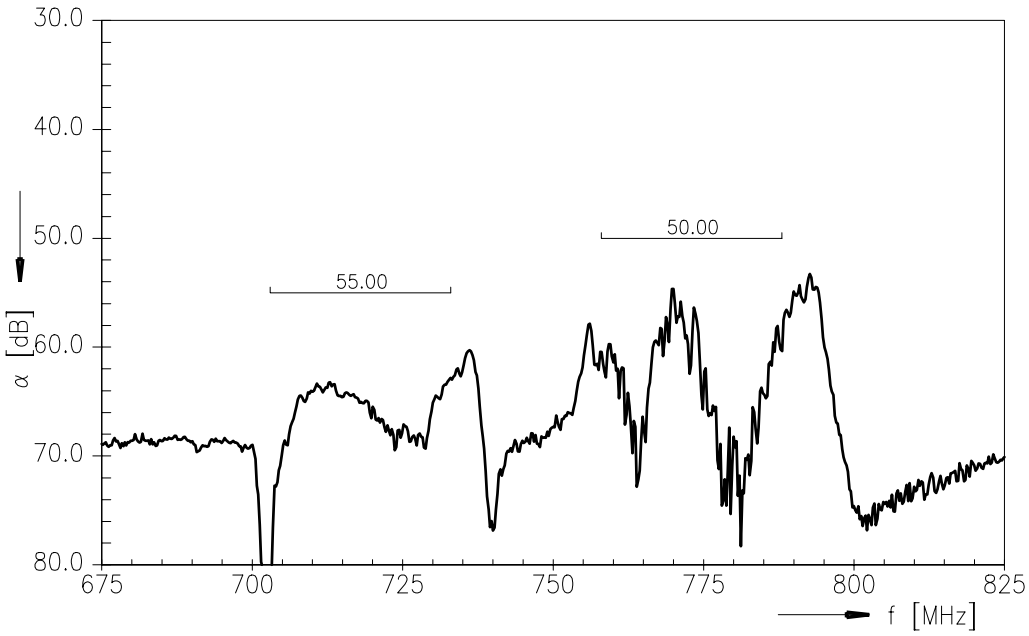
Frequency Response TX - Ant (passband, CW test signal)



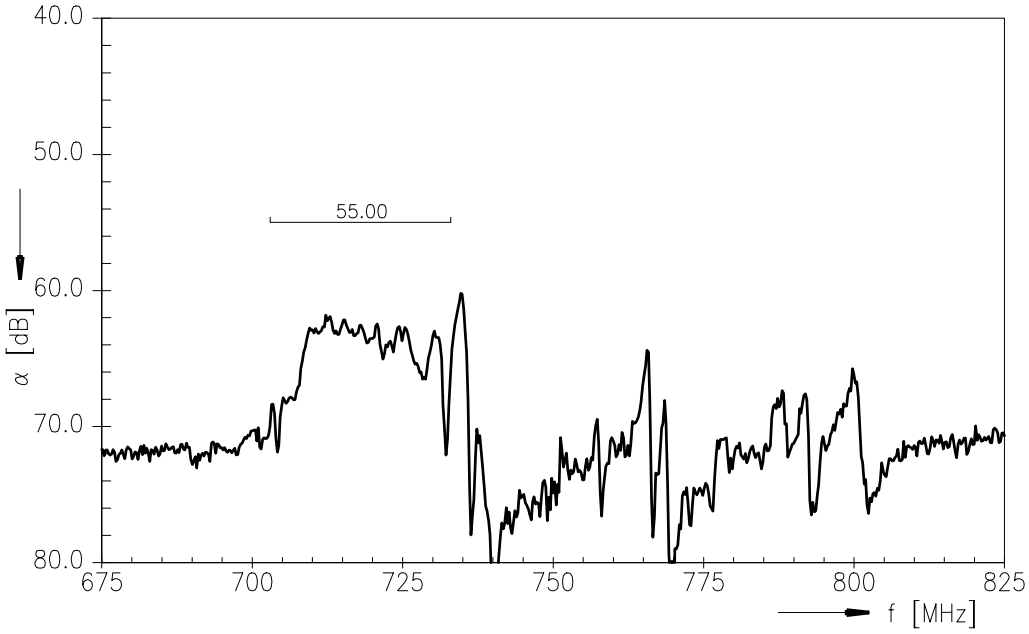
Frequency Responce Ant-RX (passband, CW test signal)



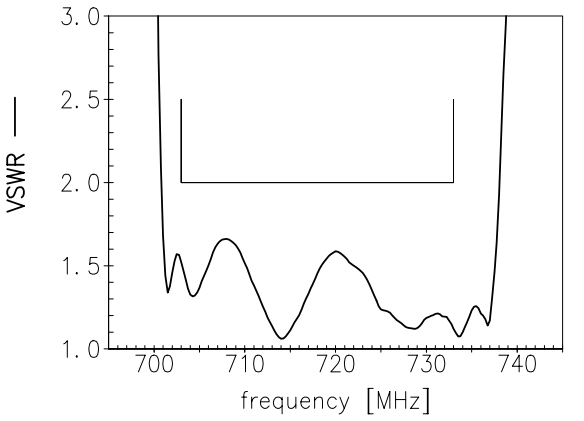
Frequency response Tx-Rx (differential mode, CW signal)

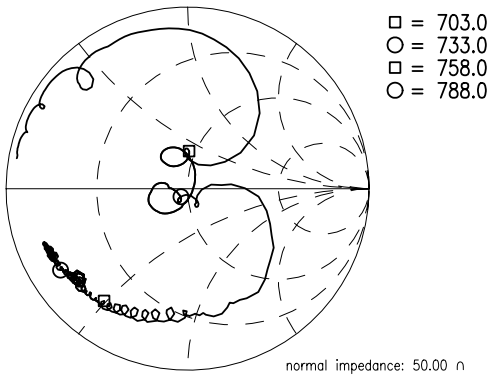


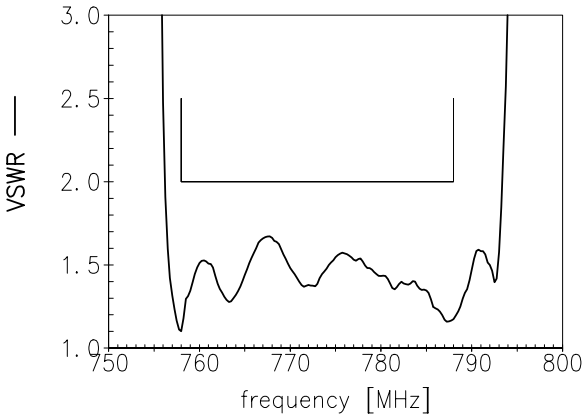
Frequency response Tx-Rx (common mode, CW signal)

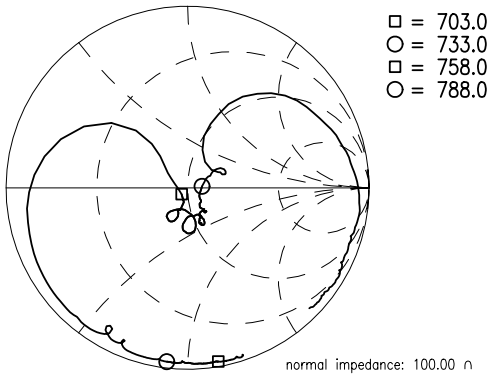


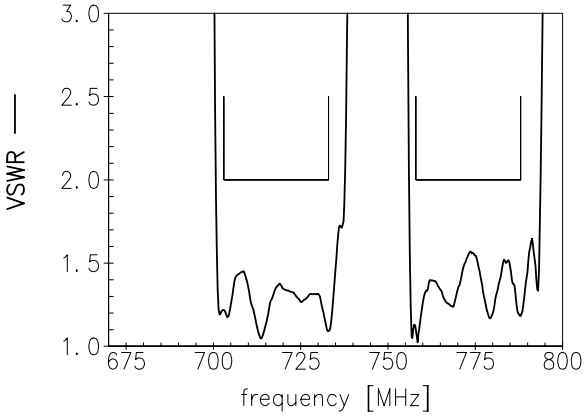
Return loss **S_{11} Tx-port** **S_{22} Antenna-port** **S_{33} Rx-portReferences**

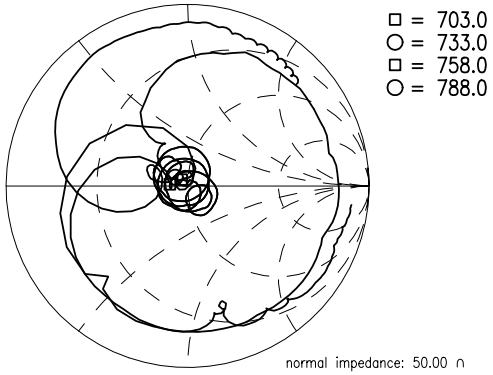












References

Type	B8531
Ordering code	B39771B8531P810
Marking and package	C61157-A8-A79
Packaging	F61047-V8247-Z000
Date codes	L_1126
S-parameters	B8531_NB_UN.s4p, B8531_WB_UN.s4p See file header for pin/port assignment.
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 8th, 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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