SAW Components

SAW Duplexer
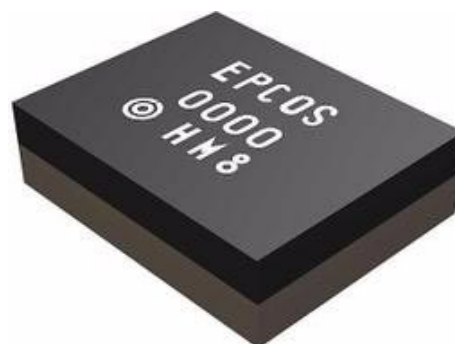## LTE Band 20

Series/type:	**B8622**
Ordering code:	**B39851B8622P810**
Date:	May 12, 2015
Version:	2.5

EPCOS AG is a TDK Group Company.

☼TDK

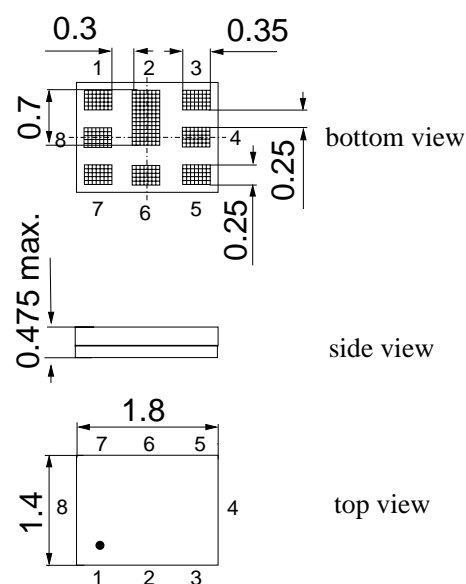| SAW Components	**B8622**
SAW Duplexer	**847.0 / 806.0 MHz**

DataSheet

Application

- Low-loss SAW duplexer for LTE Band 20 systems
- Very high isolation
- Usable passband 30 MHz
- Single-ended duplexer
- Very small size and low height

Features

- Package size 1.8 * 1.4 mm^2
- Maximum height : 0.475 mm
- RoHS compatible
- Approx. weight 0.0035g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, Au-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- **M**oisture **S**ensitivity **L**evel **3**

bottom view

side view

top view

Pin configuration

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

Please read *cautions and warnings and important notes* at the end of this document.

2   May 12, 2015

SAW Duplexer   **847.0 / 806.0 MHz**

DataSheet   SMD

Characteristics

Temperature range for specification:	T =	-20 ˚C to +90 ˚C
TX terminating impedance:	Z_{Tx} =	50 Ω + 3.9nH
ANT terminating impedance:	Z_{Ant} =	50 Ω ‖ 11 nH
RX teminating impedance:	Z_{Rx} =	50 Ω

Characteristics Tx-Antenna					min.	typ. @ 25 ˚C	max.	
Center frequency				f_c		847.0		MHz
Maximum insertion attenuation				α				
	832.0	...	862.0	MHz	—	1.7	2.5	dB
	832.0	...	862.0	MHz	—	1.7	2.0[1]	dB
Amplitude ripple (p-p)				$\Delta\alpha$				
	832.0	...	862.0	MHz	—	0.7	1.7	dB
Error Vector Magnitude				EVM[2]				
@ $f_{Carrier}$ 834.4	...	859.6	MHz		—	2.1	4.0	
@ $f_{Carrier}$ 834.4	...	859.6	MHz		—	2.1	3.0[1]	
Input VSWR (Tx port)								
	832.0	...	862.0	MHz	—	1.5	2.0	
Output VSWR (Ant Port)								
	832.0	...	862.0	MHz	—	1.6	2.0	
Absolute attenuation				α				
	10.0	...	771.0	MHz	35	43	—	dB
	771.0	...	791.0	MHz	40	48	—	dB
	791.0	...	821.0	MHz	50	60	—	dB
	821.0	...	827.0	MHz	1.5	7	—	dB
	873.0	...	903.0	MHz	5	25	—	dB
	925.0	...	960.0	MHz	35	45	—	dB
	1565.0	...	1606.0	MHz	45	52	—	dB
	1664.0	...	2170.0	MHz	40	55	—	dB
	2400.0	...	2500.0	MHz	48	56	—	dB
	2500.0	...	2620.0	MHz	40	56	—	dB
	2620.0	...	2690.0	MHz	40	55	—	dB
	3328.0	...	3448.0	MHz	30	44	—	dB
	4000.0	...	6000.0	MHz	20	30	—	dB

[1] At 25 ˚C
[2] Error Vector Magnitude (EVM) based on definition in 3GPP TS 25.141

DataSheet   ⊑Mꓷ

Characteristics

Temperature range for specification:	T	=	-20 ˚C to +90 ˚C
TX terminating impedance:	Z_{Tx}	=	50 Ω + 3.9nH
ANT terminating impedance:	Z_{Ant}	=	50 Ω || 11 nH
RX teminating impedance:	Z_{Rx}	=	50 Ω

Characteristics Antenna-Rx		**min.**	**typ.** **@ 25 ˚C**	**max.**	
Center frequency	f_c		806.0		MHz
Maximum insertion attenuation	α				
791.0 ... 821.0 MHz		—	1.7	3.0	dB
791.0 ... 821.0 MHz		—	1.7	2.5[1]	dB
Amplitude ripple (p-p)	Δα				
791.0 ... 821.0 MHz		—	0.7	2.2	dB
Input VSWR (Ant port)					
791.0 ... 821.0 MHz		—	1.6	2.0	
Output VSWR (Rx Port)					
791.0 ... 821.0 MHz		—	1.8	2.2	
Absolute attenuation	α				
10.0 ... 771.0 MHz		40	44	—	dB
771.0 ... 782.0 MHz		10	25	—	dB
832.0 ... 862.0 MHz		50	60	—	dB
873.0 ... 903.0 MHz		40	54	—	dB
1623.0 ... 1683.0 MHz		40	47	—	dB
2373.0 ... 2570.0 MHz		40	45	—	dB
4900.0 ... 6000.0 MHz		13	17	—	dB

[1] At 25 ˚C

Characteristics

Temperature range for specification:	T	=	-20 ˚C to +90 ˚C
TX terminating impedance:	Z_{Tx}	=	50 Ω + 3.9nH

DataSheet

ANT terminating impedance: $Z_{Ant} =$ 50 Ω || 11 nH
RX teminating impedance: $Z_{Rx} =$ 50 Ω

Characteristics Tx-Rx		min.	typ. @ 25 ˚C	max.	
Isolation	α				
791.34 ... 820.66 MHz		55	59	—	dB
832.0 ... 862.0 MHz		57	62	—	dB
1574.0 ... 1577.0 MHz		40	55	—	dB
1664.0 ... 1724.0 MHz		20	55	—	dB
2496.0 ... 2586.0 MHz		20	53	—	dB

Maximum Ratings

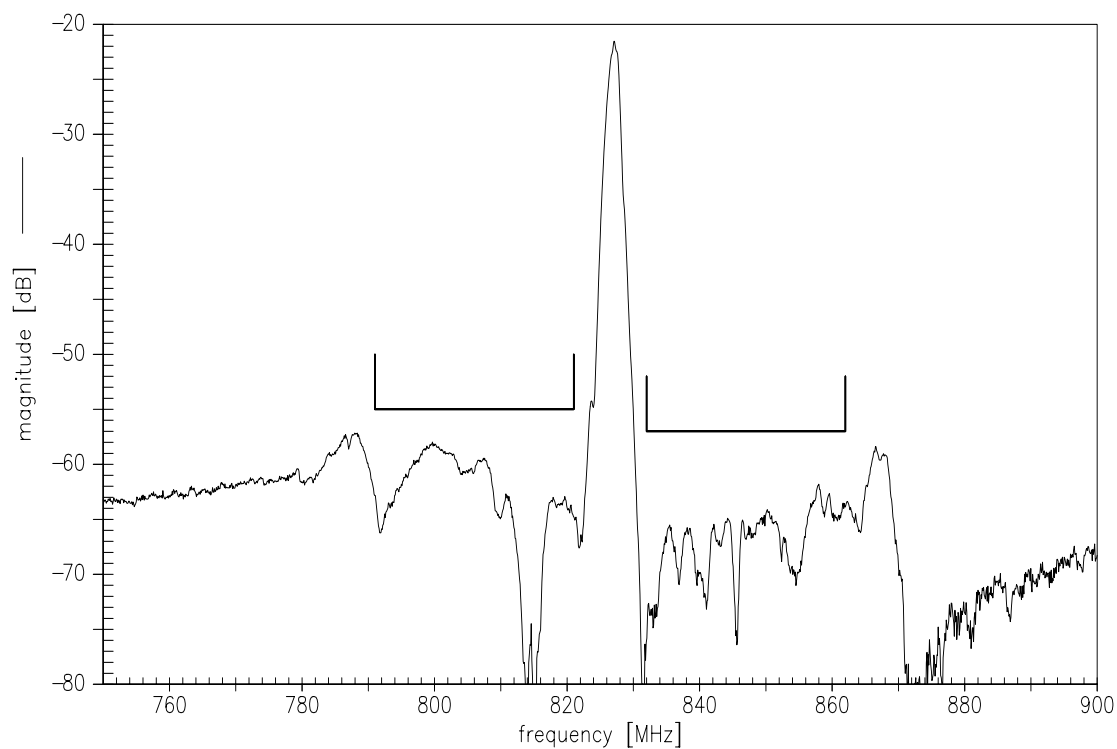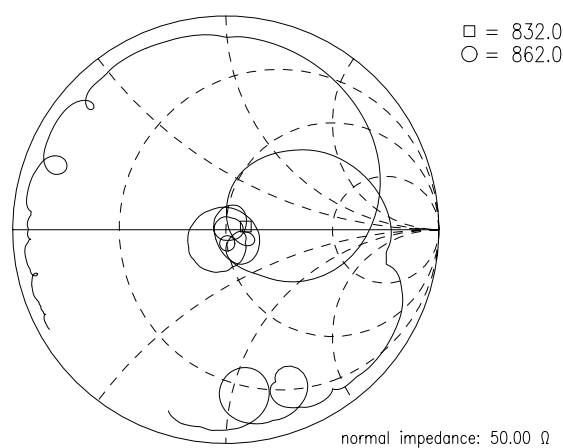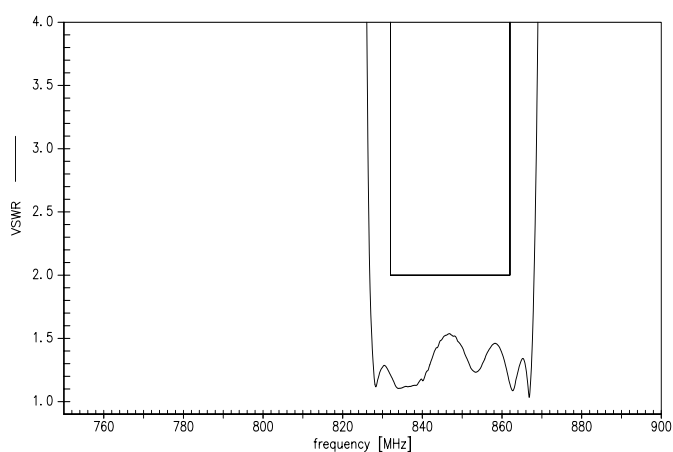| Storage temperature range	T_{stg}	−40/+85	˚C	
DC voltage	V_{DC}	0	V	
ESD voltage, Tx, Ant Port	V_{ESD}	300[1]	V	HB Model
ESD voltage	V_{ESD}	600[2]	V	CD Model
Input power at Tx Port				
832.0 ...862.0 MHz	P_{in}	29	dBm	} LTE Up link 5MHz
elsewhere	P_{in}	10	dBm	50 ˚C, 5.000h

[1] Acc. to JESD22-A114F (HBM - Human Body Level), 1 negative & 1 positive pulses.

[2] Acc. to JESD22-C101C (CDM - Fiel Inducted Charged Device Model), 3 negative & 3 positive pulses.

Frequency Response TX-ANT
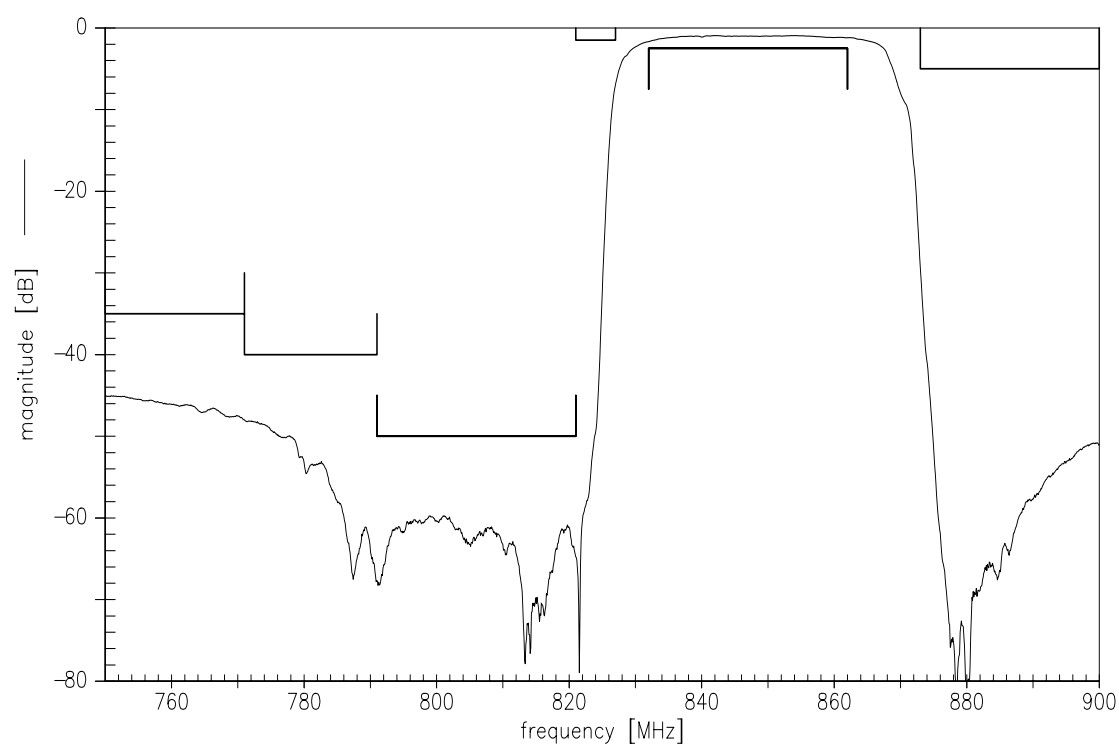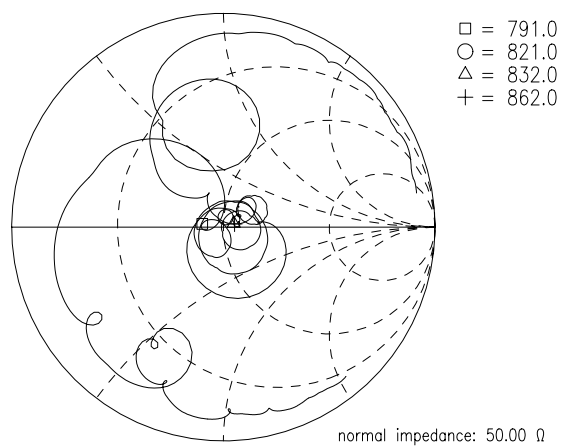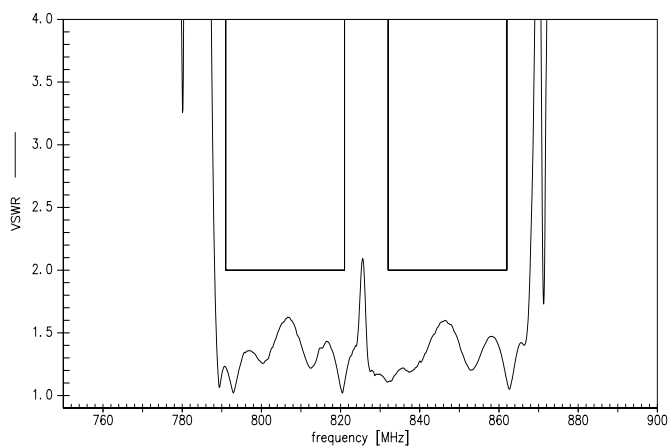

Frequency Response TX-ANT
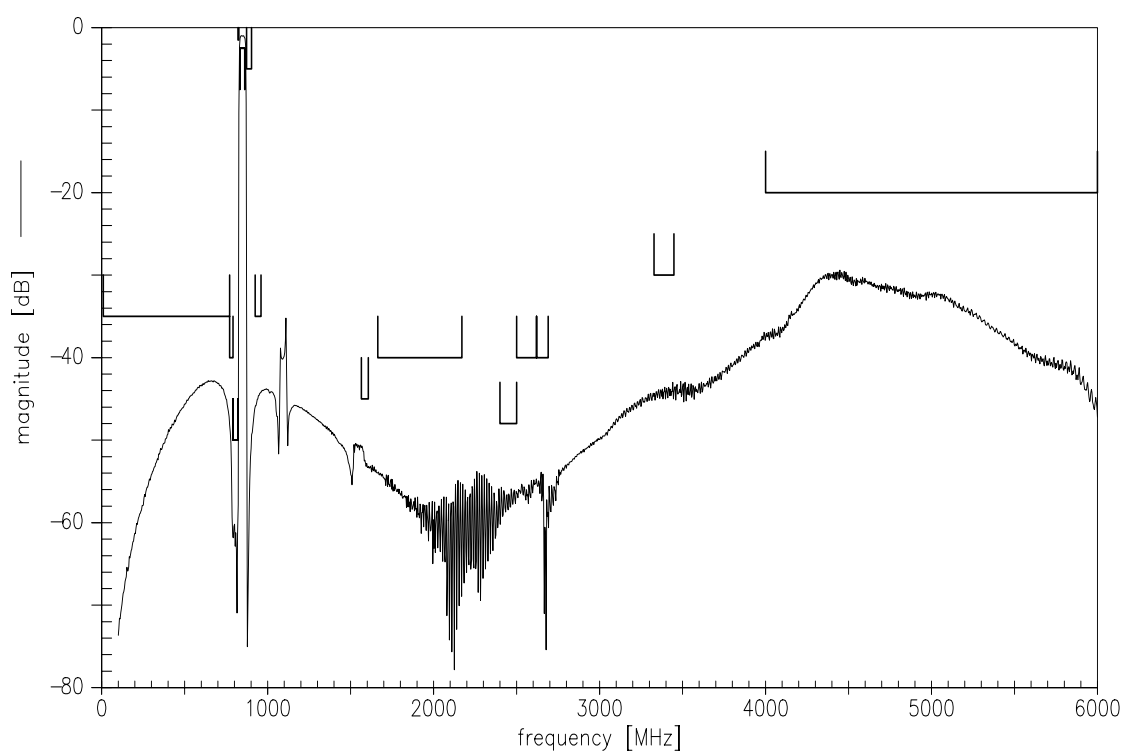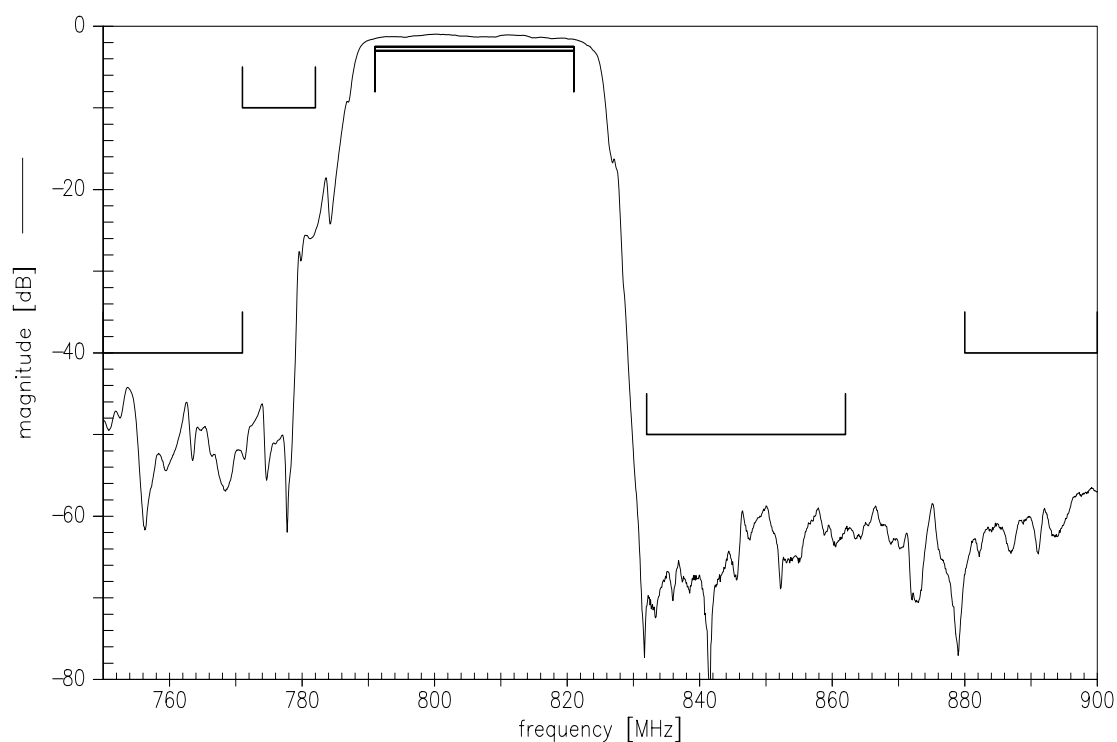
Frequency Response RX-ANT

Frequency Response RX-ANT

Please read *cautions and warnings and important notes* at the end of this document.

7

May 12, 2015
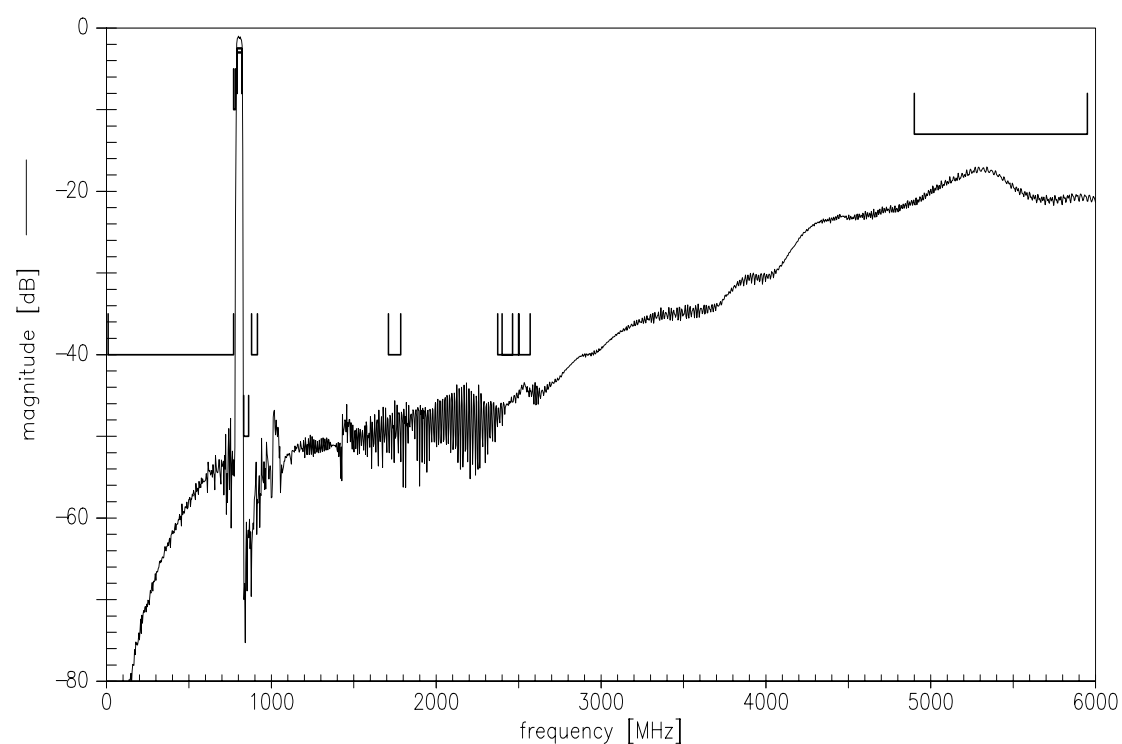
Frequency Response ANT-TX

Frequency Response ANT-RX

Please read *cautions and warnings and important notes* at the end of this document.

8   May 12, 2015
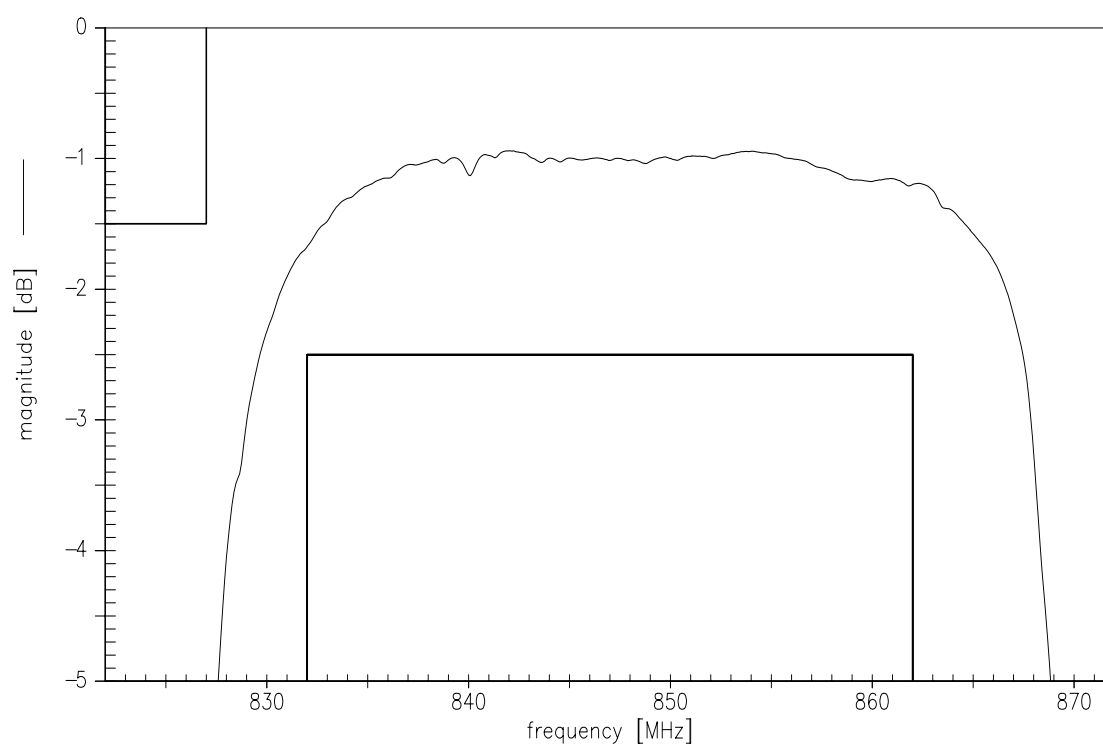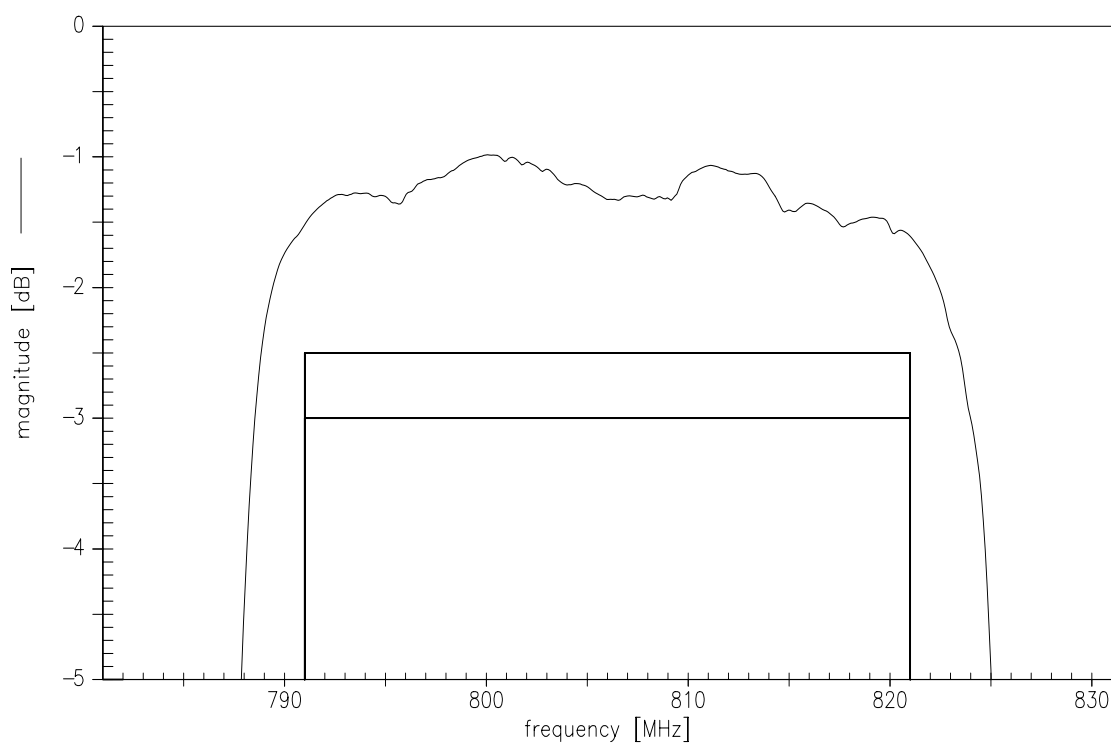
Frequency Response TX-RX (ISOLATION)

S11 VSWR (TX)

□ = 832.0
○ = 862.0

normal impedance: 50.00 Ω

Please read *cautions and warnings and important notes* at the end of this document.

9   May 12, 2015

DataSheet

S22 VSWR (ANT)

□ = 791.0
○ = 821.0
△ = 832.0
+ = 862.0

normal impedance: 50.00 Ω

S33 VSWR (RX)

□ = 791.0
○ = 821.0

normal impedance: 50.00 Ω

SAW Components
B8622

SAW Duplexer
847.0 / 806.0 MHz

DataSheet
SMD

References

Type	B8622
Ordering code	B39851B8622P810 B39851B8622P810S 5
Marking and package	C61157-A8-A68
Packaging	F61074-V8259-Z000
Date codes	L_1126
S-parameters	B8622_NB_UN.s3p, B8622_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 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.
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.
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 further information please contact your local EPCOS sales office or visit our webpage at www.epcos.com .

Please read *cautions and warnings and important notes* at the end of this document.

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application.** As a rule, EPCOS is either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether an EPCOS product with the properties described in the product specification is suitable for use in a particular customer application.

2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified.** In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.

3. **The warnings, cautions and product-specific notes must be observed.**

4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous)**. Useful information on this will be found in our Material Data Sheets on the Internet (www.epcos.com/material). Should you have any more detailed questions, please contact our sales offices.

5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order.
   We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available. The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

6. Unless otherwise agreed in individual contracts, **all orders are subject to the current version of the "General Terms of Delivery for Products and Services in the Electrical Industry" published by the German Electrical and Electronics Industry Association (ZVEI)**.

7. The trade names EPCOS, Alu-X, CeraDiode, CeraLink, CeraPad, CeraPlas, CSMP, CSSP, CTVS, DeltaCap, DigiSiMic, DSSP, ExoCore, FilterCap, FormFit, LeaXield, MiniBlue, MiniCell, MKD, MKK, MotorCap, PCC, PhaseCap, PhaseCube, PhaseMod, PhiCap, PQSine, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMDAD, SiMic, SIMID, SineFormer, SIOV, SIP5D, SIP5K, TFAP, ThermoFuse, WindCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at www.epcos.com/trademarks.