SAW Components

SAW Duplexer

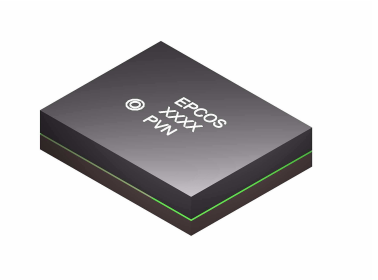
LTE Band II (PCS)

Series/type:	**B8618**
Ordering code:	**B39202B8618P810**
Date:	January 22, 2015
Version:	2.0

EPCOS AG is a TDK Group Company.

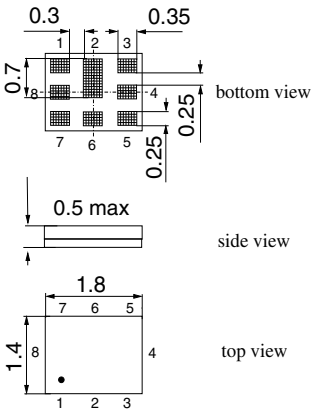
Application

- Low-loss SAW duplexer for mobile telephone LTE Band II (PCS) systems
- Low insertion attenuation
- Low amplitude ripple
- Usable passband 60 MHz
- Single ended to balanced transformation in Antenna - Rx path
- Impedance transformation 50Ω to 100Ω in Antenna - Rx path



Features

- Package size 1.8 x 1.4 mm², max. height 0.5 mm
- RoHS compatible
- Approx. weight 0.0035 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 (**MSL**)



Pin configuration

- 1, 8 RX Output, balanced
- 3 TX Input, single ended
- 6 Antenna
- 2, 4, 5, 7 Ground

Characteristics

Temperature range for specification: T = –30 ˚C to +85 ˚C

TX terminating impedance: Z_{TX} = 50 Ω
ANT terminating impedance: Z_{ANT} = 50 Ω
RX terminating impedance: Z_{RX} = 100 Ω || 9.5 nH (differential mode)
RX terminating impedance: Z_{RX} = 25 Ω (common mode)

		B8618[1]			
Characteristics TX - ANT		**min.**	**typ. @ 25˚C**	**max.**	
Center frequency	f_C	—	1880	—	MHz
Maximum insertion attenuation					
1850.24 ...1909.76 MHz		—	1.9	2.5	dB
Amplitude variation (over any 5 MHz)					
1850.24 ...1909.76 MHz		—	0.3	1.5	dB
Error Vector Magnitude					
@$f_{Carrier}$ 1852.4 ...1907.6 MHz	EVM [2]	—	0.5	3.0	%
Input VSWR (TX port)					
1850.24 ...1909.76 MHz		—	1.4	2.0	
Output VSWR (ANT port)					
1850.24 ...1909.76 MHz		—	1.4	2.0	
Attenuation					
50.0 ... 787.0 MHz		30	42	—	dB
728.0 ... 764.0 MHz		40	43	—	dB
869.0 ... 894.0 MHz		40	43	—	dB
1226.0 ... 1250.0 MHz		43	50	—	dB
1559.0 ... 1606.0 MHz		43	54	—	dB
1605.9 ... 1680.0 MHz		30	54	—	dB
1930.24 ...1989.76 MHz		44	57	—	dB
2010.0 ... 2025.0 MHz		20	52	—	dB
2110.0 ... 2155.0 MHz		44	49	—	dB
2400.0 ... 2500.0 MHz		25	35	—	dB
3700.0 ... 3820.0 MHz		26	29	—	dB
4900.0 ... 5950.0 MHz		21	29	—	dB
5550.0 ... 5730.0 MHz		23	27	—	dB

[1] Specified min./max. values are valid for a testing power of +10 dBm.
[2] Error Vector Magnitude (based on definition given in 3GPP TS 25.141) of a 3.84 Mcps WCDMA signal.

Characteristics

Temperature range for specification: T = –30 ˚C to +85 ˚C

TX terminating impedance: Z_{TX} = 50 Ω
ANT terminating impedance: Z_{ANT} = 50 Ω
RX terminating impedance: Z_{RX} = 100 Ω || 9.5 nH (differential mode)
RX terminating impedance: Z_{RX} = 25 Ω (common mode)

		B8618[1)]			
Characteristics ANT - RX		**min.**	**typ. @ 25˚C**	**max.**	
Center frequency	f_C	—	1960	—	MHz
Maximum insertion attenuation					
1930.24 ...1989.76 MHz		—	2.7	3.5	dB
Input VSWR (ANT port)					
1930.24 ...1989.76 MHz		—	1.6	2.0	
Output VSWR (RX port)					
1930.24 ...1989.76 MHz		—	1.6	2.0	
Attenuation	α				
50.0 ... 1850.0 MHz		45	49	—	dB
80.0 MHz		50	>60	—	dB
1850.24 ...1909.76 MHz		45	52	—	dB
2050.0 ... 2075.0 MHz		25	39	—	dB
2075.0 ... 2350.0 MHz		30	37	—	dB
2350.0 ... 2550.0 MHz		20	31	—	dB
2550.0 ... 6000.0 MHz		40	51	—	dB
5610.0 ... 5845.0 MHz		48	52	—	dB

1) Specified min./max. values are valid for a testing power of +10 dBm.

Characteristics

Temperature range for specification: T = –30 ˚C to +85 ˚C

TX terminating impedance: Z_{TX} = 50 Ω
ANT terminating impedance: Z_{ANT} = 50 Ω
RX terminating impedance: Z_{RX} = 100 Ω || 9.5 nH (differential mode)
RX terminating impedance: Z_{RX} = 25 Ω (common mode)

	B8618[1)]			
Characteristics ANT - RX	**min.**	**typ. @ 25˚C**	**max.**	
Differential Mode Isolation α				
1574.0 ... 1577.0 MHz	40	67	—	dB
1850.24 ...1909.76 MHz	54	57	—	dB
1930.24 ...1989.76 MHz	55	61	—	dB
3700.0 ... 3820.0 MHz	20	58	—	dB
5550.0 ... 5850.0 MHz	20	49	—	dB
Common Mode Isolation α				
1850.24 ... 1909.76 MHz	43	48	—	dB

1) Specified min./max. values are valid for a testing power of +10 dBm.

Maximum ratings

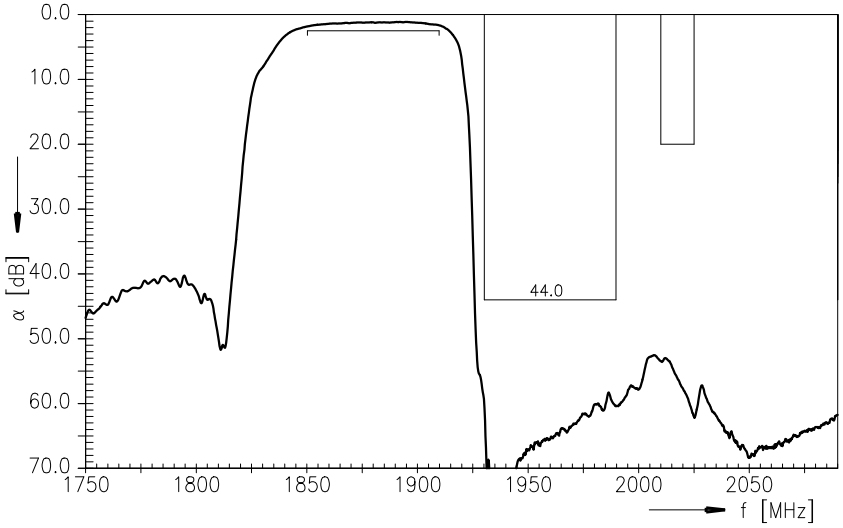
Operable temperature range	T	–30/+90	˚C	
Storage temperature range	T_{stg}	–40/+90	˚C	
DC voltage	V_{DC}	0	V	
ESD voltage	V_{ESD}	300[1)]	V	human body model, 1 pulse
ESD voltage	V_{ESD}	600[2)]	V	charged device model, 3 pulses
Input power at	P_{IN}			source and load impedance 50 Ω
1850.24 ... 1909.76 MHz		29	dBm	} continuous wave
elsewhere		10	dBm	} T = 50˚C, >5.000 h

1) target, acc. to JESD22-A114F (human body model), 1 negative & 1 positive pulses.

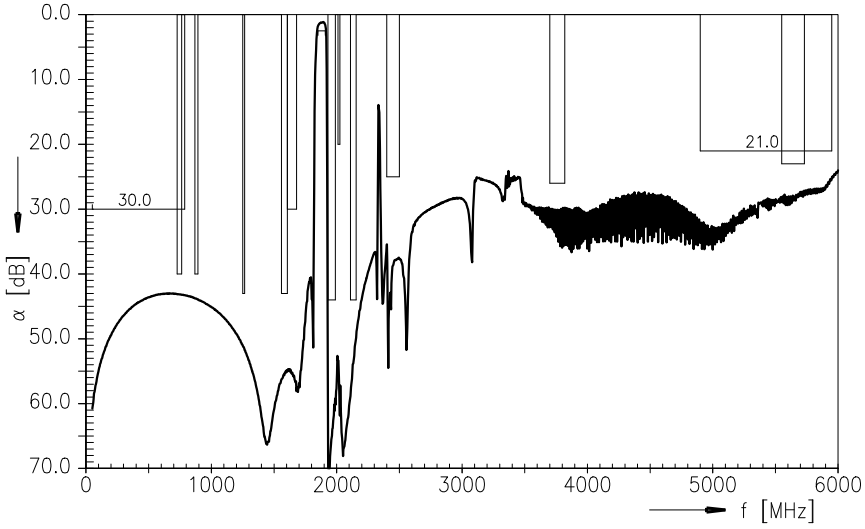
2) target, acc. to JESD22-C101C (charge device model), 3 negative & 3 positive pulses.

Frequency response TX - ANT (passband)

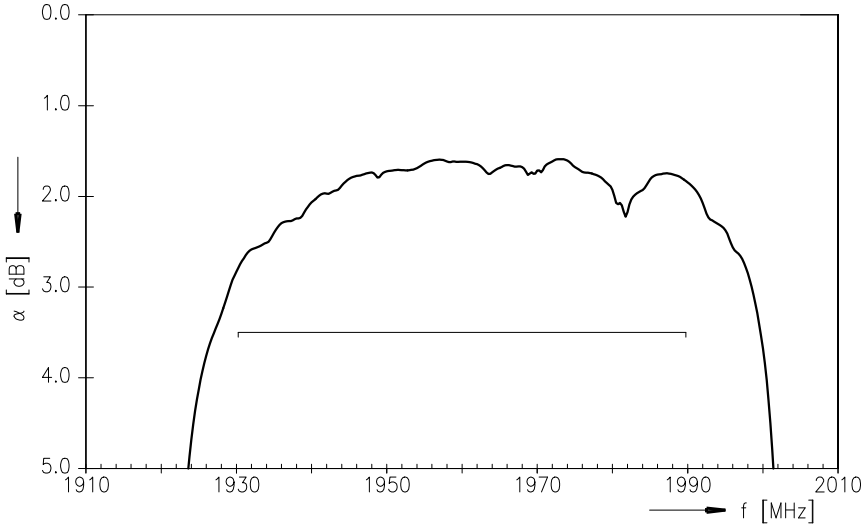
Frequency response TX - ANT



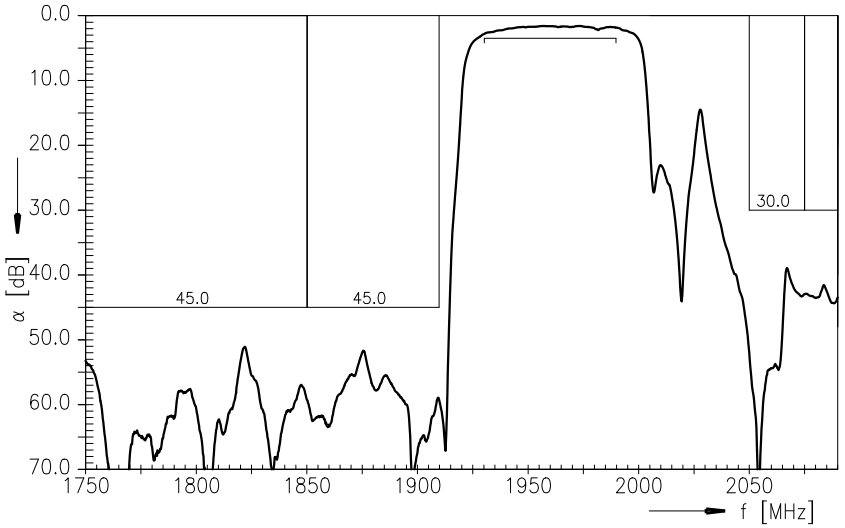
Frequency response TX - ANT (wideband)



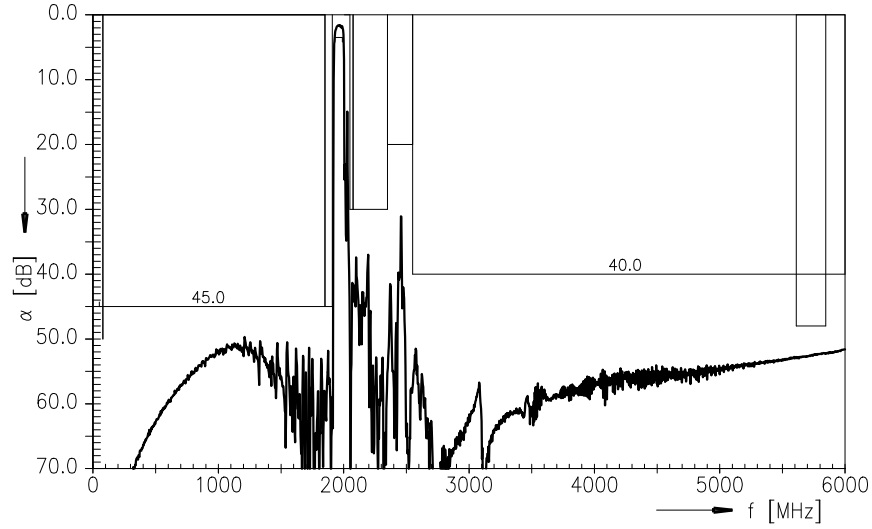
Frequency response ANT - RX (passband)



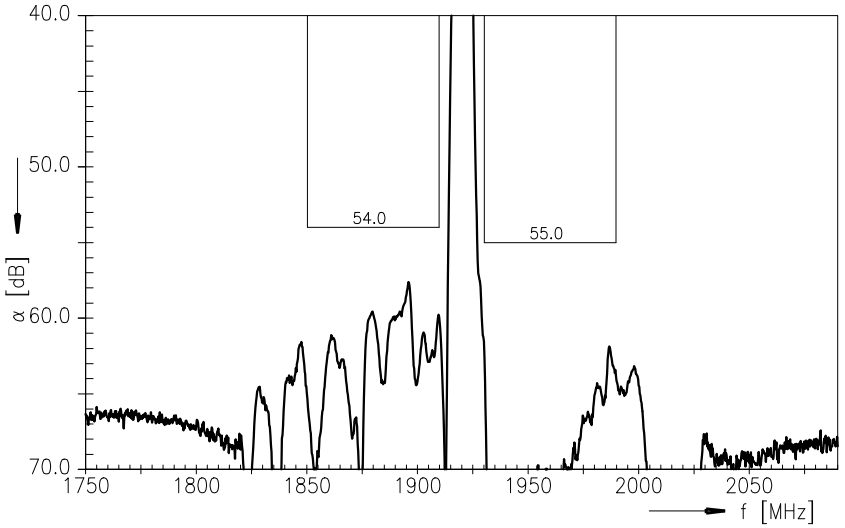
Frequency response ANT - RX



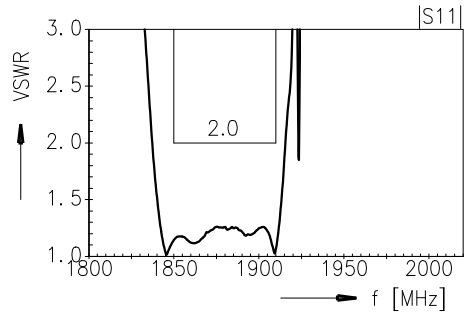
Frequency response ANT - RX (wideband)

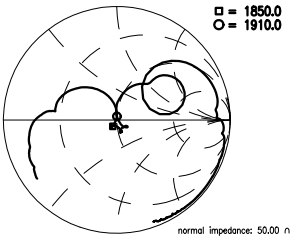


Frequency response TX - RX differential mode isolation

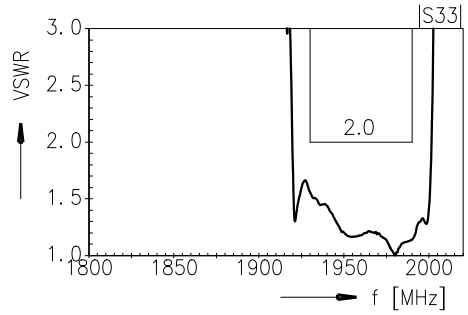


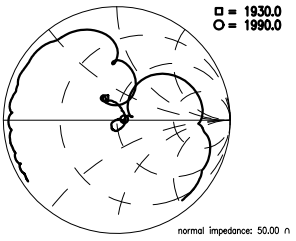
VSWR S_{11} TX-port



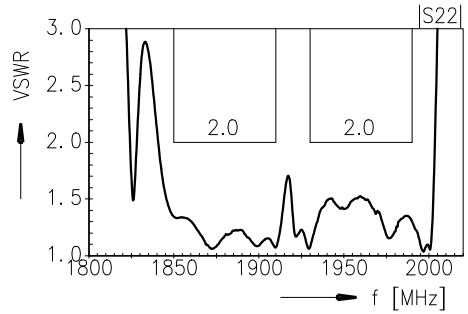


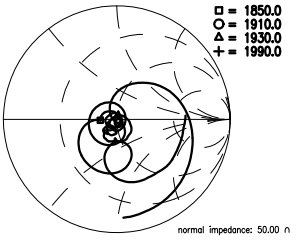
VSWR S_{33} RX-port





VSWR S_{22} ANT-port





References

Type	B8618
Ordering code	B39202-B8618-P810
Marking and package	C61157-A8-A87
Packaging	F61074-V8259-Z000
Date codes	L_1126
S-parameters	B8618_NB_UN.s3p (unmatched, narrow band) B8618_WB_UN.s3p (unmatched, wide band) 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.

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