SAW Components

SAW Duplexer

LTE Band 20

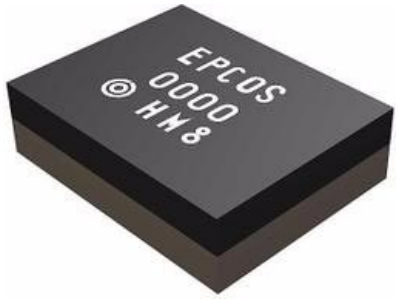
Series/type:	**B8621**
Ordering code:	**B39851B8621P810**
Date:	March 19, 2014
Version:	2.1

EPCOS AG is a TDK Group Company.

Datasheet SMD

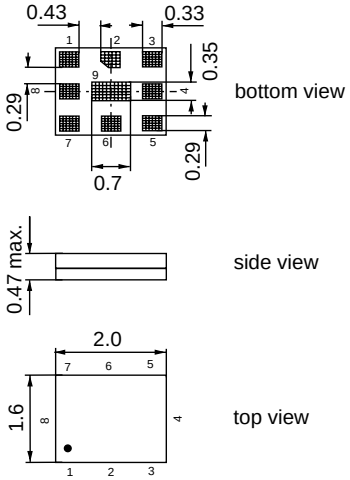
Application

- 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
- Very small size and low height



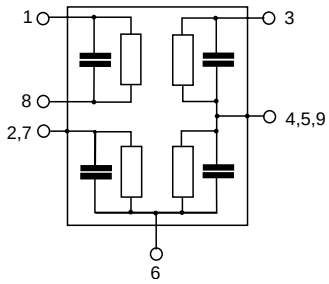
Features

- Package size 2.0 * 1.6 * 0.47 mm³
- RoHS compatible
- 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**



Pin configuration

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



Datasheet SMD

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 || 11 nH
RX teminating impedance: Z_{Rx} = 100 Ω (balanced) || 45 nH

		Development status[1]			
Characteristics Tx-Antenna		**min.**	**typ. @ 25 ˚C**	**max.**	
Center frequency	f_c		847.0		MHz
Maximum insertion attenuation	α				
832.0 ... 862.0 MHz		-	2.0	2.8	dB
832.0 ... 862.0 MHz		-	2.0	2.5[2]	dB
Amplitude ripple (p-p)	Δα				
832.0 ... 862.0 MHz		-	1.0	1.9	dB
Input VSWR (Tx port)					
832.0 ... 862.0 MHz		-	1.6	2.0	
Output VSWR (Ant Port)					
832.0 ... 862.0 MHz		-	1.5	2.0	
Absolute attenuation	α				
10.0 ... 771.0 MHz		35	40	-	dB
771.0 ... 791.0 MHz		35	43	-	dB
791.0 ... 821.0 MHz		45	50	-	dB
873.0 ... 903.0 MHz		13	23	-	dB
925.0 ... 960.0 MHz		30	40	-	dB
1565.0 ... 1606.0 MHz		44	46	-	dB
1664.0 ... 2170.0 MHz		35	48	-	dB
2400.0 ... 2620.0 MHz		33	38	-	dB
2620.0 ... 2690.0 MHz		35	47	-	dB
3328.0 ... 3448.0 MHz		35	47	-	dB
4000.0 ... 6000.0 MHz		13	18	-	dB

[1] Values in columns min., typ. and max. indicate the development status of the current version.
[2] in +25,+55 ˚C temperature range

Datasheet SMD

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 || 11 nH
RX teminating impedance: Z_{Rx} = 100 Ω (balanced) || 45 nH

		Development status[1]			
Characteristics Antenna-Rx		**min.**	**typ. @ 25 ˚C**	**max.**	
Center frequency	f_c		806.0		MHz
Maximum insertion attenuation	α				
791.0 ... 821.0 MHz		-	2.4	3.5	dB
791.0 ... 821.0 MHz		-	2.4	3.0[2]	dB
Amplitude ripple (p-p)	Δα				
791.0 ... 821.0 MHz		-	1.2	2.5	dB
Input VSWR (Ant port)					
791.0 ... 821.0 MHz		-	1.7	2.0	
Output VSWR (Rx Port)					
791.0 ... 821.0 MHz		-	1.6	2.0	
Common mode rejection ratio					
791.0 ... 821.0 MHz		25	30	-	dB
Absolute attenuation	α				
10.0 ... 770.0 MHz		45	55	-	dB
770.0 ... 782.0 MHz		10	35	-	dB
832.0 ... 833.5 MHz		35	60	-	dB
833.5 ... 862.0 MHz		50	54	-	dB
873.0 ... 903.0 MHz		40	54	-	dB
1623.0 ... 1683.0 MHz		45	62	-	dB
2400.0 ... 2545.0 MHz		45	53	-	dB
2545.0 ... 4000.0 MHz		45	55	-	dB
4000.0 ... 6000.0 MHz		30	34	-	dB
Absolute mean attenuation	α_{mean}				
782.0 ... 790.0 MHz		4	8	-	dB
782.0 ... 790.0 MHz		6[3]	8	-	dB

[1] Values in columns min., typ. and max. indicate the development status of the current version.
[2] At +25 ˚C
[3] At +25 ˚C

Datasheet SMD

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 || 11nH
RX teminating impedance: Z_{Rx} = 100 Ω (balanced) || 45 nH

		Development status[1]			
Characteristics Tx-Rx		**min.**	**typ. @ 25 ˚C**	**max.**	
Differential mode isolation	α				
791.0 ... 821.0	MHz	50	54	-	dB
832.0 ... 834.0	MHz	40	60	-	dB
834.0 ... 862.0	MHz	54	57	-	dB
1574.0 ... 1577.0	MHz	40	71	-	dB
1664.0 ... 1724.0	MHz	20	68	-	dB
2496.0 ... 2586.0	MHz	20	62	-	dB
Common mode isolation	α				
832.0 ... 862.0	MHz	60	63	-	dB

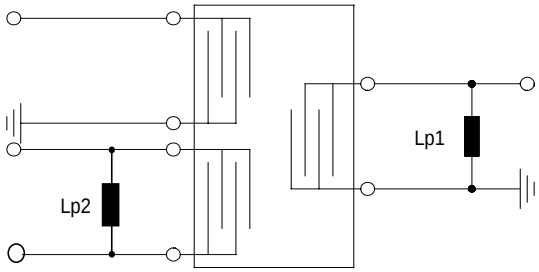
1) Values in columns min., typ. and max. indicate the development status of the current version.

Maximum Ratings

Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	5[1]	V	
ESD voltage, Tx, Ant Port	V_{ESD}	50[2]	V	MM Model
ESD voltage, Tx, Ant Port	V_{ESD}	150[3]	V	HB Model
ESD voltage	V_{ESD}	500[4]	V	CD Model
Input power at Tx Port				
832.0 ...862.0 MHz	P_{in}	29	dBm	} LTE UP 5 MHz
elsewhere	P_{in}	10	dBm	} 50 ˚C, 5000h

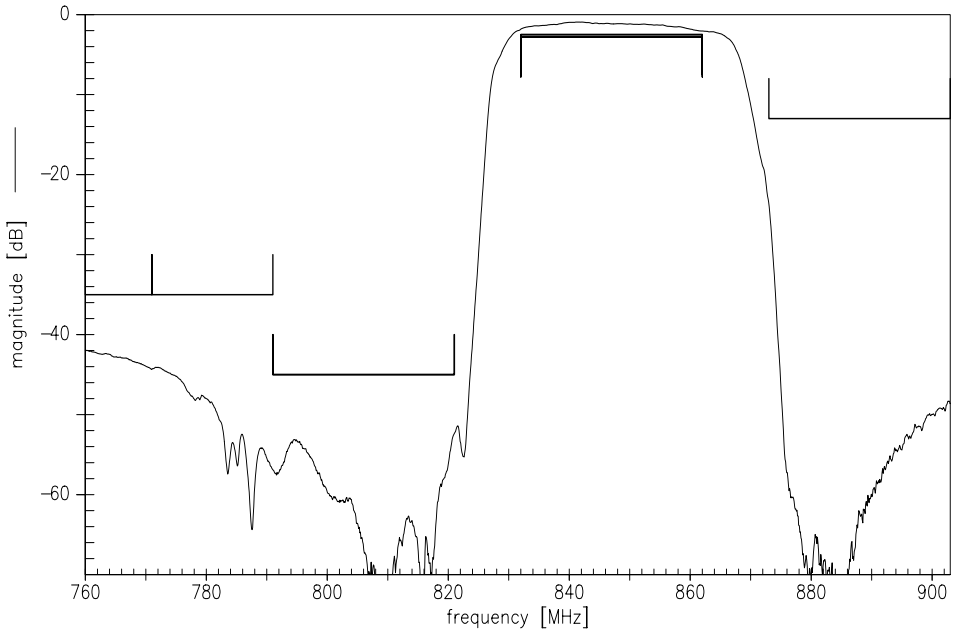
1) 168h Damp Heat Steady State acc. to IEC60068-2-67 Cy
2) Acc. to FESD22-A115B (MM-Machine Model),10 negative & 10 positive pulses.
3) Acc. to FESD22-A114F (HBM-Human Body Level),1 negative & 1 positive pulses.
4) Acc. to FESD22-C101C (CDM-Fiel Inducted Charged device Model), 3 negative & 3 positive pulses.

Matching network (element values depend on PCB layout)l

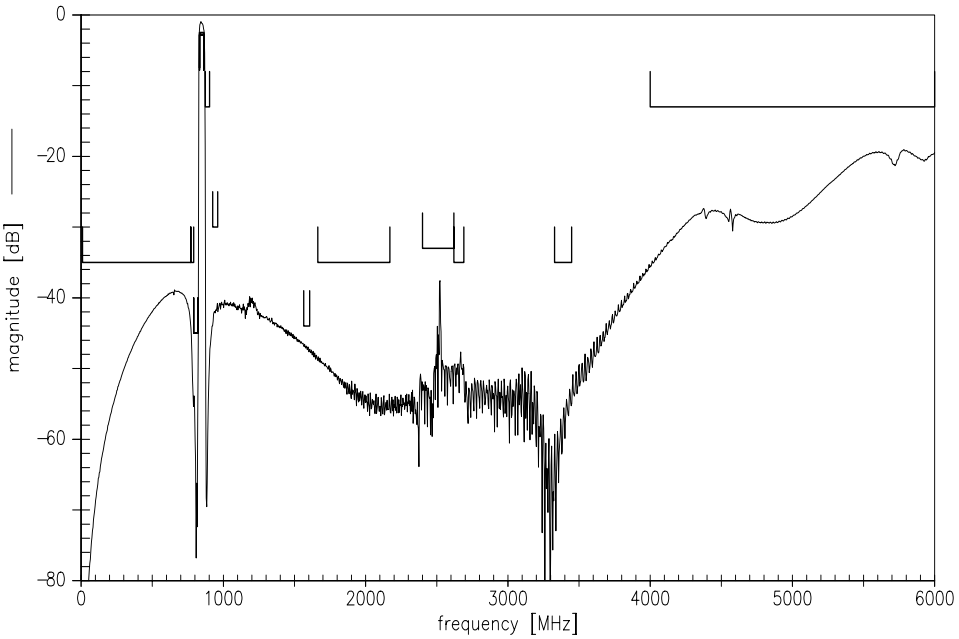


Lp1=11nH, Lp2 =45nH

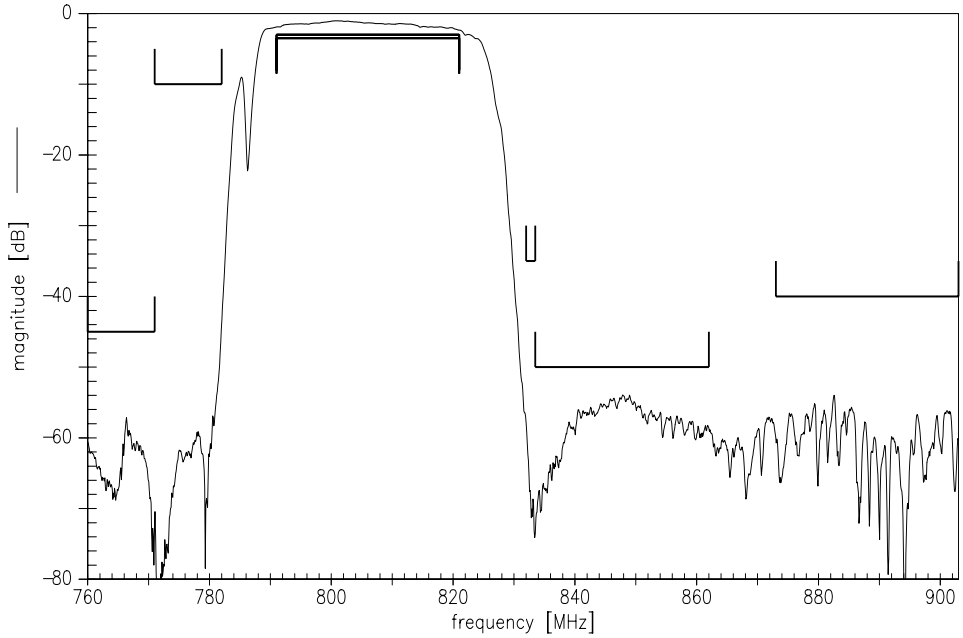
Frequency Response TX-ANT



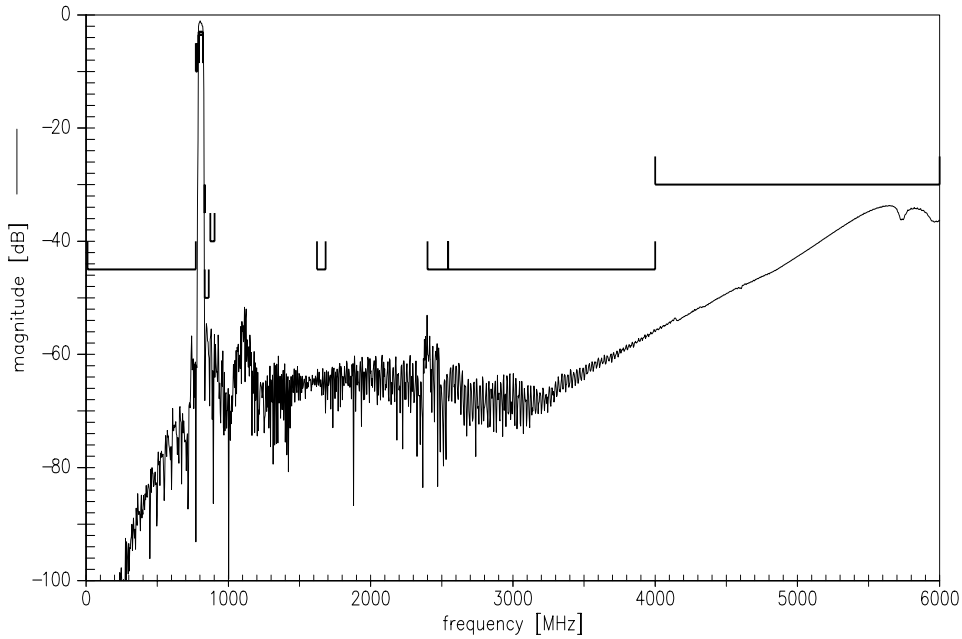
Frequency Response TX-ANT



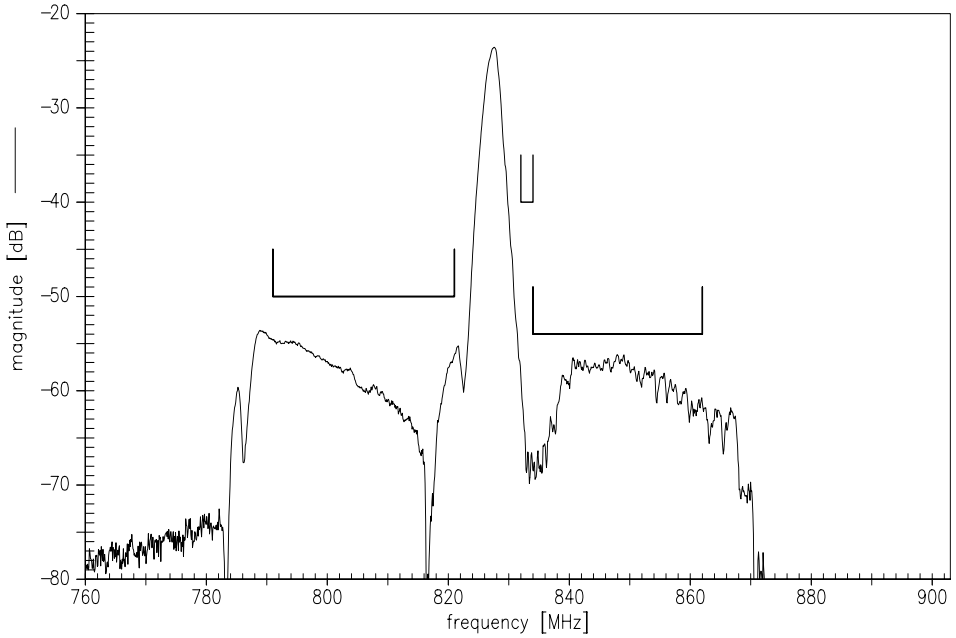
Frequency Response ANT-RX



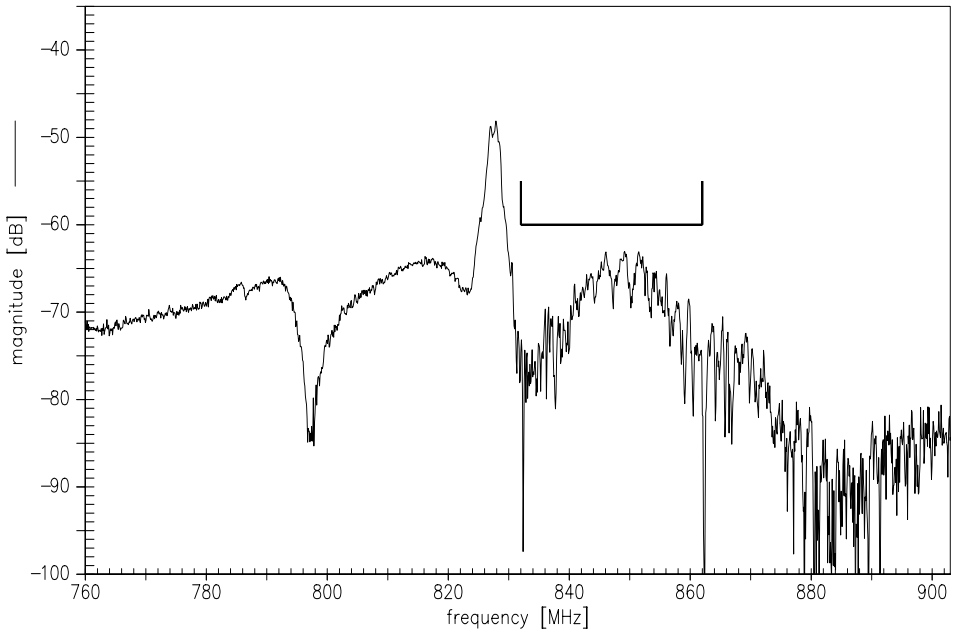
Frequency Response ANT-RX



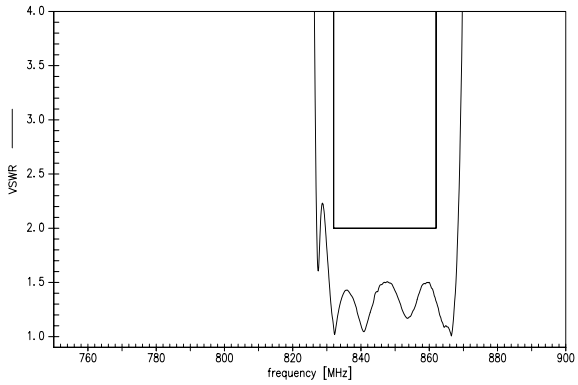
Frequency Response TX-RX (ISOLATION)

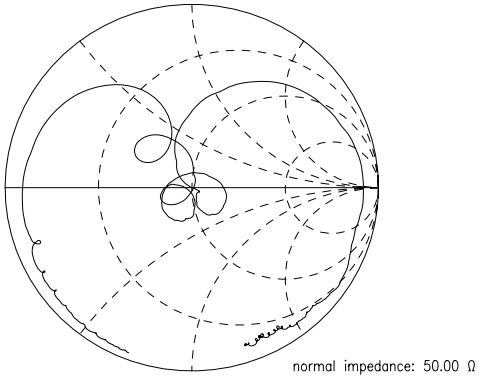


Frequency Response Common Mode Isolation

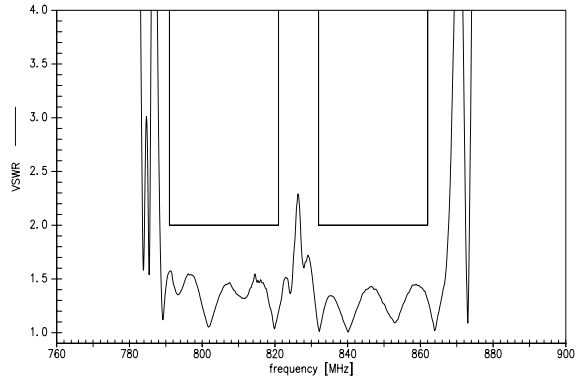


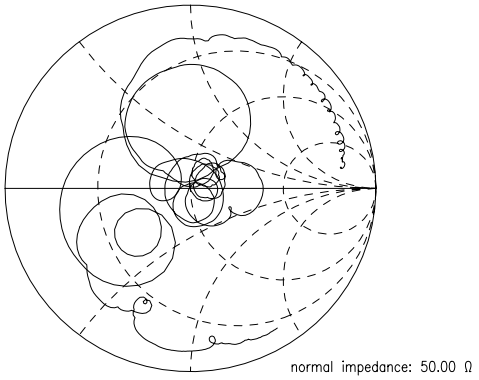
S11 VSWR (TX)



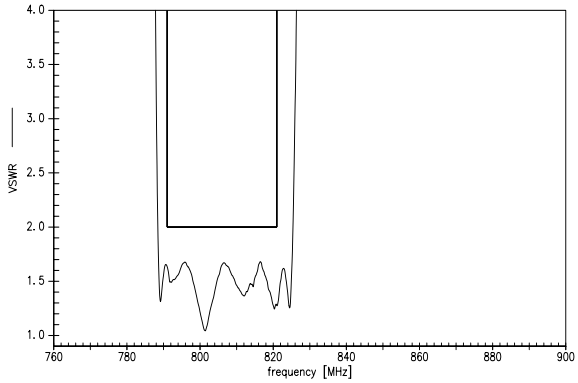


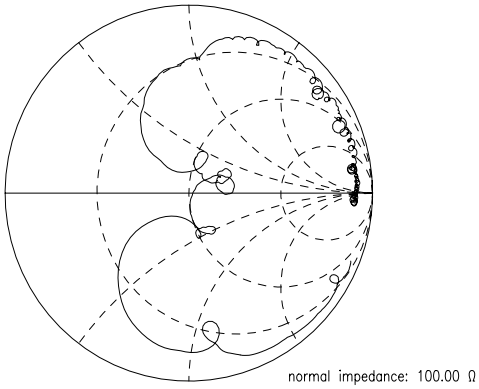
S22 VSWR (ANT)





S33 VSWR (RX)





References

Type	B8621
Ordering code	B39851B8621P810
Marking and package	C61074-V8248-Z000
Packaging	C61157-A8-A99
Date codes	L_1126
S-parameters	B8621_NB_UN.s4p, B8621_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 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

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