



SAW Components

SAW Duplexer

LTE Band 13

Series/type:	B7678 B39781B7678A710
Date:	January 24, 2011
Version:	2.1



SAW Components

B7678

SAW Duplexer

782.0 / 752.0 MHz

DataSheet



Characteristics

Temperature range for specification: T = -30 °C to +85 °C
 Antenna terminating impedance: Z_{ANT} = 50 Ω || 18 nH
 RX terminating impedance: Z_{RX} = 50 Ω
 TX terminating impedance: Z_{TX} = 50 Ω

Characterisitcs TX - ANT					min.	typ. @ 25 °C	max.	
Center frequency	f _C					782.0		MHz
Maximum insertion attenuation								
777.0 ... 787.0 MHz	α			—	1.9	2.4		dB
Amplitude ripple (p-p)								
777.0 ... 787.0 MHz	Δα			—	0.5	1.3		dB
Input VSWR (TX port)								
777.0 ... 787.0 MHz				—	1.5	2.0		
Output VSWR (ANT port)								
777.0 ... 787.0 MHz				—	1.5	2.0		
Attenuation								
				α				
10.0 ... 150.0 MHz				40	60	—		dB
150.0 ... 350.0 MHz				35	47	—		dB
350.0 ... 650.0 MHz				30	42	—		dB
728.0 ... 746.0 MHz				35	50	—		dB
746.0 ... 756.0 MHz				47	57	—		dB
758.0 ... 768.0 MHz				30	32	—		dB
808.0 ... 818.0 MHz				30	43	—		dB
869.0 ... 894.0 MHz				35	45	—		dB
1452.0 ... 1492.0 MHz				35	49	—		dB
1554.0 ... 1574.0 MHz				35	50	—		dB
1574.0 ... 1577.0 MHz				45	51	—		dB
1670.0 ... 1675.0 MHz				35	51	—		dB
1930.0 ... 1990.0 MHz				35	50	—		dB
2110.0 ... 2170.0 MHz				35	48	—		dB
2300.0 ... 2361.0 MHz				30	40	—		dB
2361.0 ... 2690.0 MHz				30	41	—		dB
3300.0 ... 3800.0 MHz				20	24	—		dB
5150.0 ... 5850.0 MHz				5	12	—		dB



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 Antenna terminating impedance: $Z_{ANT} = 50\ \Omega \parallel 18\text{ nH}$
 RX terminating impedance: $Z_{RX} = 50\ \Omega$
 TX terminating impedance: $Z_{TX} = 50\ \Omega$

Characteristics ANT - RX		min.	typ. @ 25 °C	max.	
Center frequency	f_C		751.0		MHz
Maximum insertion attenuation					
746.0 ... 756.0 MHz	α	—	2.1	2.6	dB
Amplitude ripple (p-p)					
746.0 ... 756.0 MHz	$\Delta\alpha$	—	0.5	1.2	dB
Input VSWR (ANT port)					
746.0 ... 756.0 MHz		—	1.6	2.0	
Output VSWR (RX port)					
746.0 ... 756.0 MHz		—	1.6	2.0	
Attenuation	α				
10.0 ... 150.0 MHz		40	60	—	dB
150.0 ... 350.0 MHz		35	47	—	dB
350.0 ... 650.0 MHz		30	39	—	dB
698.0 ... 716.0 MHz		35	40	—	dB
716.0 ... 722.0 MHz		35	43	—	dB
777.0 ... 787.0 MHz		51	59	—	dB
788.0 ... 818.0 MHz		35	42	—	dB
824.0 ... 849.0 MHz		30	40	—	dB
1492.0 ... 1543.0 MHz		32	38	—	dB
1554.0 ... 1574.0 MHz		35	38	—	dB
1574.0 ... 1577.0 MHz		35	38	—	dB
1710.0 ... 1770.0 MHz		35	39	—	dB
1920.0 ... 1980.0 MHz		35	39	—	dB
2200.0 ... 2690.0 MHz		35	38	—	dB
2690.0 ... 3800.0 MHz		25	30	—	dB
5150.0 ... 5850.0 MHz		5	11	—	dB



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Temperature range for specification:	T = -30 °C to +85 °C
Antenna terminating impedance:	Z _{ANT} = 50 Ω 18 nH
RX terminating impedance:	Z _{RX} = 50 Ω
TX terminating impedance:	Z _{TX} = 50 Ω

Characteristics TX - RX		min.	typ. @ 25 °C	max.	
Isolation	746.0 ... 756.0 MHz	48	59	—	dB
	777.0 ... 787.0 MHz	52	59	—	

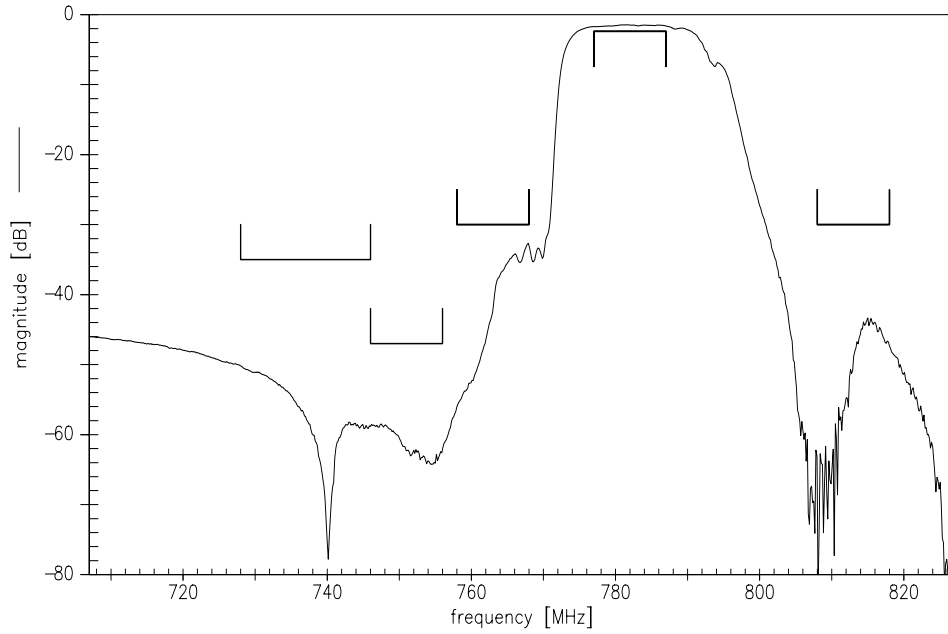
Maximum ratings

Storage temperature range	T _{stg}	-40/+85	°C	machine model, 1 pulse
DC voltage	V _{DC}	5	V	
ESD voltage	V _{ESD}	100 ¹⁾	V	
Input power at Tx Port				} LTE uplink signal 55 °C, 50000 H
779.5 ... 784.5 MHz	P _{IN}	28	dBm	
Elsewhere	P _{IN}	10		

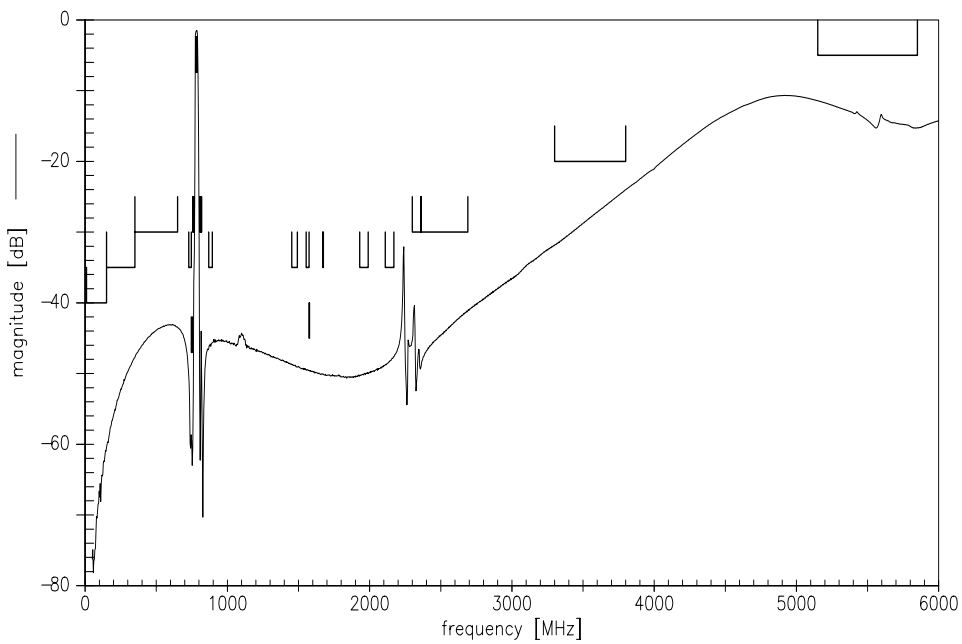
¹⁾ acc. to JESD22-A115A (machine model), 1 negative & 1 positive pulse.



Frequency Response TX-ANT

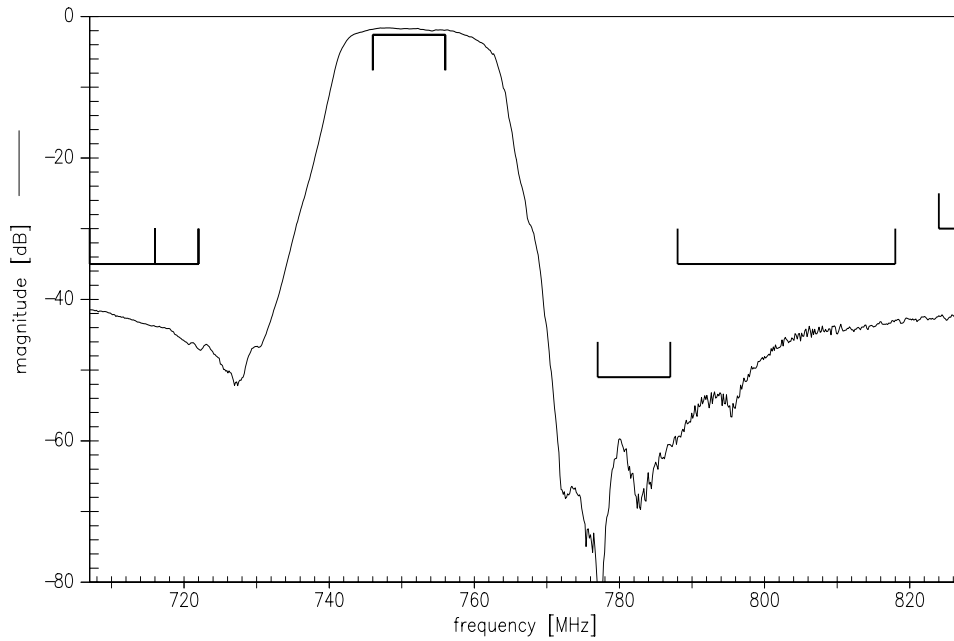


Frequency Response TX-ANT

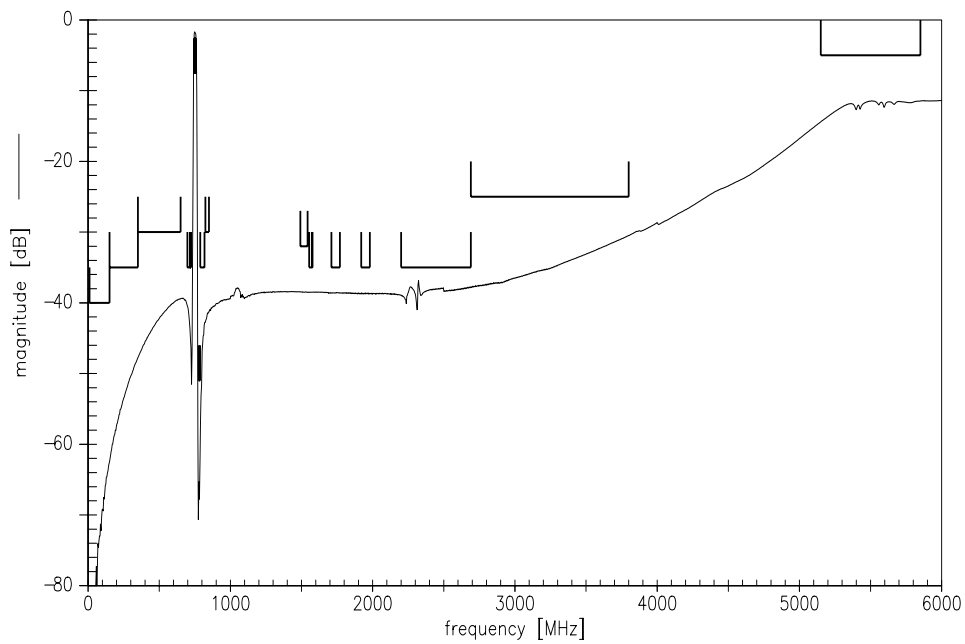




Frequency Response ANT-RX

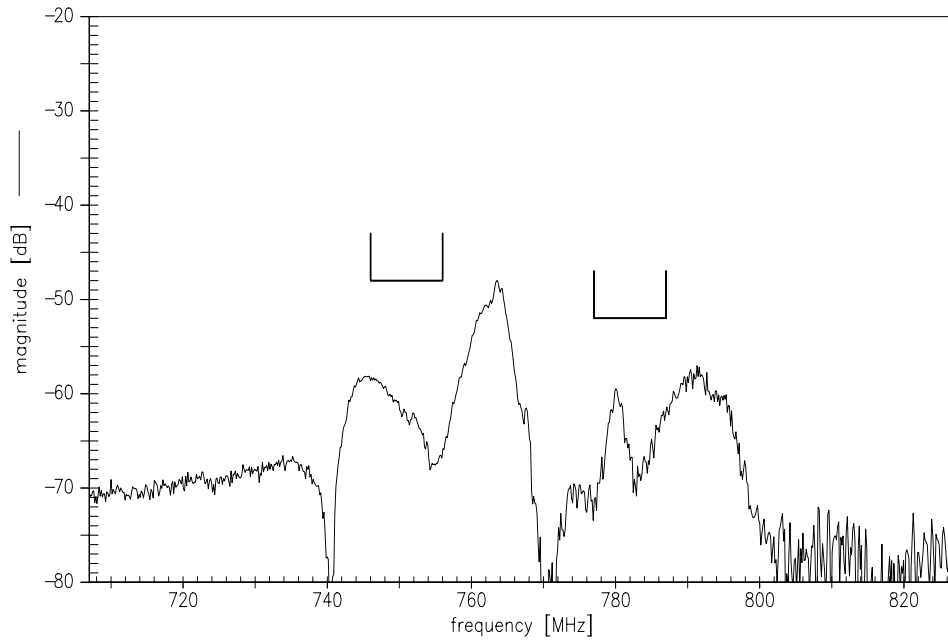


Frequency Response ANT-RX

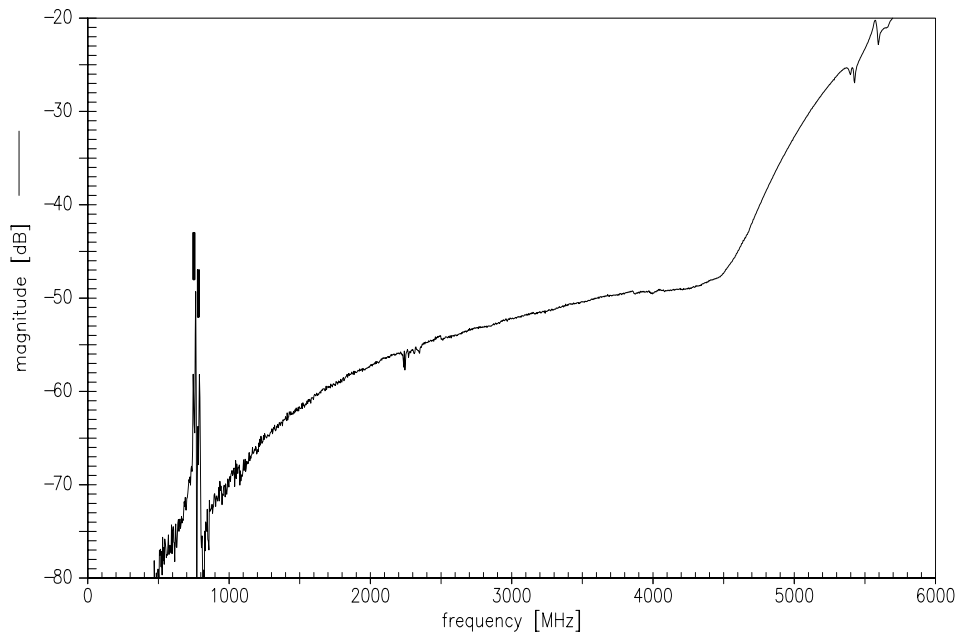




ISOLATION TX-RX



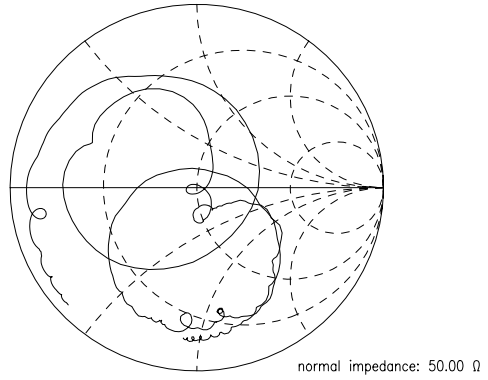
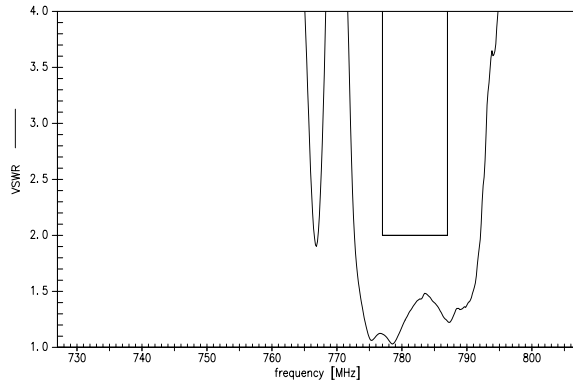
ISOLATION TX-RX



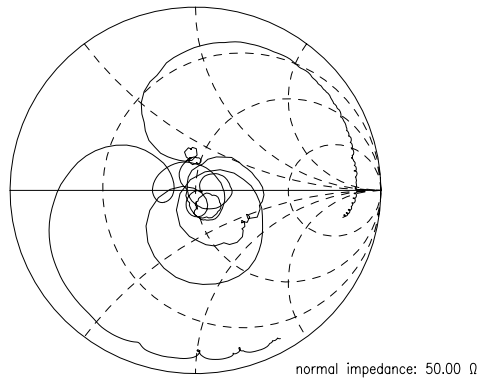
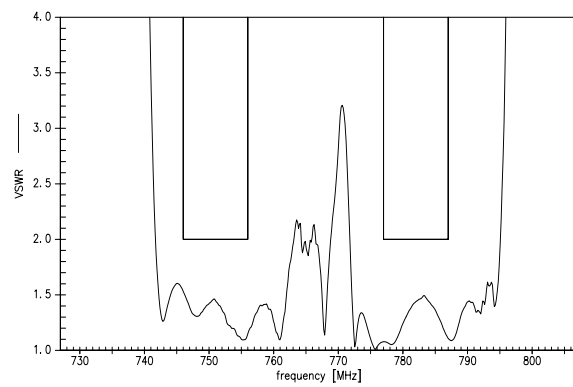
Please read *cautions and warnings and important notes* at the end of this document.



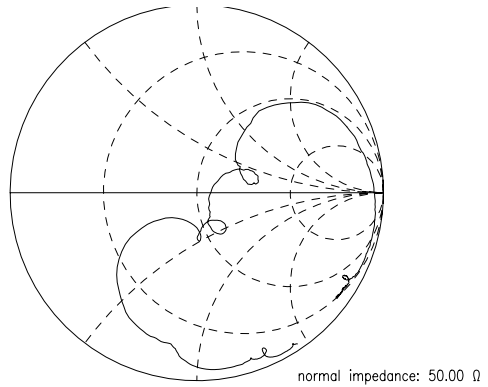
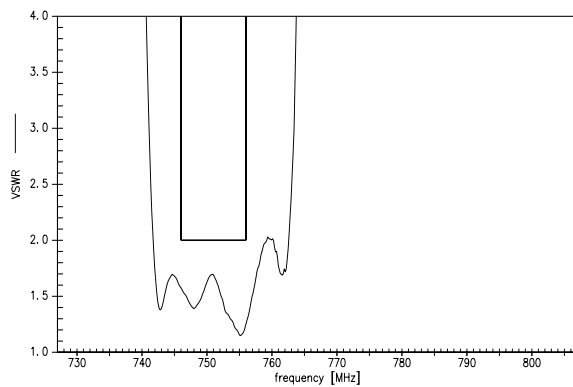
S11 VSWR (TX)



S22 VSWR (ANT)



S33 VSWR (RX)



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**References**

Type	B7678
Ordering code	B39781B7678A710
Marking and package	C61157-A3-A61
Packaging	F61074-V8153-Z000
Date codes	L_1126
S-parameters	B7678_NB.s3p B7678_WB.s3p See file header for port/pin assignment table
Soldering profile	S_6001
RoHS compatible	defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment."
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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Published by EPCOS AG
Surface Acoustic Wave Components Division
P.O. Box 80 17 09, 81617 Munich, GERMANY

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