



SAW Components

SAW Duplexer for W-CDMA Band IV (AWS)

Series/type:	B7645
Ordering code:	B39212B7645P110
Date:	August 29, 2008
Version:	2.1

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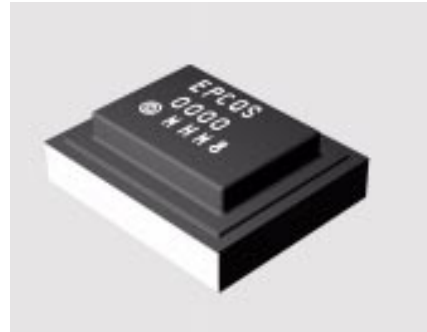


Data sheet



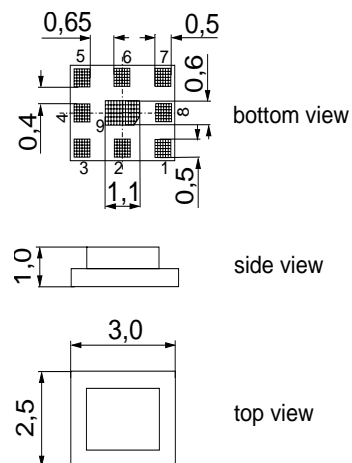
Application

- Low-loss SAW duplexer for mobile telephone W-CDMA Band IV (AWS) systems
- Low insertion attenuation
- Low amplitude ripple
- Usable passband 45 MHz



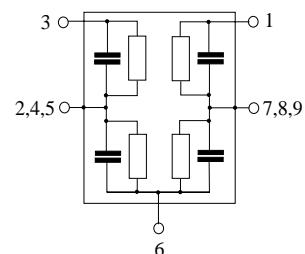
Features

- Package size 3.0 x 2.5 x 1.0 mm³
- RoHS compatible
- Approx. weight 0.035 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- Fully matched by integrated matching network



Pin configuration

- 3 TX Input
- 1 RX Output
- 6 Antenna
- 2, 4, 5 To be grounded
- 7, 8, 9 To be grounded



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



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Characteristics

Temperature range for specification: T = -15 °C to +80 °C
 Antenna terminating impedance: Z_{ANT} = 50 Ω
 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		1732.5		MHz
Maximum insertion attenuation α _{max} 1710.0 ... 1755.0 MHz		1.6	2.0 ¹⁾	dB
Amplitude ripple (p-p) Δα 1710.0 ... 1755.0 MHz		0.4	1.0	dB
Amplitude ripple (p-p) per 5 MHz-channel Δα _{ch} 1710.0 ... 1755.0 MHz		0.35	0.5	dB
Group Delay Variation (p-p) per 5 MHz-channel Δτ 1710.0 ... 1755.0 MHz		4	20	ns
Input VSWR (TX port) 1710.0 ... 1755.0 MHz		1.75	2.2	
Output VSWR (ANT port) 1710.0 ... 1755.0 MHz		1.5	1.9	
Attenuation α				
0.3 ... 1000.0 MHz	20	37		dB
1310.0 ... 1355.0 MHz	30	33		dB
1550.0 ... 1600.0 MHz	35	37		dB
2110.0 ... 2155.0 MHz	45	50		dB
2400.0 ... 2500.0 MHz	25	37		dB
3420.0 ... 3510.0 MHz	22	26		dB
5130.0 ... 5265.0 MHz	10	16		dB
5265.0 ... 6000.0 MHz	-	7		dB

1) 3.0 dB for T = -25 ... -15 °C and T = +80 ... +85 °C.



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 Antenna terminating impedance: Z_{ANT} = 50 Ω
 RX terminating impedance: Z_{RX} = 50 Ω
 TX terminating impedance: Z_{TX} = 50 Ω

Characteristics ANT - RX	min.	typ. @ 25 °C	max.	
Center frequency f _C		2132.5		MHz
Maximum insertion attenuation α _{max}				
2110.0 ... 2155.0 MHz		2.4	2.9 ¹⁾	dB
Amplitude ripple (p-p) Δα				
2110.0 ... 2155.0 MHz		0.4	1.0	dB
Amplitude ripple (p-p) per 5 MHz-channel Δα _{ch}				
2110.0 ... 2155.0 MHz		0.35	0.5	dB
Group Delay Variation (p-p) per 5 MHz-channel Δτ				
2110.0 ... 2155.0 MHz		3	20	ns
Input VSWR (ANT port)				
2110.0 ... 2155.0 MHz		1.7	2.2	
Output VSWR (RX port)				
2110.0 ... 2155.0 MHz		2.0	2.5	
IMD Product Level Limits				
at f _{tx} = 1732.5 MHz f _{rx} = 2132.5 MHz				
Blocker 1	400.0 MHz	-127	-110	dBm
Blocker 2	1332.5 MHz	-110	-105	dBm
Blocker 3	3865.0 MHz	-118	-110	dBm
Attenuation α				
0.3 ... 1310.0 MHz	30	44		dB
1310.0 ... 1355.0 MHz	38	44		dB
1355.0 ... 1710.0 MHz	10	44		dB
1710.0 ... 1755.0 MHz	50	55		dB
1755.0 ... 1910.0 MHz	10	40		dB
1910.0 ... 1955.0 MHz	27	36		dB
2240.0 ... 2400.0 MHz	10	44		dB
2400.0 ... 2500.0 MHz	30	41		dB
2500.0 ... 3820.0 MHz	10	25		dB
3820.0 ... 3910.0 MHz	19	23		dB
5150.0 ... 5350.0 MHz	20	25		dB
5530.0 ... 5665.0 MHz	25	33		dB
5665.0 ... 6000.0 MHz	25	34		dB

1) 3.0 dB for T = -25 ... -15 °C and T = +80 ... +85 °C.



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SAW Duplexer	1732.5 / 2132.5 MHz

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Characteristics

Temperature range for specification: T = -15 °C to +80 °C
 Antenna terminating impedance: Z_{ANT} = 50 Ω
 RX terminating impedance: Z_{RX} = 50 Ω
 TX terminating impedance: Z_{TX} = 50 Ω

Characterisitcs TX - RX		min.	typ. @ 25 °C	max.	
Isolation	1710.0 ... 1755.0 MHz ^α	52	56		dB
	2110.0 ... 2155.0 MHz	45	49		dB

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SAW Components **B7645**

SAW Duplexer **1732.5 / 2132.5 MHz**

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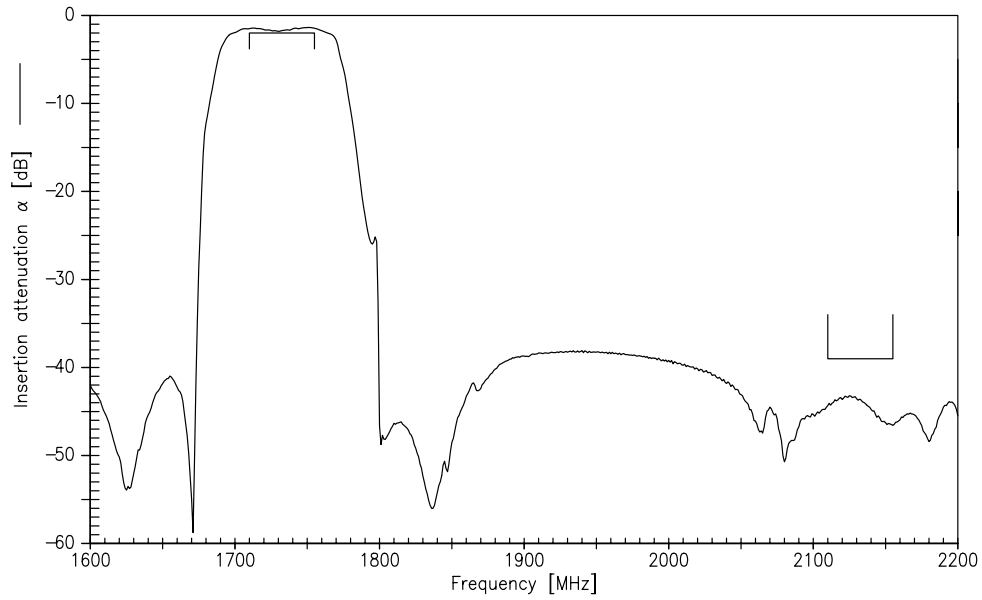
Maximum ratings

Operable temperature range	T	-30/+85	°C	machine model, 10 pulses source and load impedance 50 Ω } continuous wave T = 55°C, 50.000 h
Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	5	V	
ESD voltage	V _{ESD}	100 ¹⁾	V	
Input power at	P _{IN}			
1710.0 ... 1755.0 MHz		30	dBm	
2110.0 ... 2155.0 MHz		22	dBm	
elsewhere		10	dBm	

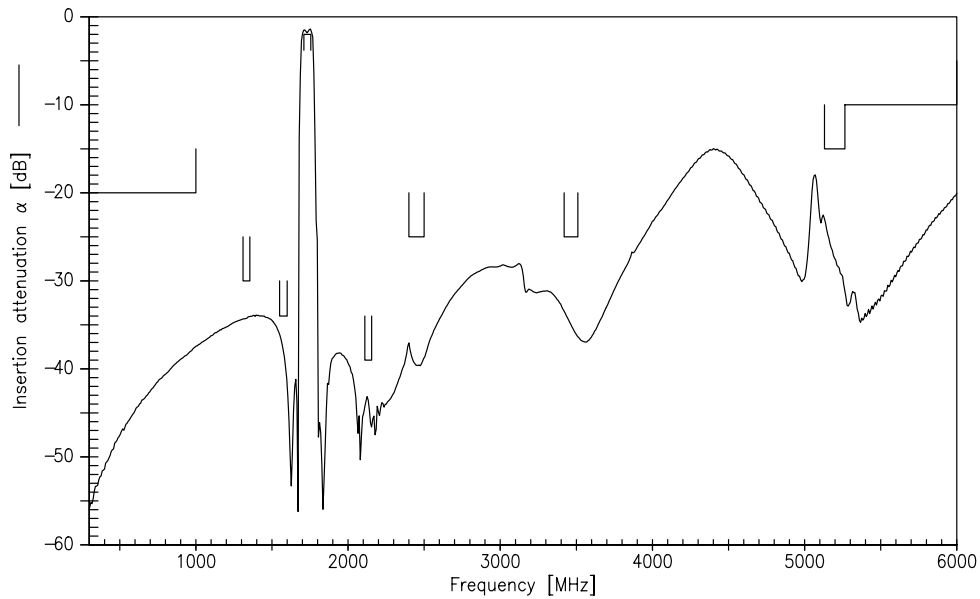
¹⁾ acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



Frequency Response TX-ANT



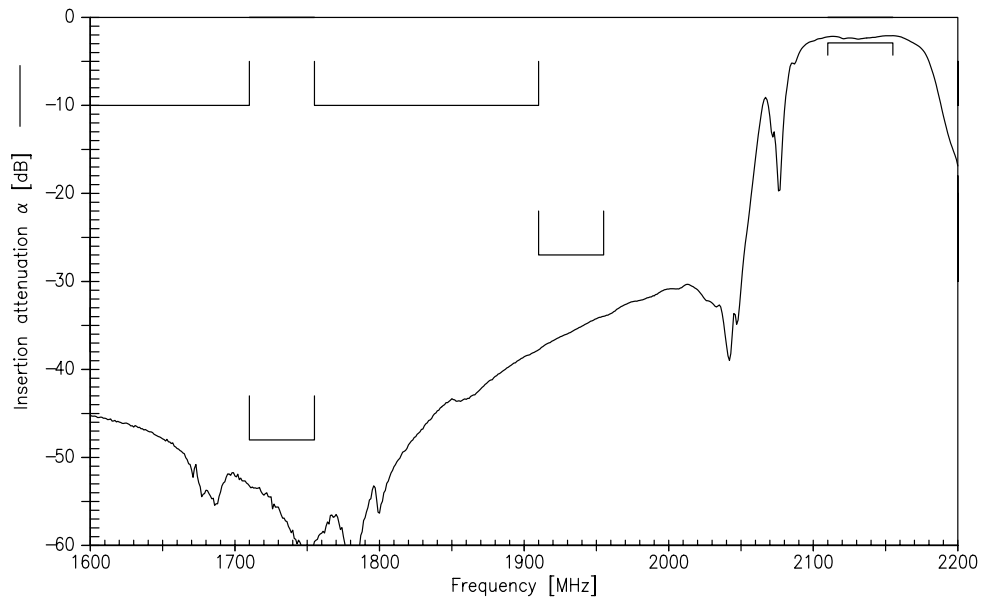
Frequency Response TX-ANT (wideband)



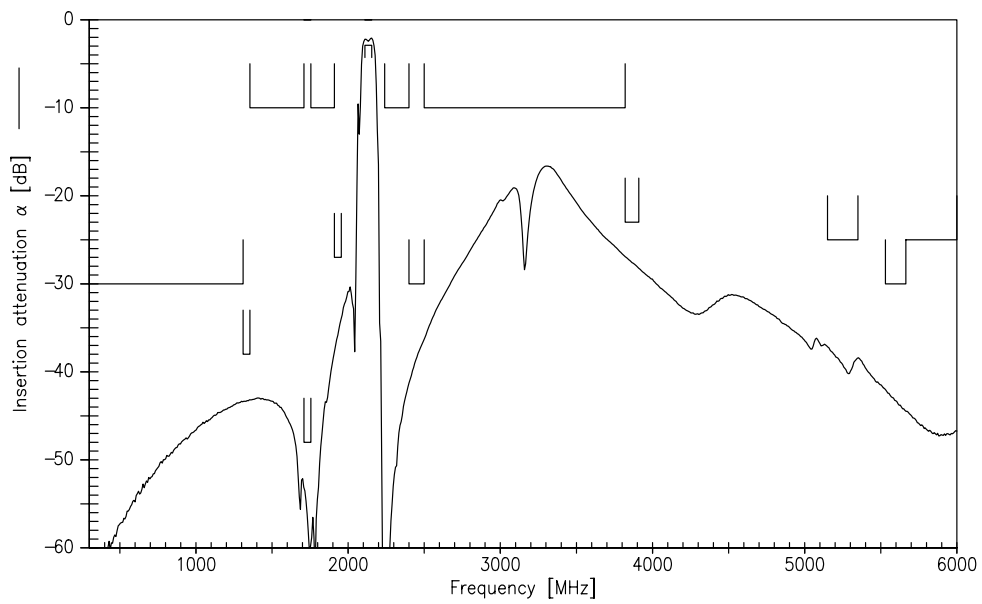
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Frequency Response RX-ANT



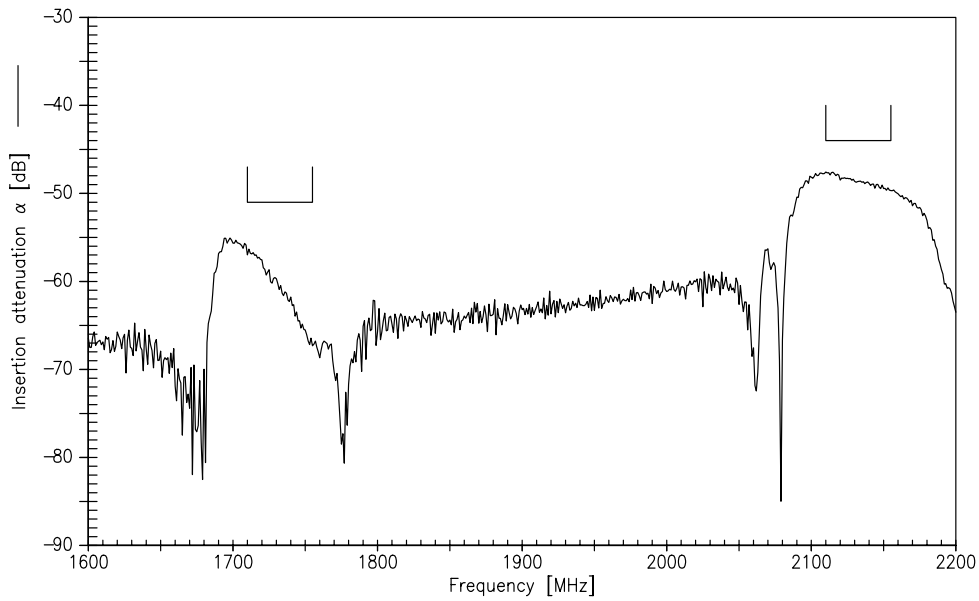
Frequency Response RX-ANT (wideband)



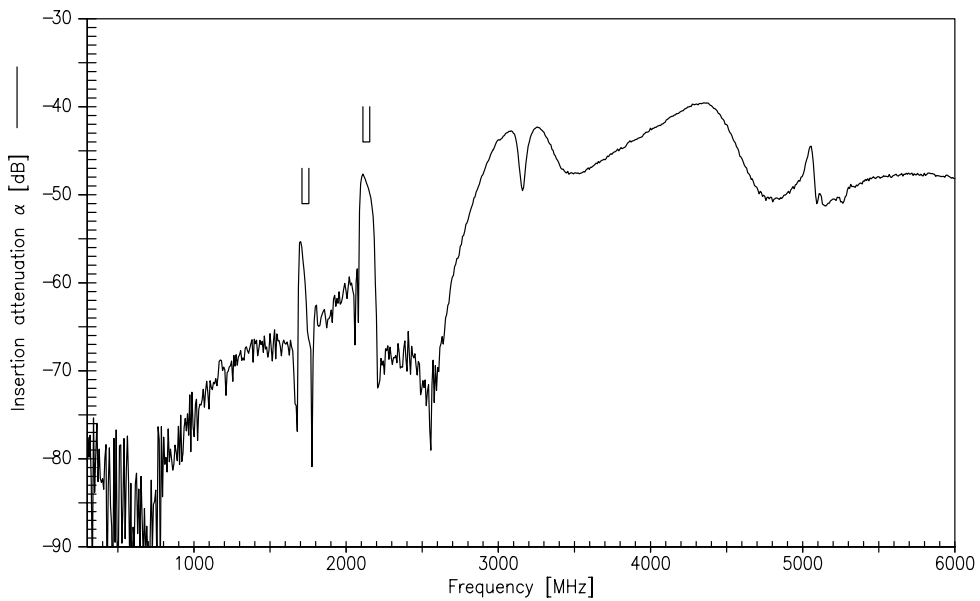
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Frequency Response TX-RX



Frequency Response TX-RX (wideband)



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Data sheet

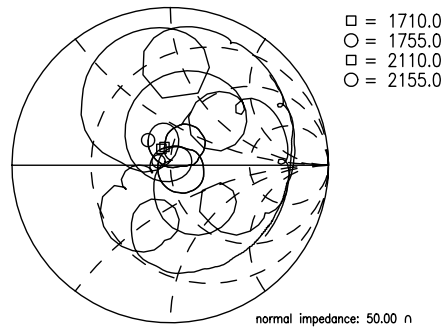
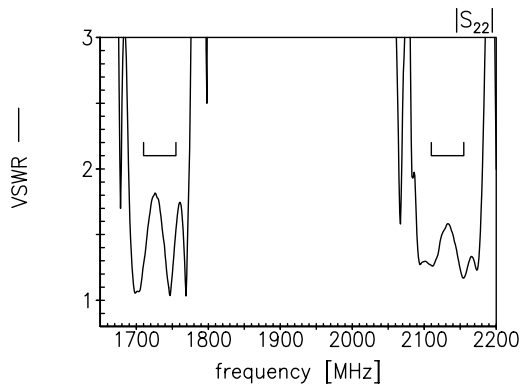
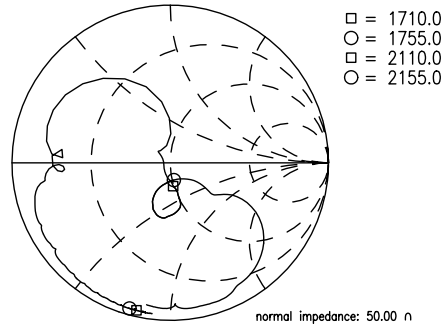
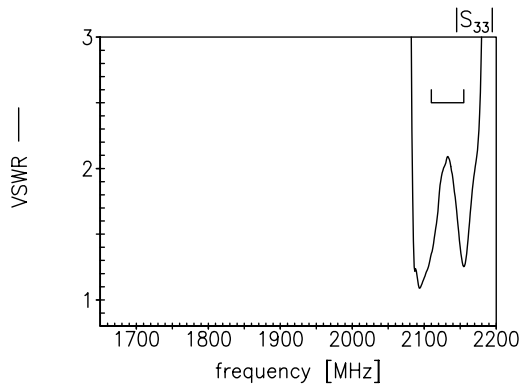
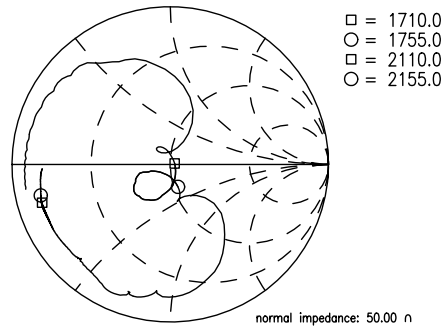
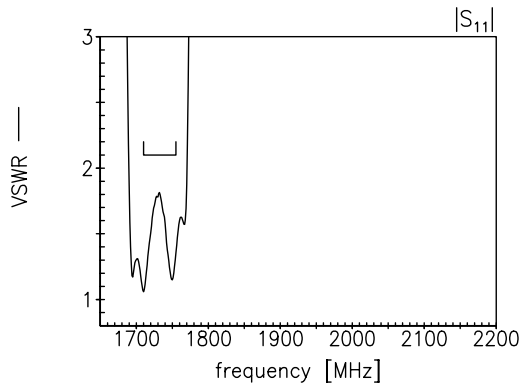


Return Loss

S₁₁ TX-port

S₂₂ ANT-port

S₃₃ RX-port



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Data sheet

**References**

Type	B7645
Ordering code	B39212B7645P110
Marking and package	C61157-A3-A24
Packaging	F61074-V8211-Z000
Date codes	L_1126
S-parameters	B7645_NB.s3p B7645_WB.s3p
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."

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11 August 29, 2008



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