



SAW Components

SAW Duplexer

Cellular / WCDMA band V

Series/type:	B7670
Ordering code:	B39881B7670A710
Date:	February 05, 2009
Version:	2.0

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B7670

SAW Duplexer

836.50 / 881.50 MHz

Data Sheet



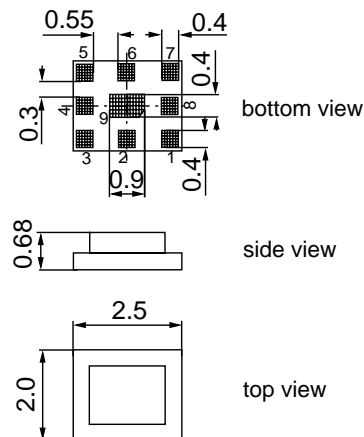
Application

- Low-loss SAW duplexer for mobile telephone Cellular / WCDMA band V systems
- Low insertion attenuation
- Low amplitude ripple



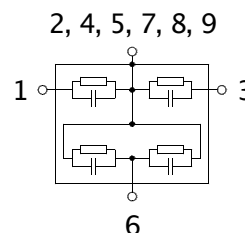
Features

- Package size 2.5 x 2.0 x 0.68 mm³
- RoHS compatible
- Approx. weight 0.013 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**



Pin configuration

- 3 TX Input
- 1 RX Output
- 6 Antenna
- 2, 4, 5, 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: $T = -30\text{ °C to }+85\text{ °C}$
 Antenna terminating impedance: $Z_{ANT} = 50\ \Omega \parallel 8.2\text{ nH}$
 RX terminating impedance: $Z_{RX} = 50\ \Omega$
 TX terminating impedance: $Z_{TX} = 50\ \Omega$

Characterisitcs TX - ANT	min.	typ. @ 25 °C	max.	
Center frequency f_C		836.5		MHz
Maximum insertion attenuation α_{max} 824.0 ... 849.0 MHz		1.8	2.3	dB
Amplitude ripple (p-p) $\Delta\alpha$ 824.0 ... 849.0 MHz		0.6	1.0	dB
Input VSWR (TX port) 824.0 ... 849.0 MHz		1.9	2.1	
Output VSWR (ANT port) 824.0 ... 849.0 MHz		1.6	2.0	

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

Characterisitcs TX - ANT	min.	typ. @ 25 °C	max.	
Attenuation				
0.3 ... 779.0 MHz	25	33		dB
779.0 ... 804.0 MHz	27	29		dB
869.0 ... 894.0 MHz	43	46		dB
1573.0 ... 1578.0 MHz	40	43		dB
1648.0 ... 1698.0 MHz	36	39		dB
2472.0 ... 2547.0 MHz	23	26		dB
3296.0 ... 3396.0 MHz	10	18		dB

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 RX terminating impedance: $Z_{RX} = 50\ \Omega$
 TX terminating impedance: $Z_{TX} = 50\ \Omega$

Characterisitcs ANT - RX	min.	typ. @ 25 °C	max.	
Center frequency f_C		881.5		MHz
Maximum insertion attenuation α_{max} 869.0 ... 894.0 MHz		2.4	3.0	dB
Amplitude ripple (p-p) $\Delta\alpha$ 869.0 ... 894.0 MHz		1.0	1.5	dB
Input VSWR (ANT port) 869.0 ... 894.0 MHz		1.6	2.0	
Output VSWR (RX port) 869.0 ... 894.0 MHz		1.7	2.0	

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Characteristics

Temperature range for specification: T = -30 °C to +85 °C
 Antenna terminating impedance: Z_{ANT} = 50 Ω || 8.2 nH
 RX terminating impedance: Z_{RX} = 50 Ω
 TX terminating impedance: Z_{TX} = 50 Ω

Characterisitcs ANT - RX				min.	typ. @ 25 °C	max.	
Attenuation			α				
	0.3 ... 779.0	MHz		35	47		dB
	779.0 ... 804.0	MHz		38	52		dB
	824.0 ... 849.0	MHz		51	57		dB
	1738.0 ... 1788.0	MHz		40	57		dB
	2400.0 ... 2500.0	MHz		40	56		dB
	2607.0 ... 2682.0	MHz		35	45		dB
	3476.0 ... 3576.0	MHz		30	42		dB

Characterisitcs TX - RX				min.	typ. @ 25 °C	max.	
Isolation			α				
	824.0 ... 849.0	MHz		55	59		dB
	869.0 ... 894.0	MHz		45	48		dB

Maximum ratings

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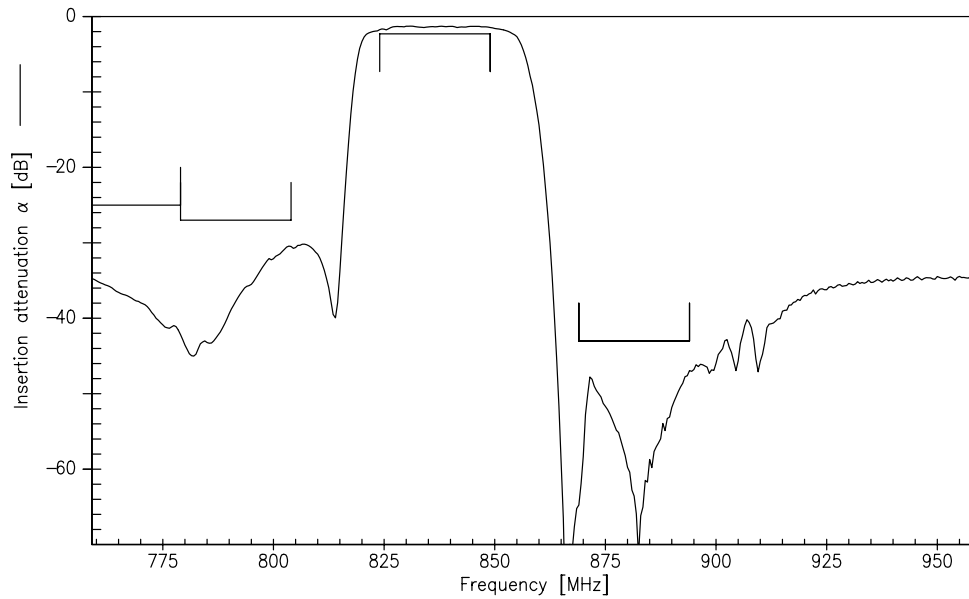
Maximum ratings

Storage temperature range	T _{stg}	-40/+85	°C	machine model, 10 pulses source and load impedance 50 Ω } continuous wave T = 55°C, 50.000 h
DC voltage	V _{DC}	5	V	
ESD voltage	V _{ESD}	100 ¹⁾	V	
Input power at	P _{IN}			
824.0 ... 849.0 MHz		30	dBm	}
elsewhere		10	dBm	

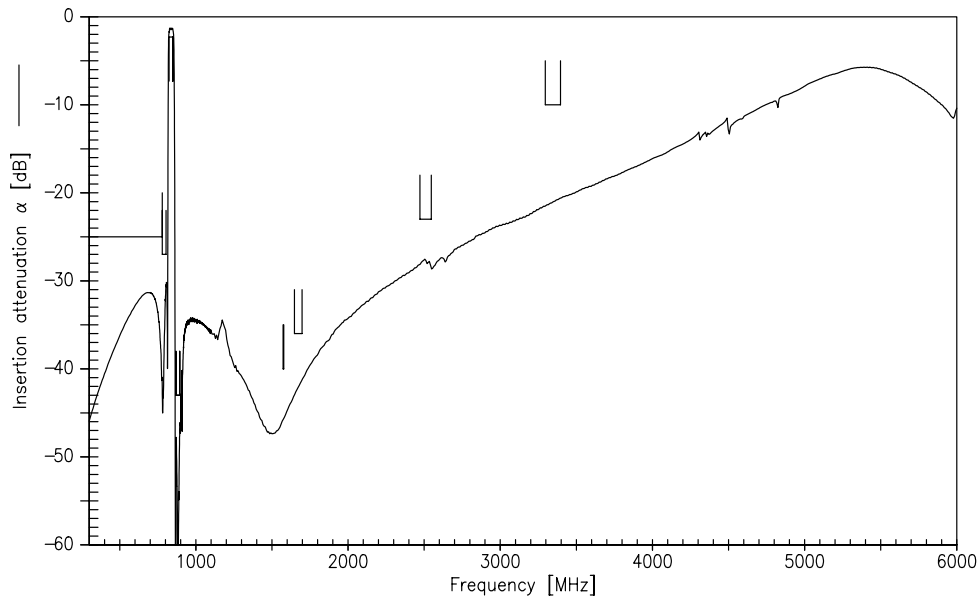
¹⁾ acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



Frequency Response TX-ANT



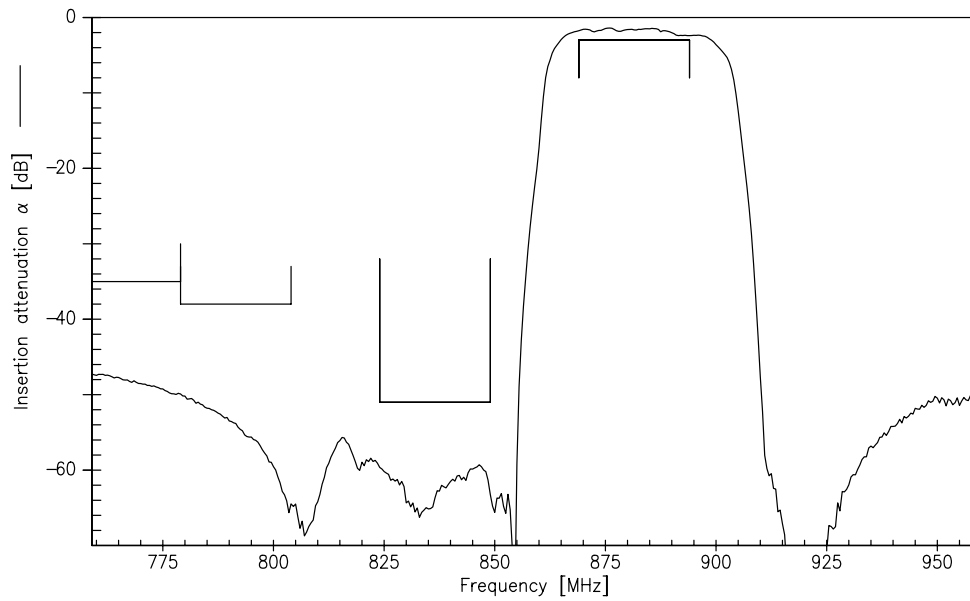
Frequency Response TX-ANT (wideband)



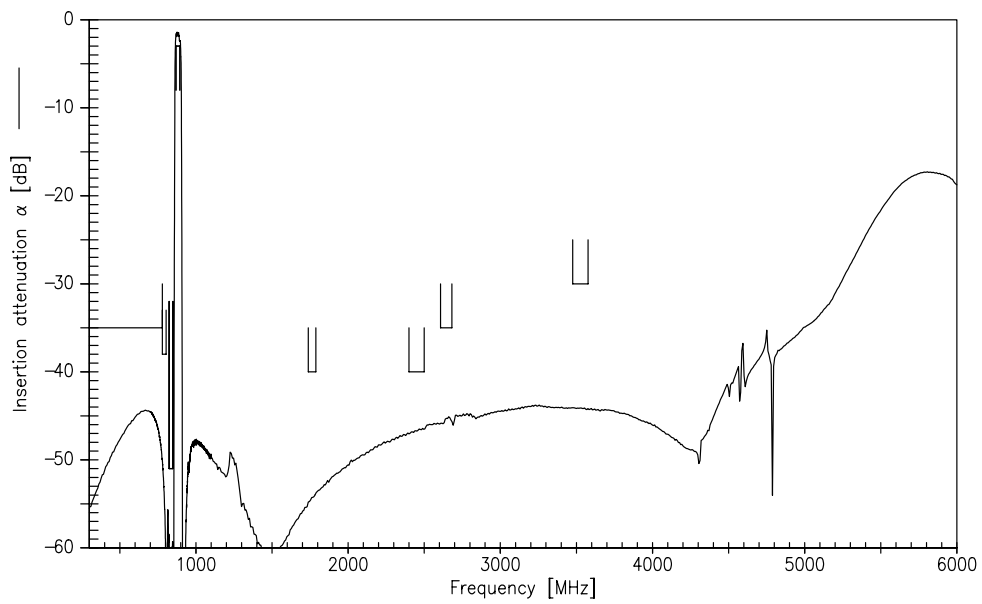
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Frequency Response RX-ANT



Frequency Response RX-ANT (wideband)



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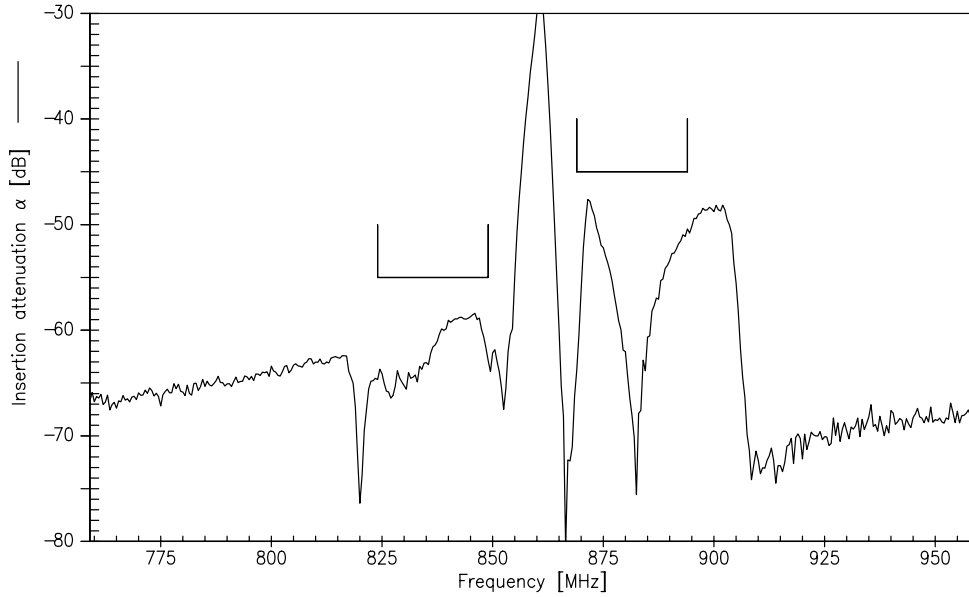
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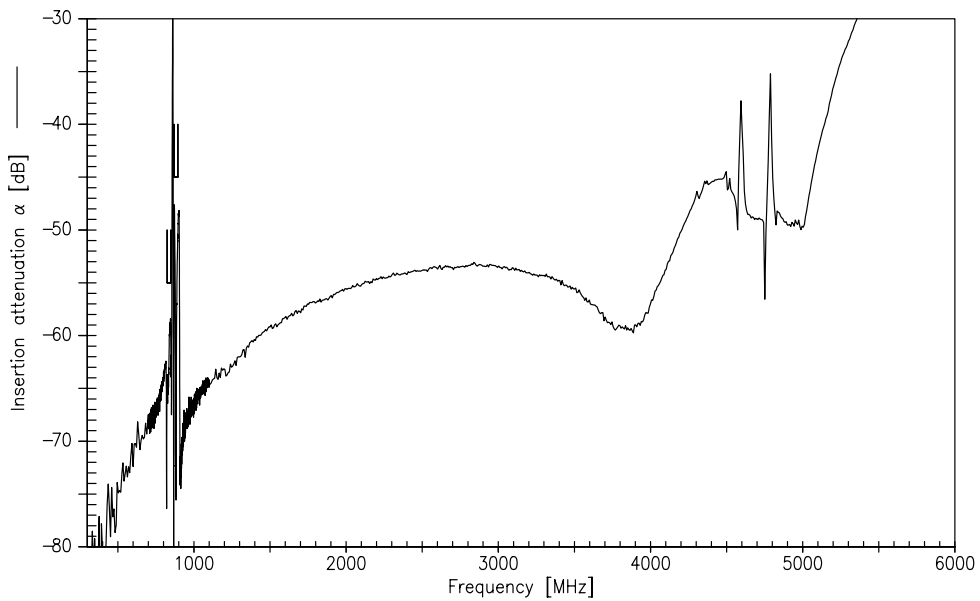
Data Sheet



Frequency Response TX-RX



Frequency Response TX-RX (wideband)



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10 February 05, 2009

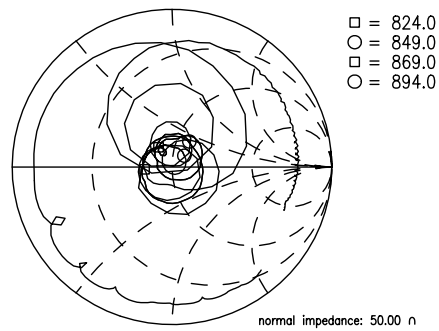
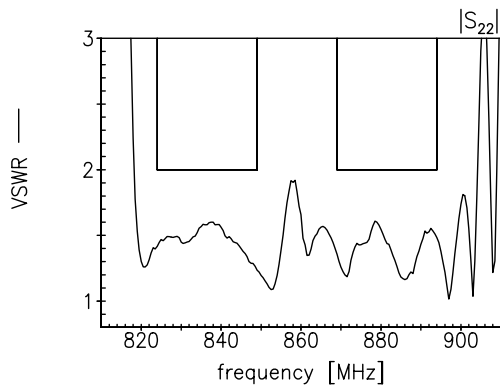
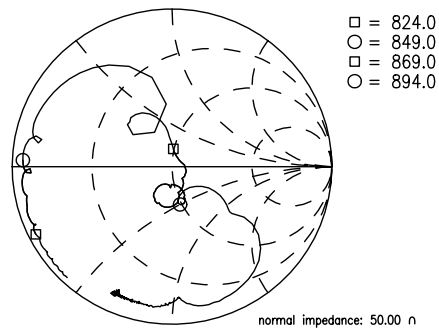
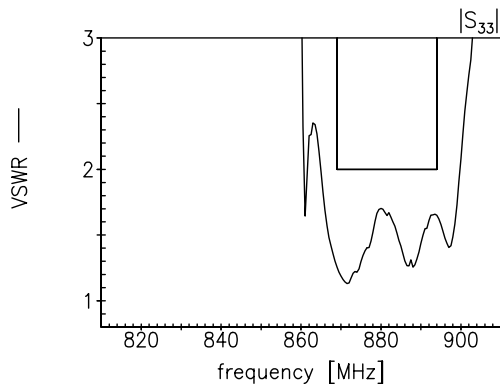
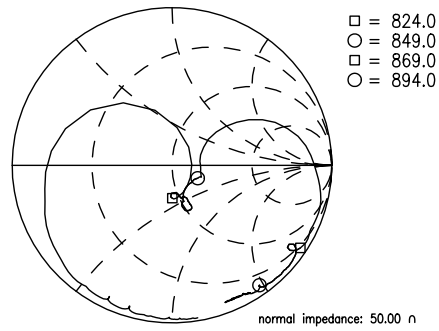
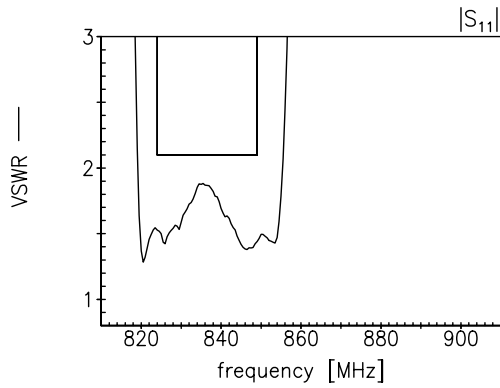


Return Loss

S₁₁ TX-port

S₂₂ ANT-port

S₃₃ RX-port



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**References**

Type	B7670
Ordering code	B39881B7670A710
Marking and package	C61157-A3-A54
Packaging	F61074-V8153-Z000
Date codes	L_1126
S-parameters	B7670_NB.s3p B7670_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."

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12 February 05, 2009



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