



# SAW Components

## SAW duplexer

LTE band XXVIII Block A

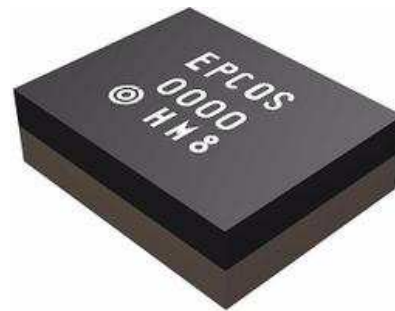
<b>Series/type:</b>	<b>B8548</b>
<b>Ordering code:</b>	<b>B39771B8548P810</b>
Date:	November 03, 2014
Version:	2.0
Customer:	

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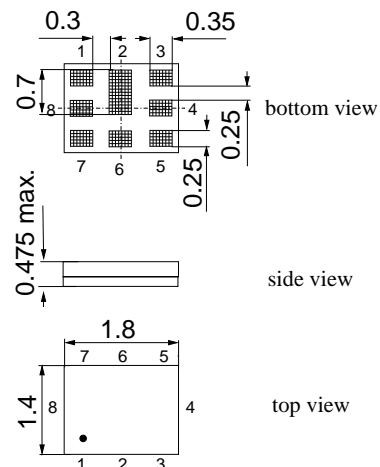
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**Application**

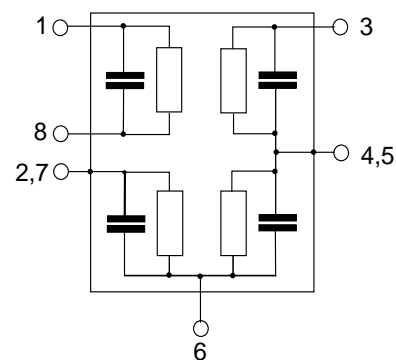
- Low-loss SAW duplexer for mobile telephone LTE Band XXVIII systems
- Low insertion attenuation
- Usable passband 30 MHz
- Duplexer for lower part of Band XXVIII (Block A)
- Companion type is B8549 for upper Band XXVIII (Block B)
- Single ended to balanced transformation in Antenna - Rx path
- Impedance transformation 50Ω to 100Ω in Antenna - Rx path


**Features**

- Package size 1.8 x 1.4mm<sup>2</sup>, package height 0.475mm max.
- RoHS compatible
- Approximate weight 0.0042 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitive Level 3**


**Pin configuration**

- 1,8 RX output
- 3 TX input
- 6 Antenna
- 2,4,5,7 Ground



**Characteristics**

Temperature range for specification:	T = -20 °C to +90 °C
ANT terminating impedance:	Z <sub>ANT</sub> = 50 Ω    6.8 nH
TX terminating impedance:	Z <sub>TX</sub> = 50 Ω + 4.0 nH (series)
RX terminating impedance:	Z <sub>RX</sub> = 100 Ω

Characteristics Tx - Ant					min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	f <sub>C</sub>				—	718.0	—	MHz
<b>Maximum insertion attenuation</b>	α							
		703.240... 732.760MHz				1.9	2.8	dB
		703.240... 732.760MHz				1.9	2.5 <sup>1)</sup>	dB
<b>Amplitude ripple</b>	α							
		703.240... 732.760MHz				1.1	2.0	dB
<b>VSWR</b>								
TX port		703.0 ... 733.0 MHz				1.7	2.0	
ANT port		703.0 ... 733.0 MHz				1.7	2.0	
<b>Attenuation</b>	α							
		10.0 ... 670.0 MHz			30	34		dB
		670.0 ... 694.0 MHz			30	36		dB
		758.240... 787.760MHz			37	42		dB
		788.0 ... 803.0 MHz			30	33		dB
		859.0 ... 894.0 MHz			30	34		dB
		1225.0 ... 1250.0 MHz			35	44		dB
		1406.0 ... 1466.0 MHz			34	38		dB
		1559.0 ... 1563.0 MHz			34	37		dB
		1565.42 ... 1573.374MHz			34	37		dB
		1573.374... 1577.466MHz			34	37		dB
		1577.466... 1585.42 MHz			34	37		dB
		1597.55 ... 1605.89 MHz			34	37		dB
		1830.0 ... 1880.0 MHz			27	35		dB
		2109.0 ... 2199.0 MHz			30	32		dB
		2400.0 ... 2484.0 MHz			28	31		dB
		2812.0 ... 2932.0 MHz			20	31		dB
		3515.0 ... 3665.0 MHz			20	30		dB
		4228.0 ... 4398.0 MHz			20	32		dB
		4921.0 ... 5850.0 MHz			15	22		dB

<sup>1)</sup> for T = 0 °C to +90 °C

**Characteristics**

Temperature range for specification:	T = -20 °C to +90 °C
ANT terminating impedance:	Z <sub>ANT</sub> = 50 Ω    6.8 nH
TX terminating impedance:	Z <sub>TX</sub> = 50 Ω + 4.0 nH (series)
RX terminating impedance:	Z <sub>RX</sub> = 100 Ω

Characteristics Rx - Ant					
		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	f <sub>C</sub>	—	773.0	—	MHz
<b>Maximum insertion attenuation</b>	α				
	758.240... 787.760MHz		2.5	3.0	dB
<b>Amplitude ripple</b>	α				
	758.240... 787.760MHz		1.0	1.6	dB
<b>VSWR</b>					
RX port	758.0 ... 788.0 MHz		1.8	2.0	
ANT port	758.0 ... 788.0 MHz		1.9	2.2	
<b>Attenuation</b>	α				
	10.0 ... 703.0 MHz	40	57		dB
	703.24 ... 732.76 MHz	45	60		dB
	1710.0 ... 1785.0 MHz	40	53		dB
	1850.0 ... 1920.0 MHz	40	53		dB
	1920.0 ... 2400.0 MHz	40	49		dB
	2400.0 ... 2500.0 MHz	45	50		dB
	2500.0 ... 2775.0 MHz	40	50		dB
	2775.0 ... 2880.0 MHz	45	49		dB
	2880.0 ... 5700.0 MHz	40	46		dB
	5700.0 ... 5850.0 MHz	35	42		dB
Characteristics TX - RX					
		min.	typ. @ 25 °C	max.	
<b>Differential Mode Isolation</b>	α				
	703.240... 732.760MHz	55	60		dB
	758.240... 787.760MHz	50	52		dB
<b>Common Mode Isolation</b>	α				
	703.240... 732.760MHz	55	59		dB

<b>SAW Components</b>	<b>B8548</b>
<b>SAW duplexer</b>	<b>718.0 / 773.0 MHz</b>
<b>Data Sheet</b>	<b>SMD</b>

### Maximum ratings

Storage temperature range	T <sub>stg</sub>	-40/+85 <sup>1)</sup>	°C	
DC voltage	V <sub>DC</sub>	5	V	
ESD voltage	V <sub>ESD</sub>	100 <sup>2)</sup>	V	machine model, 10 pulses
ESD voltage	V <sub>ESD</sub>	300 <sup>3)</sup>	V	HBM,+/- 1 pulses
ESD voltage	V <sub>ESD</sub>	600 <sup>4)</sup>	V	CDM,+/- 3 pulses
Input power at	P <sub>IN</sub>			
703.0 ... 733.0 MHz		29	dBm	} continuous wave 50 °C, 5000 h
elsewhere		10	dBm	

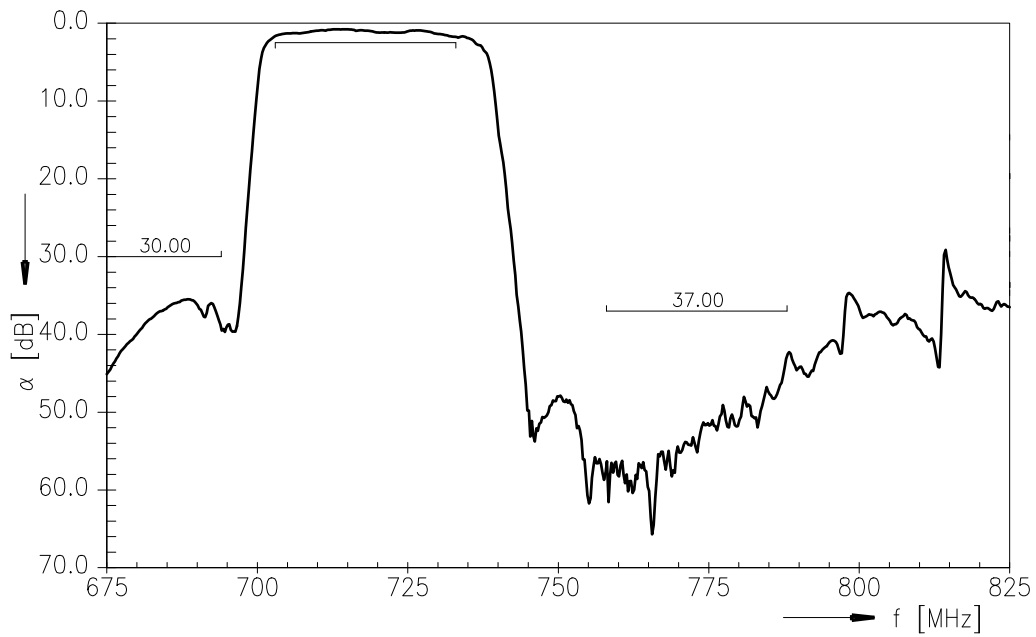
1) Extended upperlimit: 168 @ 125 °C acc. to IEC 60068-2-2 Bb.

2) acc. to JESD22-A115B (machine model), 10 negative & 10 positive pulses.

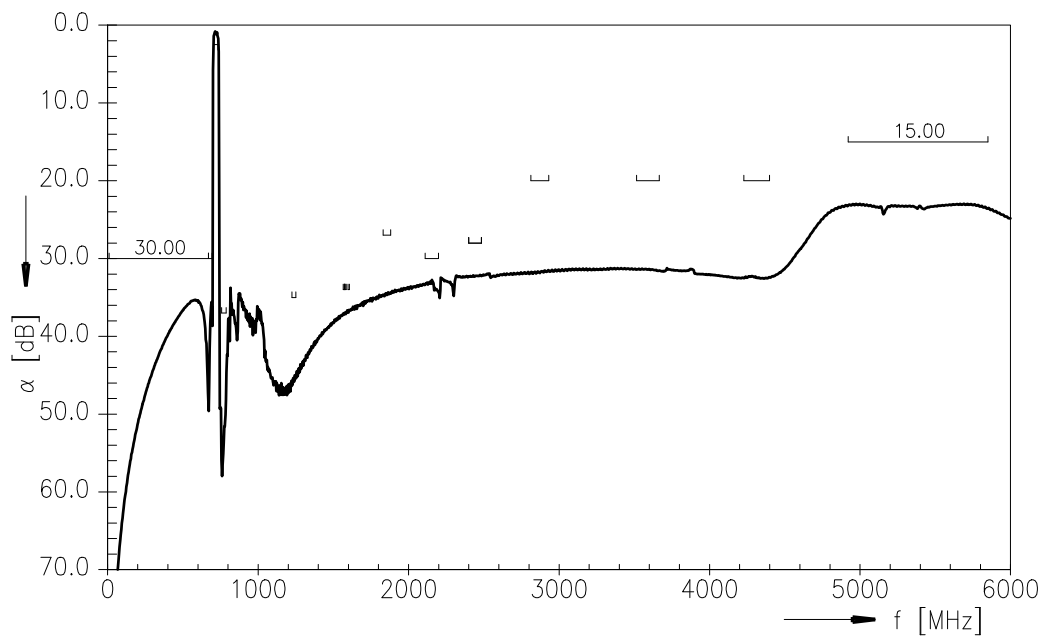
3) acc. to JESD22-A114F (human body model), 1 negative & 1 positive pulses.

4) acc. to JESD22-A101C (charge device model), 3 negative & 3 positive pulse

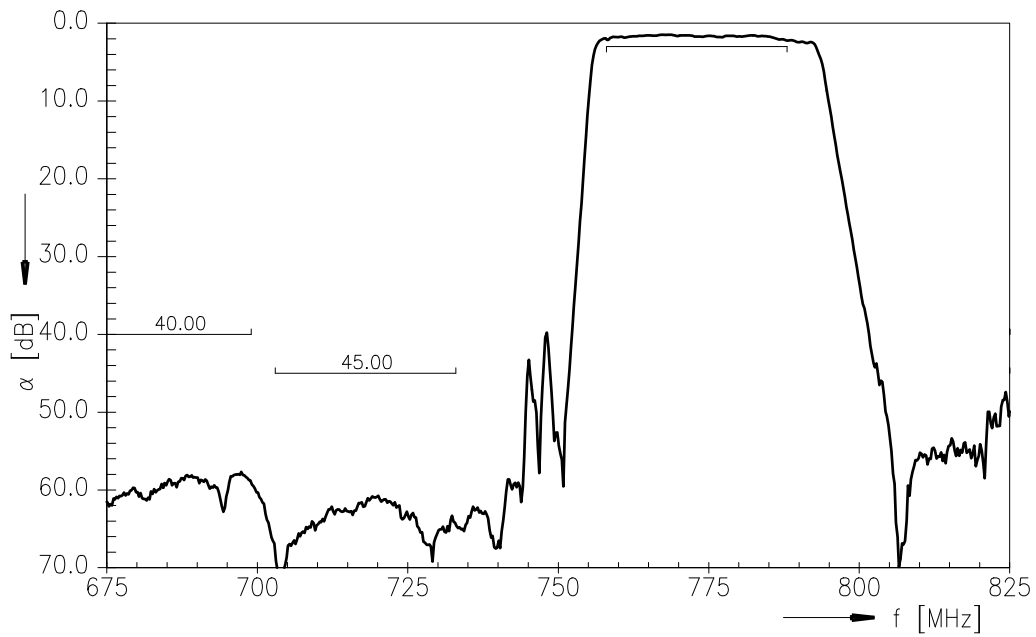
**Frequency response Tx-Antenna**



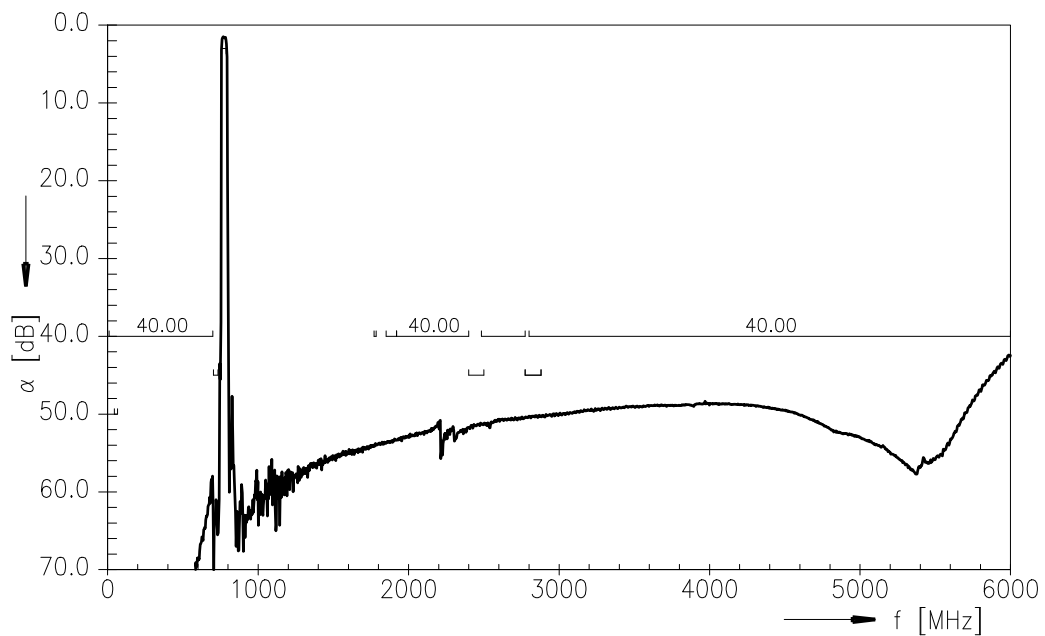
**Frequency response Tx-Antenna (wideband)**



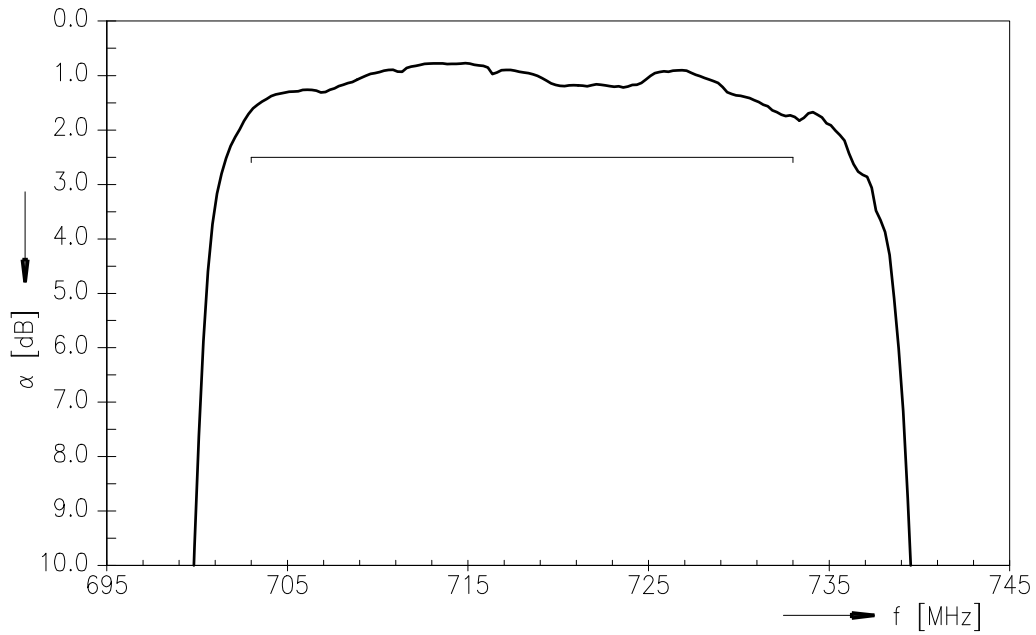
**Frequency response Antenna-Rx**



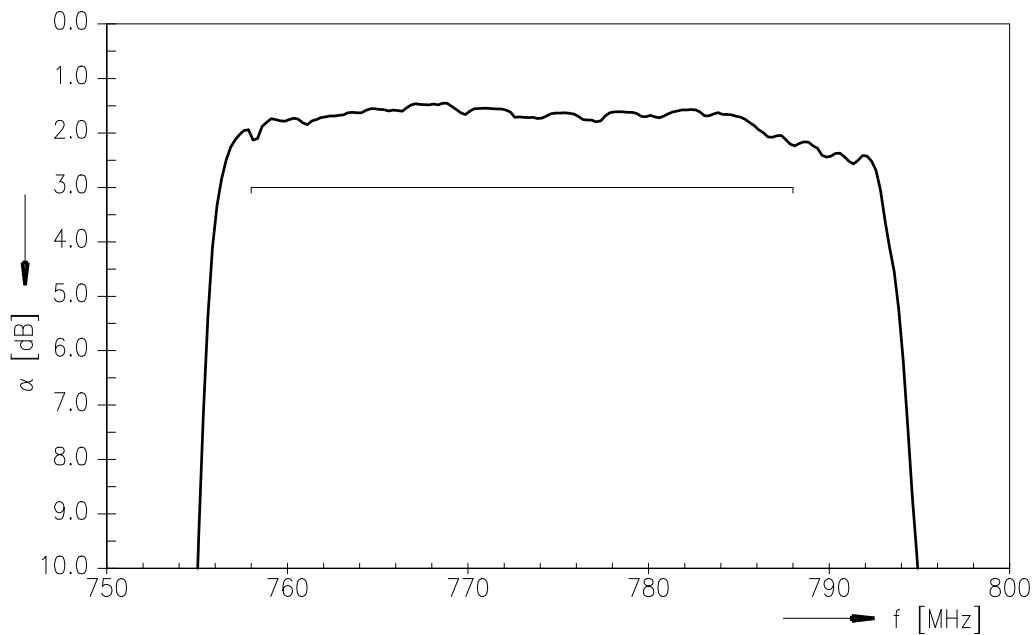
**Frequency response Antenna-Rx (wideband)**



**Frequency Response TX - Ant (passband, CW test signal)**

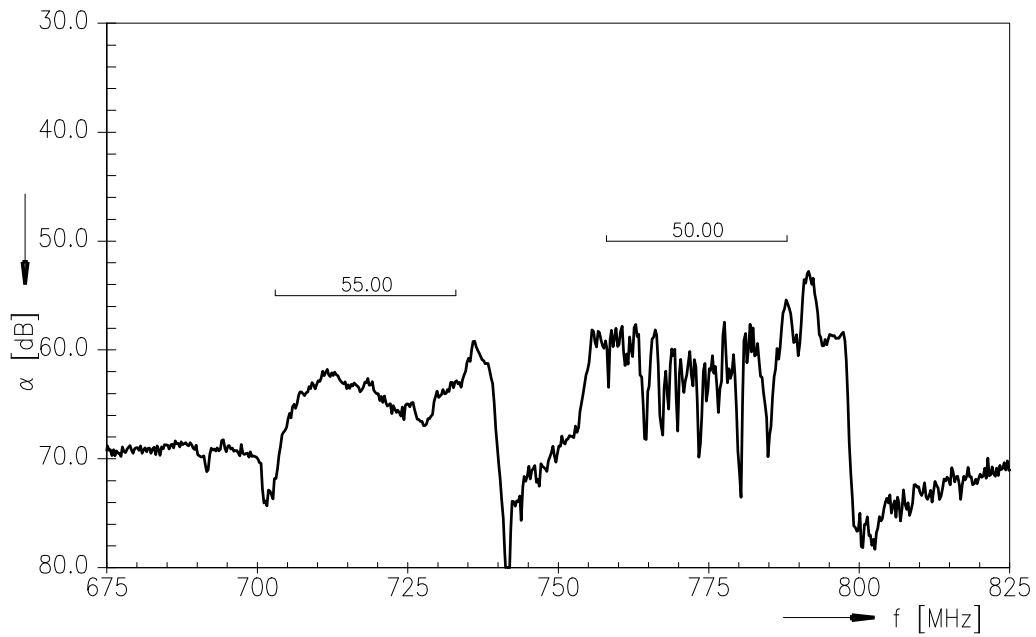


**Frequency Response Ant-RX (passband, CW test signal)**

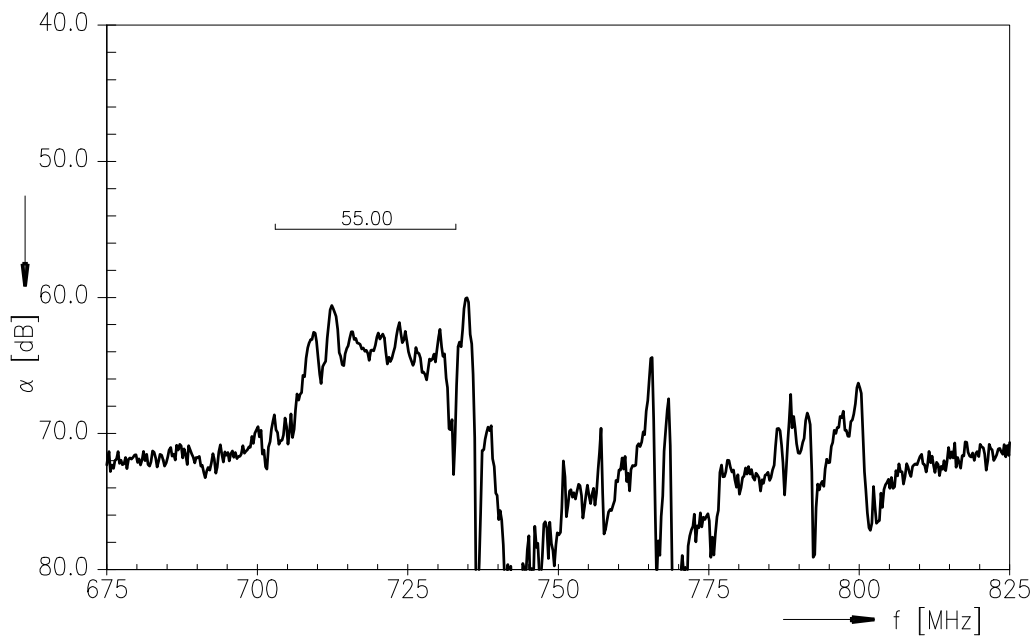




**Frequency response Tx-Rx ( differential mode, CW signal )**



**Frequency response Tx-Rx ( common mode, CW signal )**



**Data Sheet**

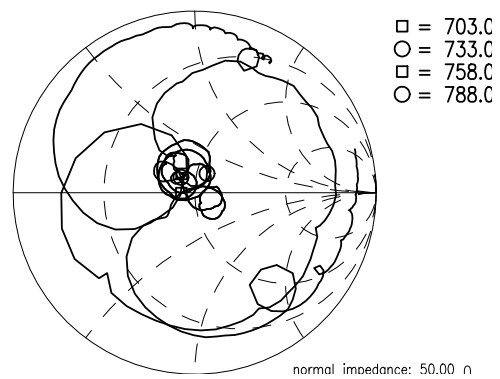
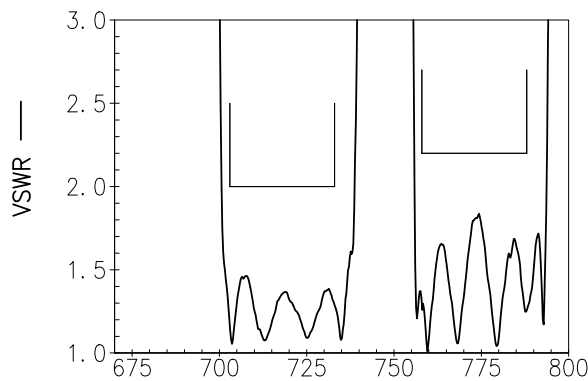
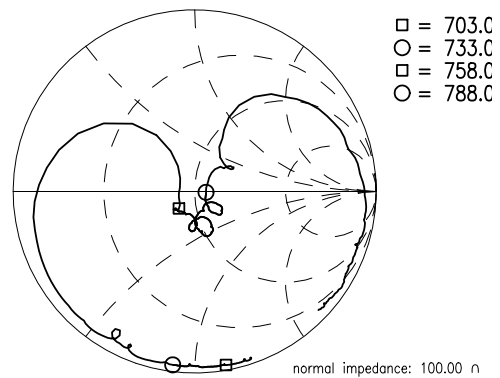
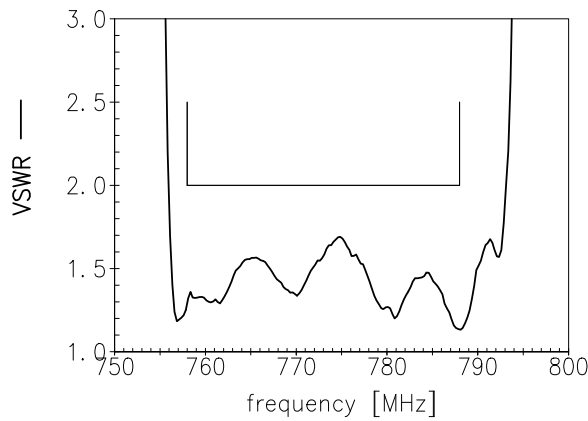
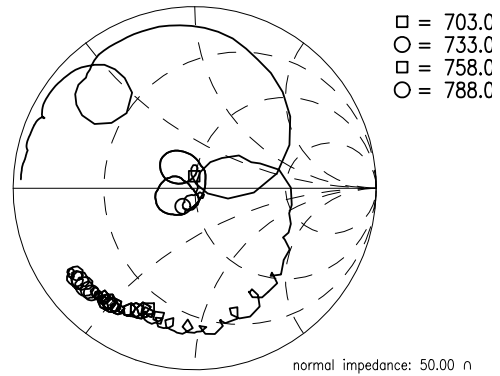
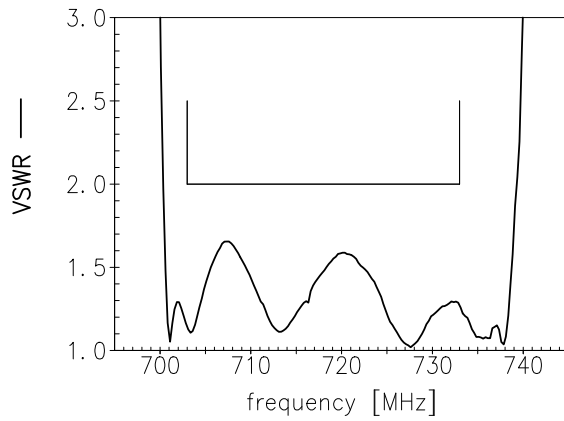


**Return loss**

**S<sub>11</sub> Tx-port**

**S<sub>22</sub> Antenna-port**

**S<sub>33</sub> Rx-port**



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

<b>SAW Components</b>	<b>B8548</b>
<b>SAW duplexer</b>	<b>718.0 / 773.0 MHz</b>

Data Sheet



### References

<b>Type</b>	B8548
<b>Ordering code</b>	B39771B8548P810
<b>Marking and package</b>	C61157-A8-A79
<b>Packaging</b>	F61047-V8259-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B8548_NB_UN.s4p, B8548_WB_UN.s4p See file header for pin/port assignment.
<b>Soldering profile</b>	S_6001
<b>RoHS compatible</b>	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 8 <sup>th</sup> , 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.
<b>Moldability</b>	Before using in overmolding environment, please contact your EPCOS sales office.
<b>Matching coils</b>	See Inductor pdf-catalog <a href="http://www.tdk.co.jp/tefe02/coil.htm#aname1">http://www.tdk.co.jp/tefe02/coil.htm#aname1</a> and Data Library for circuit simulation <a href="http://www.tdk.co.jp/etvcl/index.htm">http://www.tdk.co.jp/etvcl/index.htm</a>

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