

BGF100

Microphone Filter and ESD Protection

Small Signal Discretes



Never stop thinking

Edition 2006-10-17

**Published by
Infineon Technologies AG
81726 München, Germany**

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BGF100

Revision History: 2006-10-17, V2.1

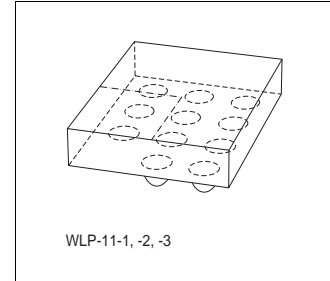
Previous Version: 2006-01-30

Page	Subjects (major changes since last revision)
All	Layout conformation

Microphone Filter and ESD Protection

Features

- Differential Microphone filter
- Integrated ESD protection up to 15 kV
- Low input impedance
- More than 30 dB stopband attenuation
- Ideal for GSM/UMTS
- Wafer Level Package with SnAgCu solder balls



Description

The BGF100 is a microphone filter with low pass characteristic offering a very high stop band attenuation up to 6 GHz. It also provides an ESD protection at the input pins up to 15 kV contact discharge. The wafer level package is a green leadfree package with a size of only 1.6 mm × 2.1 mm and a total height of 0.65 mm.

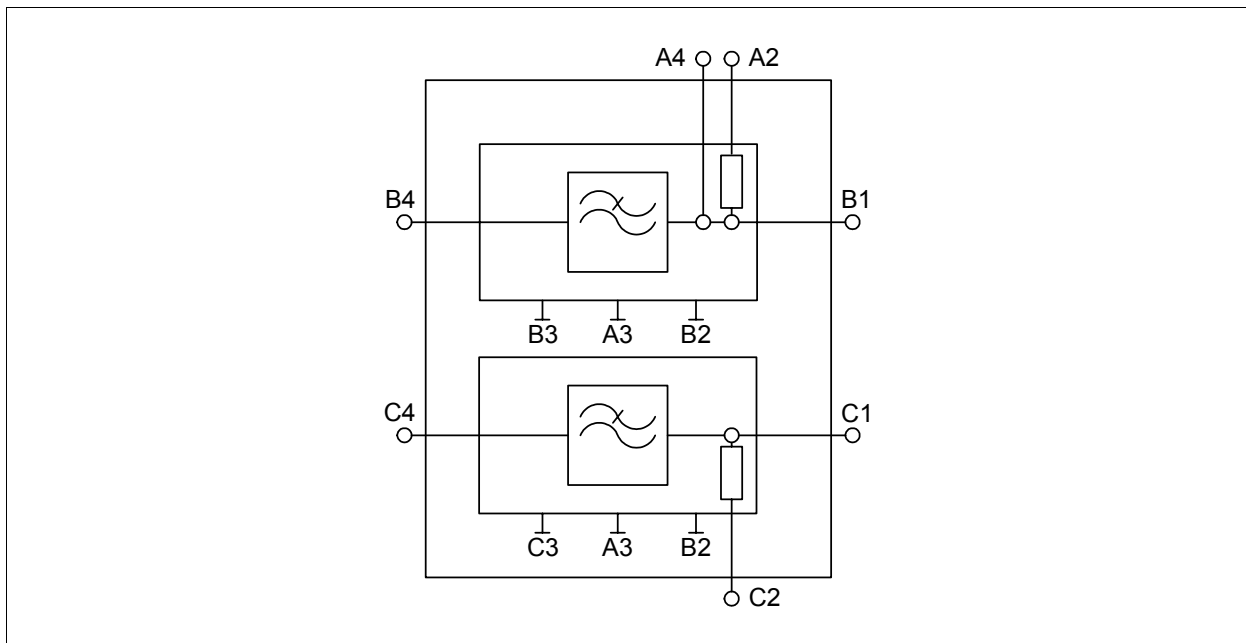


Figure 1 Blockdiagram

Type	Package	Marking	Chip
BGF100	WLP-11-2	BGF100	N0700

Table 1 Maximum Ratings

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Voltage at pin A2 to GND	V_{A2}	0		4	V	
Voltage at all other pins to GND	V_P	-14		14	V	
Operating temperature range	T_{OP}	-40		+85	°C	

Table 1 Maximum Ratings (cont'd)

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Storage temperature range	T_{STG}	-65		+150	°C	
Input power at all pins	P_{IN}			1	mW	
Electrostatic Discharge According to IEC61000-4-2						
Contact discharge at pins B4 to B3, C4 to C3	V_E	-15		15	kV	
Contact discharge between all other pins	V_1	-2		2	kV	

Table 2 Electrical Characteristics¹⁾

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Resistors R_1, R_2	$R_{1,2}$	45	50	55	Ω	
Resistors R_3, R_4	$R_{3,4}$	950	1000	1050	Ω	
Resistors R_5, R_6	$R_{5,6}$	1980	2200	2420	Ω	
Resistor Matching R_3, R_4	R_M	-1		+1	%	
Capacitances C_1 to C_6	C	800	1000	1350	pF	
Substrate leakage currents, Pin B4 to A3 or C4 to A3	I			100	nA	$V = 3\text{ V}$
Insertion loss ²⁾ Pins B4 to B1 or C4 to C1	IL	30			dB	$f = 0.1 \dots 6\text{ GHz},$ $Z_S = Z_L = 50\ \Omega$

1) at $T_A = 25\text{ °C}$

2) Insertion loss (see also [Figure 3](#)) strongly depends upon source and load impedance. For RF test purposes a $50\ \Omega$ environment is used.

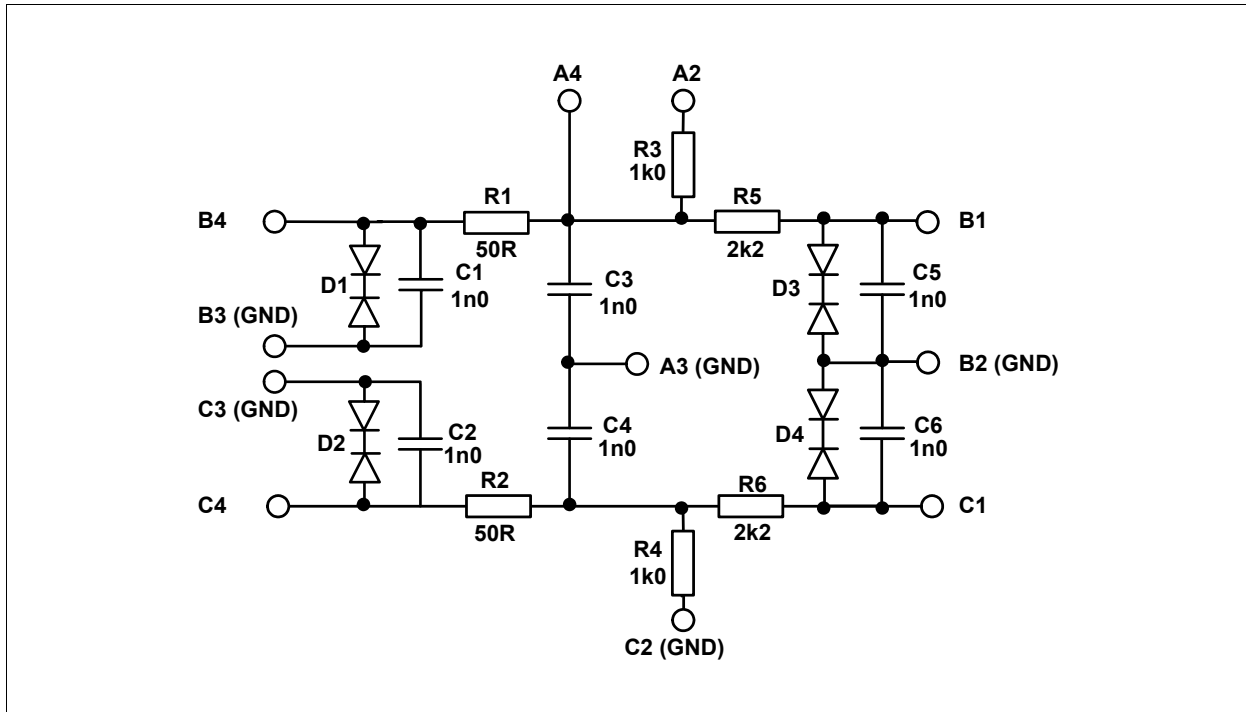


Figure 2 Schematic

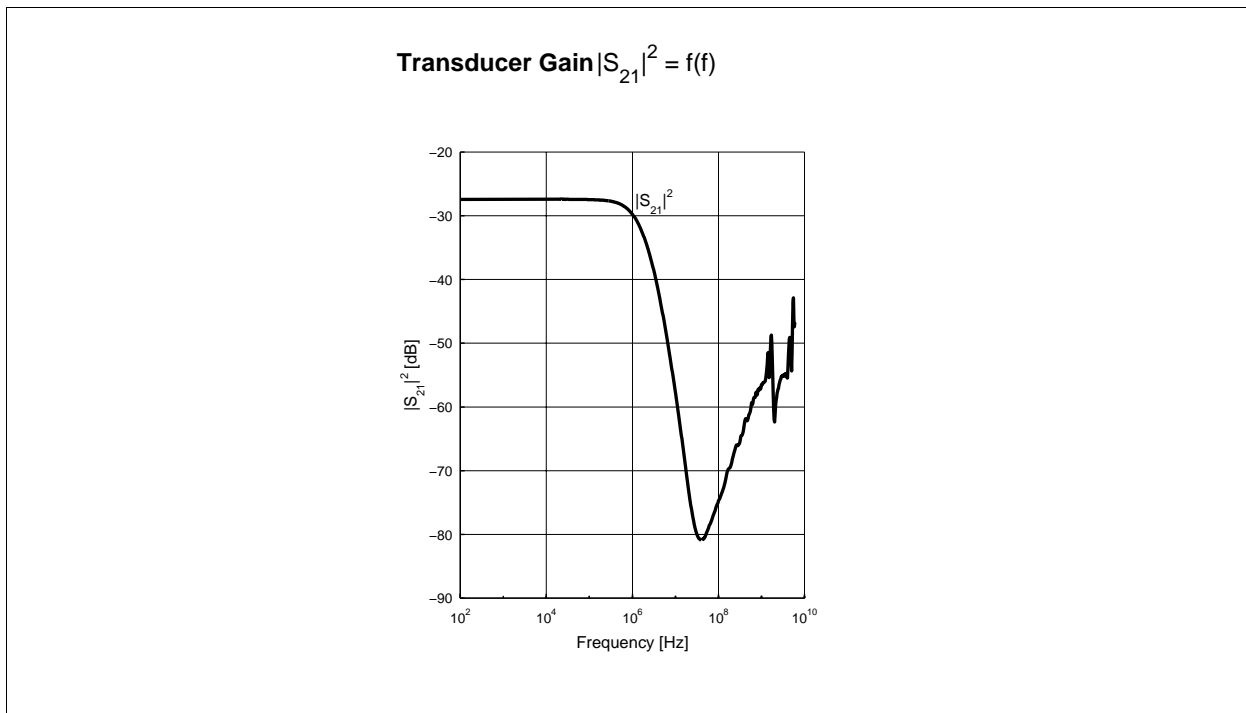


Figure 3 Insertion Loss ($Z_S = Z_L = 50 \Omega$)

Package Outlines

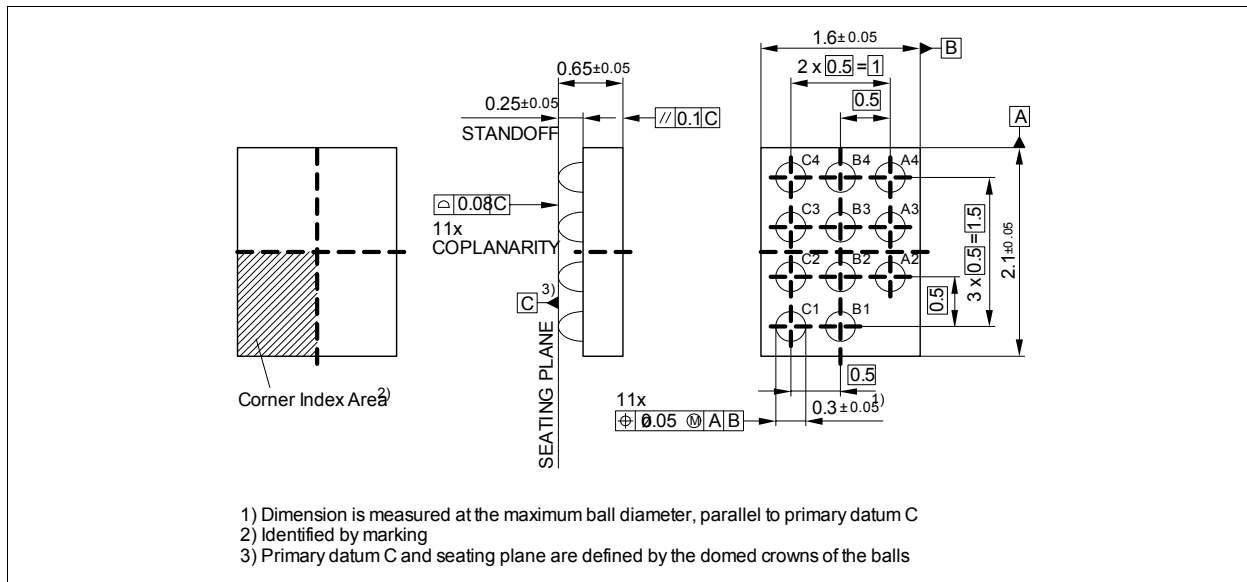


Figure 4 WLP-11-2

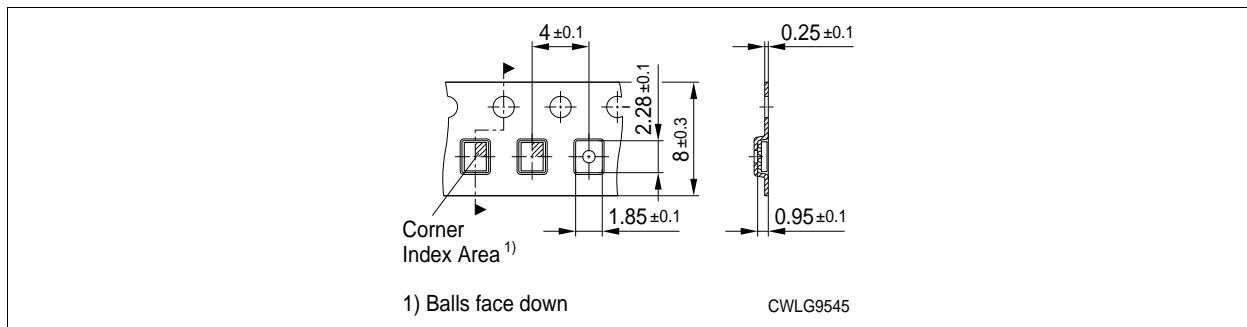


Figure 5 Tape for WLP-11-2

Dimensions in mm

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