BGF200

Microphone Filter and ESD Protection

Small Signal Discretes

Never stop thinking

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BGF200

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

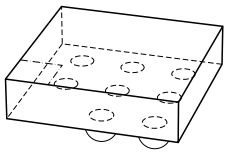
Previous Version: 2006-03-16

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

Microphone Filter and ESD Protection

Feature

- 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-Bumps



WLP-8-1,- 2, -4

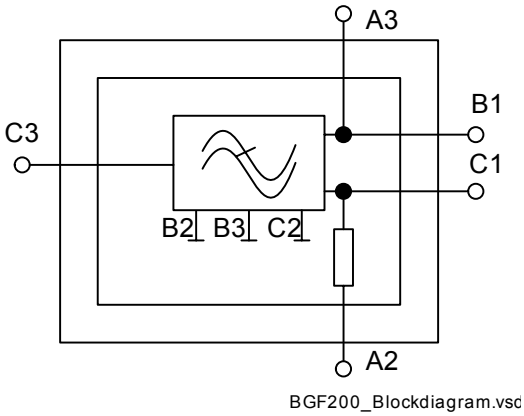


Figure 1 Blockdiagram

Description

The BGF200 is a microphone filter with low pass characteristic offering a very high stop band attenuation up to 6 GHz. All pins are protected against ESD. The wafer level package is a green package with a size of only 1.6 mm x 1.6 mm and a total height of 0.65 mm.

Type	Package	Marking	Chip
BGF200	WLP-8-4	GF200	N0703

Table 1 Maximum Ratings

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Voltage at pin A2 to GND	V_{A2}	0		4.0	V	
Voltage at all other pins to GND	V_P	-14		14	V	
Operating temperature range	T_{OP}	-40		+85	°C	
Storage temperature range	T_{STG}	-65		+150	°C	
Summed up input power for all pins	P_{IN}			25	mW	T_A < 70 °C
Electrostatic Discharge According to IEC61000-4-2[1)]						
Between pins C3 and B3	V_E	-15		15	kV	
Between all other pins	V_I	-2		2	kV	

1) Contact discharge

Table 2 Electrical Characteristics[1)]

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Resistors R_1, R_2, R_4	$R_{1,2,4}$	2090	2200	2310	Ω	
Resistor R_3, R_5	$R_{3,5}$	47.5	50	52.5	Ω	
Capacitances C_1,C_2,C_3,C_4	$C_{1,2,3,4}$	800	1000	1350	pF	
Capacitances C_5	C_5	120	150	200	pF	
Substrate leakage currents all pins to GND	I			100	nA	V_R = 3 V
Insertion loss[2)] pins C_3 to B_1, C_1	IL	30			dB	F = 0.1... 6 GHz, Z_S = Z_L = 50 Ω

1) at T_A = 25 °C

2)Insertion loss (see also **Figure 3**) strongly depends upon source and load impedance. For RF test purposes a 50 Ω environment is used.

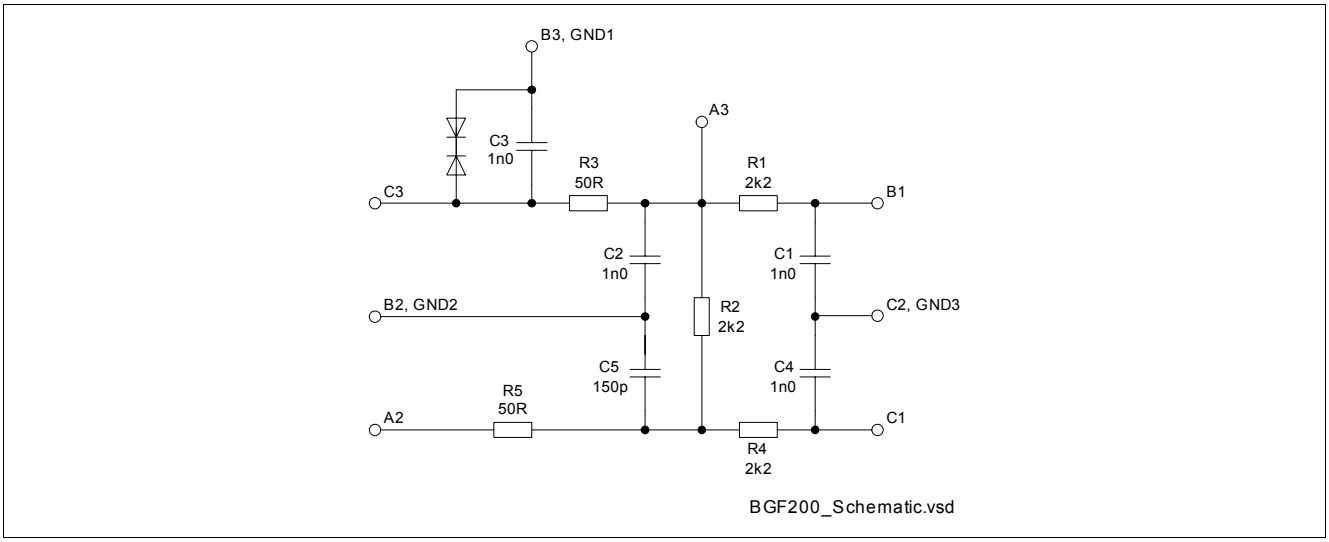


Figure 2 Schematic

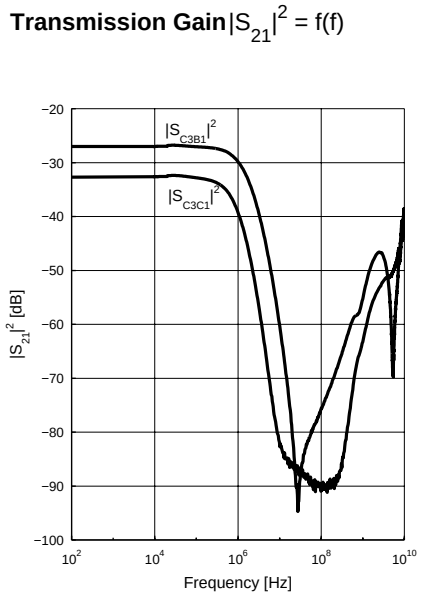
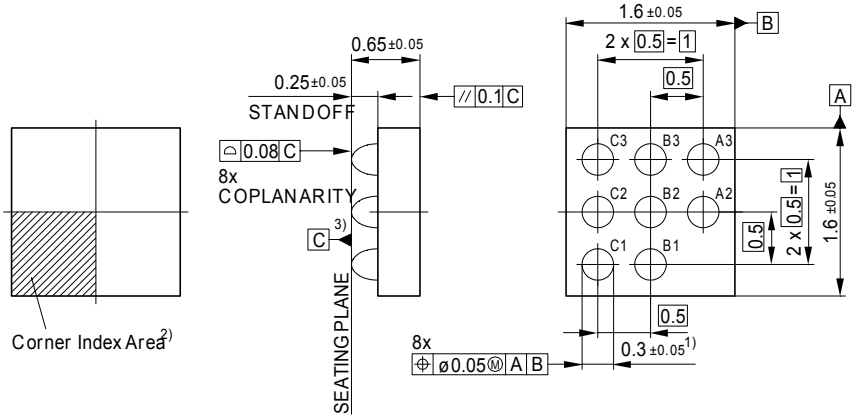


Figure 3 Transmission C3 - B1, C3 - C1



1) Dimension is measured at the maximum ball diameter, parallel to primary datum C
2) Identified by marking
3) Primary datum C and seating plane are defined by the domed crowns of the balls

Figure 4 Package Outline WLP-8-4

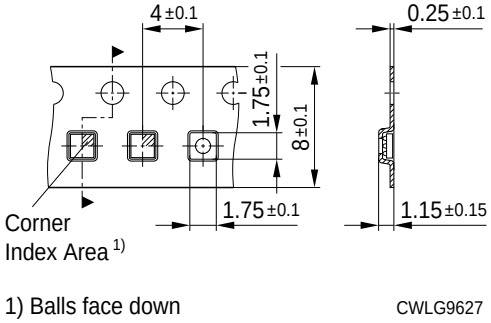


Figure 5 Tape for WLP-8-4