

# BGF112

AV I/F Device with ESD Protection

Small Signal Discretes



Never stop thinking

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**BGF112**

**Revision History: 2008-11-19, V3.0**

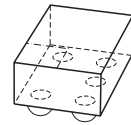
**Previous Version: 2008-10-07, V2.0**

<b>Page</b>	<b>Subjects (major changes since last revision)</b>
All	Preliminary status removed

## BGF112

### Features

- ESD protection circuit and filter for AV I/F interface
- Integrated ESD protection at external pins of 15 kV contact discharge according to IEC61000-4-2
- Wafer level package with SnAgCu solder balls
- RoHS and WEEE compliant package
- 400  $\mu\text{m}$  solder ball pitch

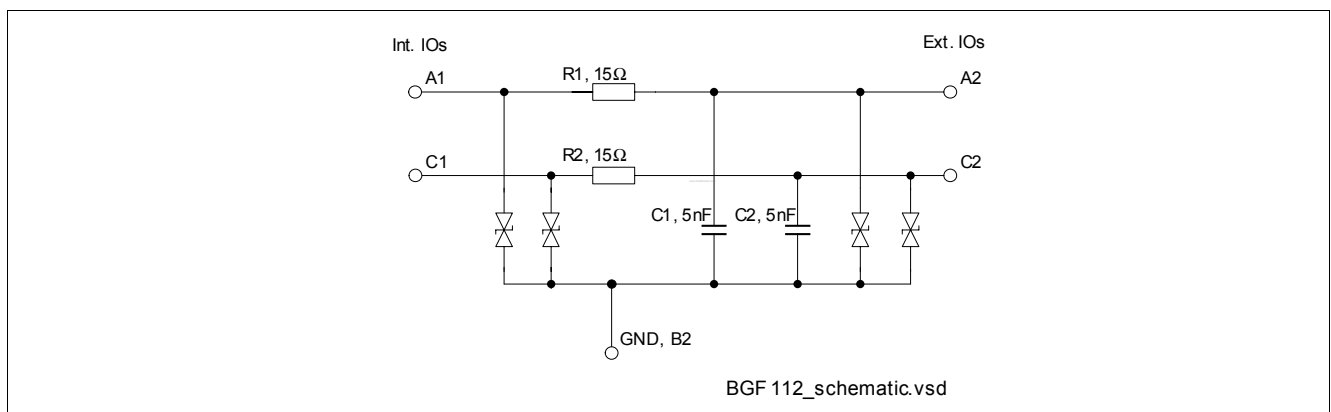


WLP-5-1



### Description

BGF112 is an ESD protection circuit and EMI filtering device for an AV I/F interface for mobile applications. The external pins are protected against ESD pulses of 15 kV contact discharge according to IEC61000-4-2. The wafer level package is a green leadfree package with a size of only 0.76 mm x 1.16 mm and a total height of 0.6 mm



**Figure 1 Schematic**

Type	Package	Marking	Chip
BGF112	WLP-5-1	112	N0736

**Table 1 Maximum Ratings**

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Voltage at all pins to GND	$V_P$	0	–	4	V	–
Operating temperature range	$T_{OP}$	-40	–	+85	$^{\circ}\text{C}$	–
Storage temperature range	$T_{STG}$	-65	–	+150	$^{\circ}\text{C}$	–
Power dissipation each line	$P_{in}$	–	–	70	mW	$T_S < 70^{\circ}\text{C}$

### Electrostatic Discharge According to IEC61000-4-2

Contact discharge from A2 or C2 to GND	$V_{ESD}$	-15	–	15	kV	–
Contact discharge between all other pins	$V_{ESD}$	-2	–	2	kV	–

**Table 2 Electrical Characteristics<sup>1)</sup>**

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Resistors $R_1, R_2$	$R_{1,2}$	13.5	15	16.5	$\Omega$	–
Capacitors $C_1, C_2$	$C_{1,2}$	4	5	6	nF	–
Total ESD junction capacitance of each line to GND	$C_T$	–	18	30	pF	$V = 0\text{ V}$
Leakage currents ESD diodes to GND	$I_R$	–	0.1	100	nA	$V = \pm 3\text{ V}$
			0.1	100	$\mu\text{A}$	$V = \pm 14\text{ V}$

1) at  $T_A = 25\text{ }^\circ\text{C}$

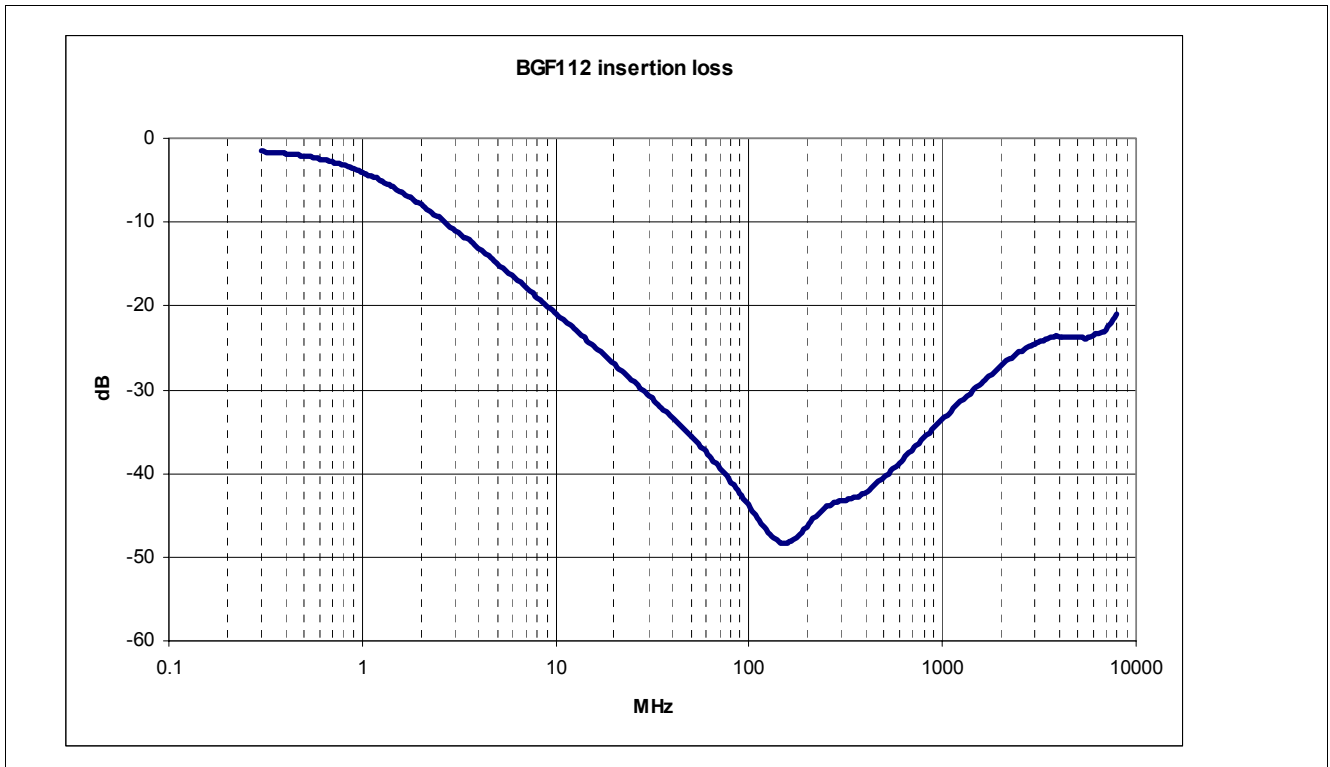


Figure 2 Insertion loss of path A1-A2 or C1-C2 ( $Z_S = Z_L = 50 \Omega$ )

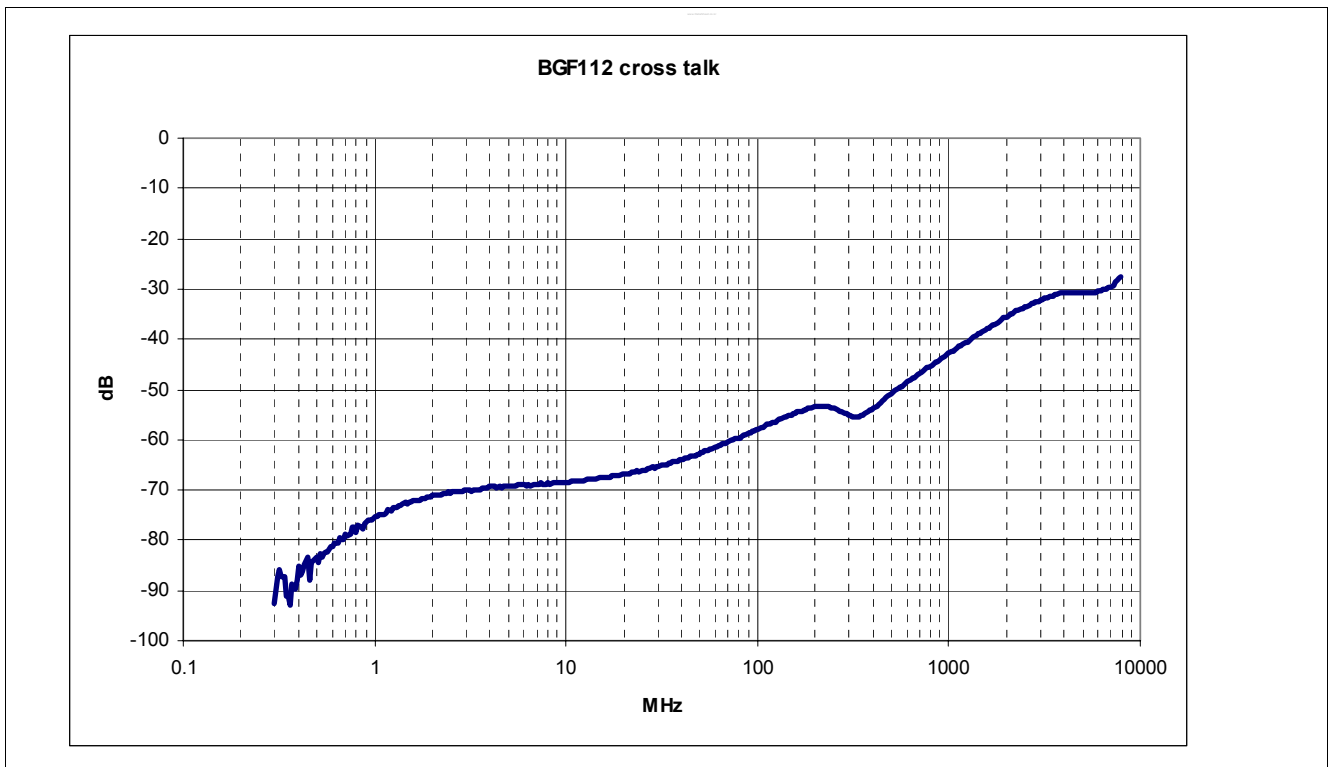


Figure 3 Cross talk of path A1-C2 or C1-A2 ( $Z_S = Z_L = 50 \Omega$ )

Package Outlines

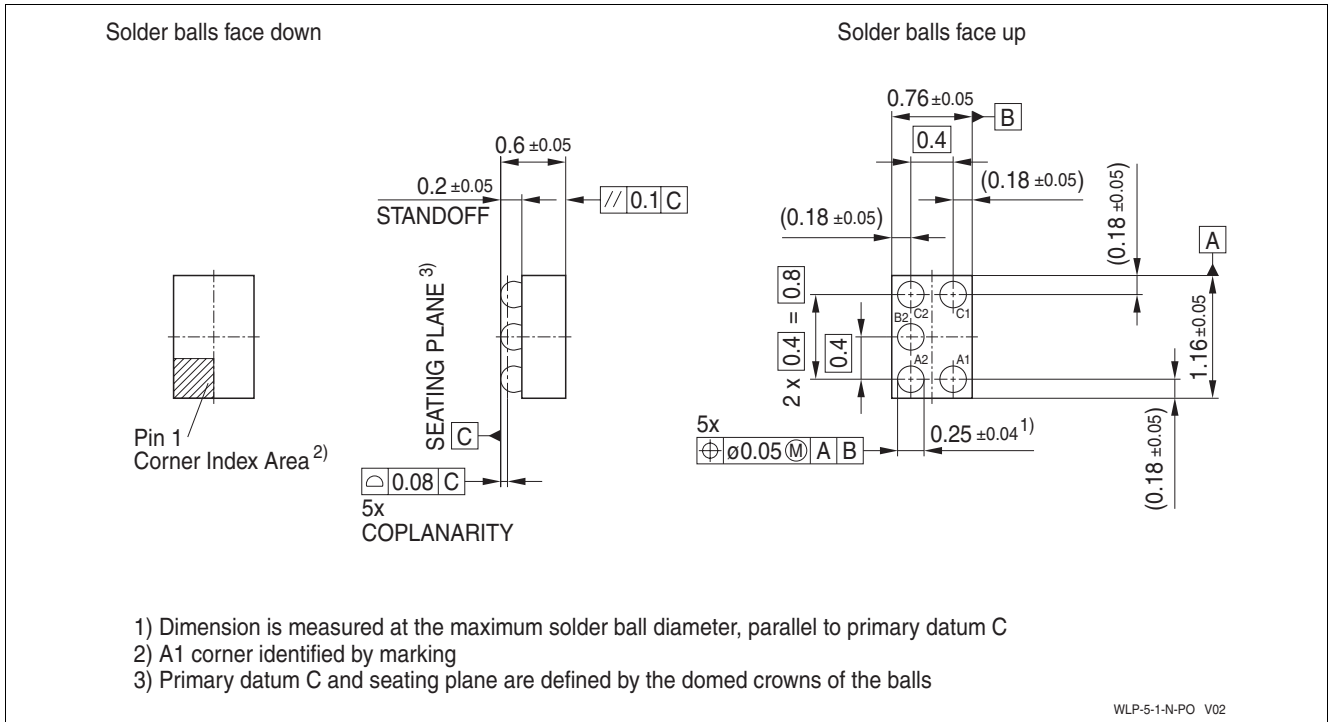


Figure 4 WLP-5-1 (dimensions in mm)

Tape and reel specification

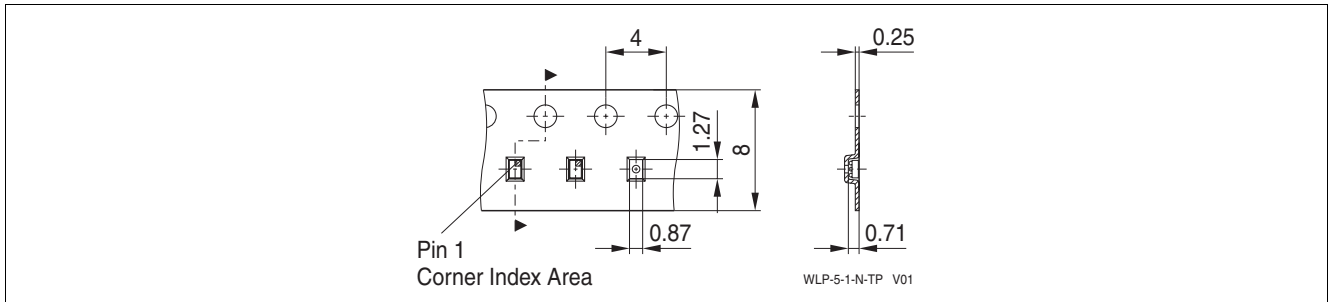


Figure 5 Tape for WLP-5-1 (dimensions in mm)

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