# BGF108

## 7 Channel LCD Filter Array with ESD Protection

Small Signal Discretes

Never stop thinking

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**BGF108**

**Revision History: 2007-12-10, V2.0**

**Previous Version: 2006-12-14, V1.4**

| Page | Subjects (major changes since last revision) |
|---|---|
| All | Preliminary status removed |
| 5 | **Table 1** and **Table 2** updated |
| 6 | Line capacitance, Insertion Loss and Analog Cross Talk curves updated |
| 7 | Package and tape drawing updated |
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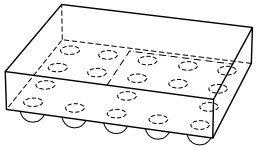
# 7 Channel LCD Filter Array with ESD Protection

**Feature**

- 7 channel integrated RC filter array
- ESD protection according to IEC61000-4-2 up to 15 kV contact discharge on all IOs
- Wafer Level Package with SnAgCu solder balls
- 400 µm solder ball pitch
- RoHS and WEEE compliant package



WLP-18-1-N-3D

RoHS

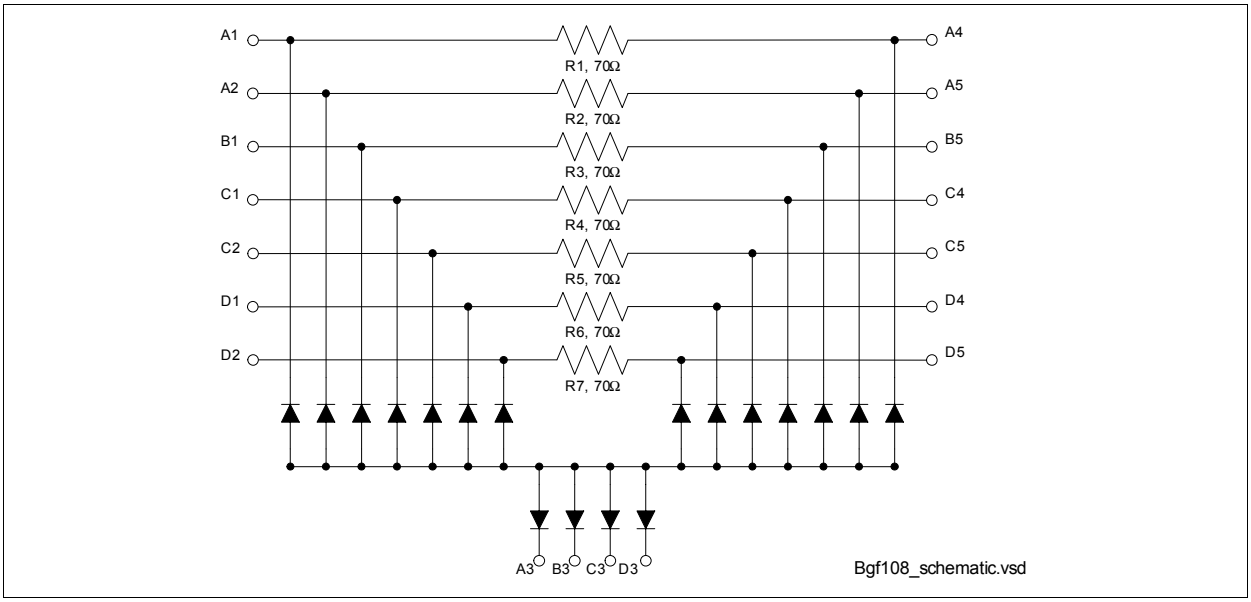



**Figure 1 Schematic**

## Description

The BGF108 is a 7 channel RC filter array to provide EMI attenuation of undesired signals in the 800 - 2000 MHz range. All pins are protected against ESD up to 15 kV according to IEC61000-4-2 (contact discharge). The wafer level package is a green package with a size of only 1.68 mm x 2.02 mm and a total height of 0.60 mm.

| Type | Package | Marking | Chip |
|---|---|---|---|
| BGF108 | WLP-18-1 | BGF108 | N0715 |

**Table 1 Maximum Ratings**

| Parameter | Symbol | Values | | | Unit | Note / Test Condition |
|---|---|---|---|---|---|---|
| | | Min. | Typ. | Max. | | |
| Voltage at all pins to GND | $V_P$ | 0 | | 5 | V | |
| Operating temperature range | $T_{OP}$ | -40 | | +85 | °C | |
| Storage temperature range | $T_{STG}$ | -65 | | +150 | °C | |
| Summed up input power for all pins | $P_{IN}$ | | | 60 | mW | $T_S$ < 70 °C |
| Electrostatic discharge according to IEC61000-4-2[1)] at all pins | $V_E$ | -15 | | 15 | kV | |

1) Contact discharge

**Table 2 Electrical Characteristics[1)]**

| Parameter | Symbol | Values | | | Unit | Note / Test Condition |
|---|---|---|---|---|---|---|
| | | Min. | Typ. | Max. | | |
| Series Resistors $R_1$... $R_{10}$ | $R$ | 56 | 70 | 84 | Ω | |
| Leakage current of each line to GND | $I_R$ | | 1<br>2 | 100<br>1000 | nA | $V_R$ = 3 V<br>$V_R$ = 5 V |
| Breakdown voltage of each line to GND | $V_{(BR)}$ | 7 | 8.2 | | V | $I_{(BR)}$ = 1 mA |
| Line capacitance of each line to GND | $C_T$ | | 27<br>17 | 30 | pF | $V_R$ = 0 V<br>$V_R$ = 3 V |

1) at $T_A$ = 25 °C

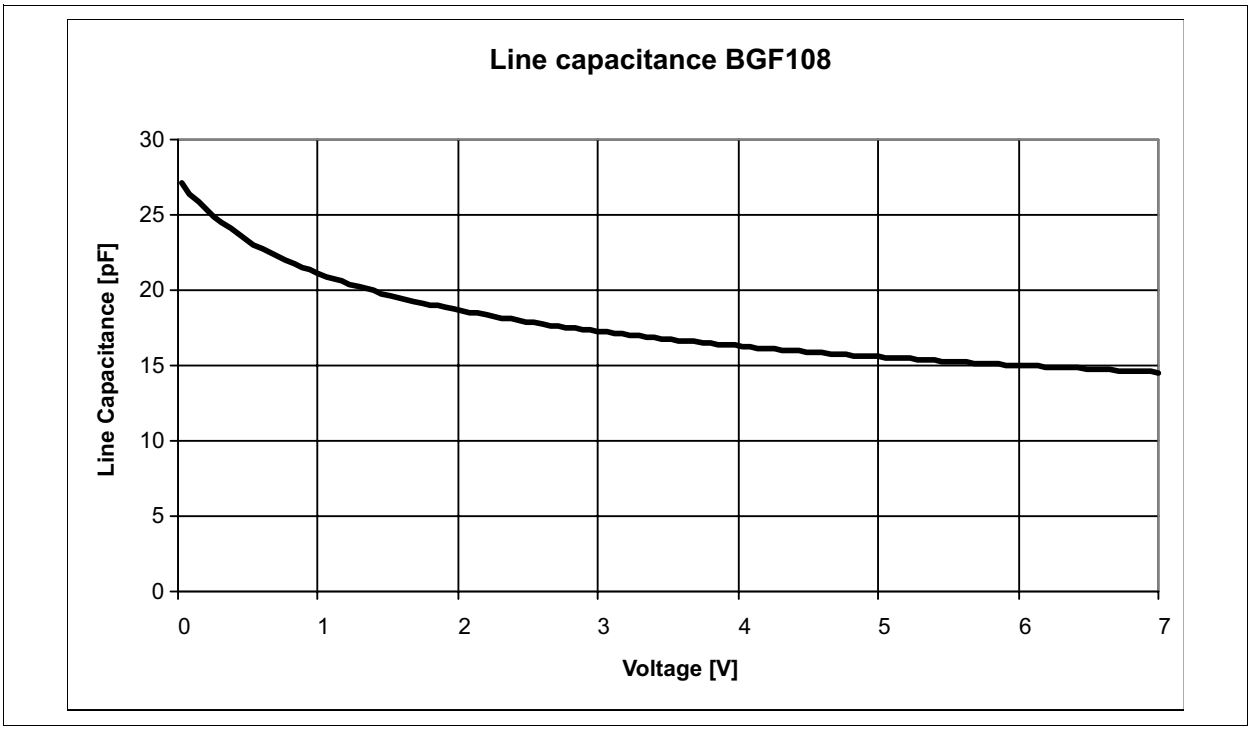



**Figure 2 Capacitance of one line to GND versus DC voltage**

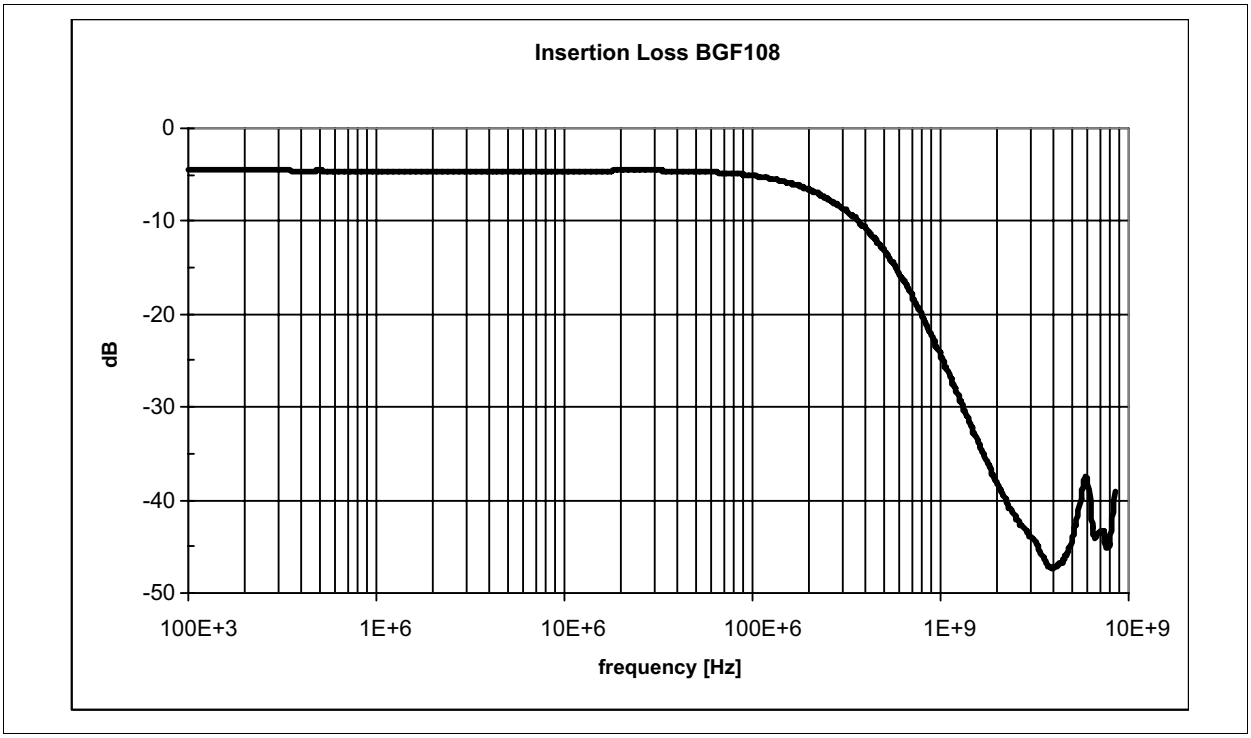



**Figure 3** Typical filter characteristics of on channel ($Z_S$ = $Z_L$ = 50 Ω, $V_R$ = 0 V)

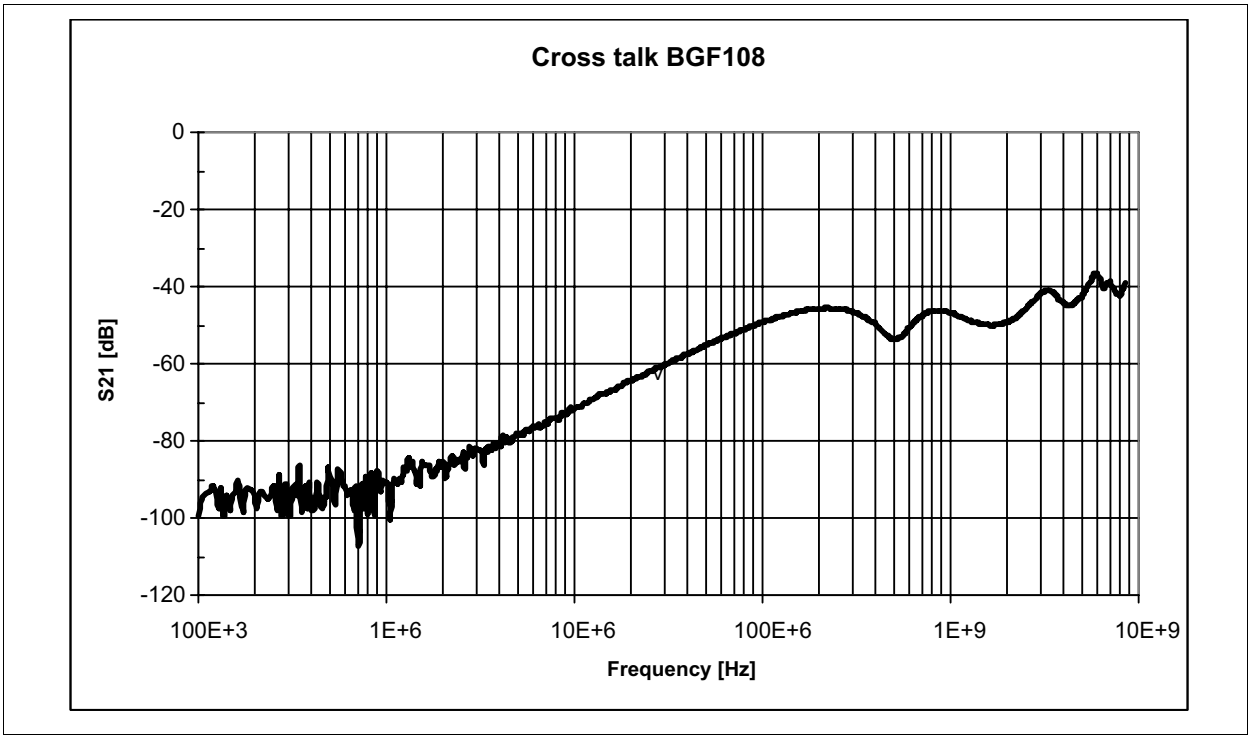



**Figure 4** Typical cross talk between two channels ($Z_S$ = $Z_L$ = 50 Ω, $V_R$ = 0 V)

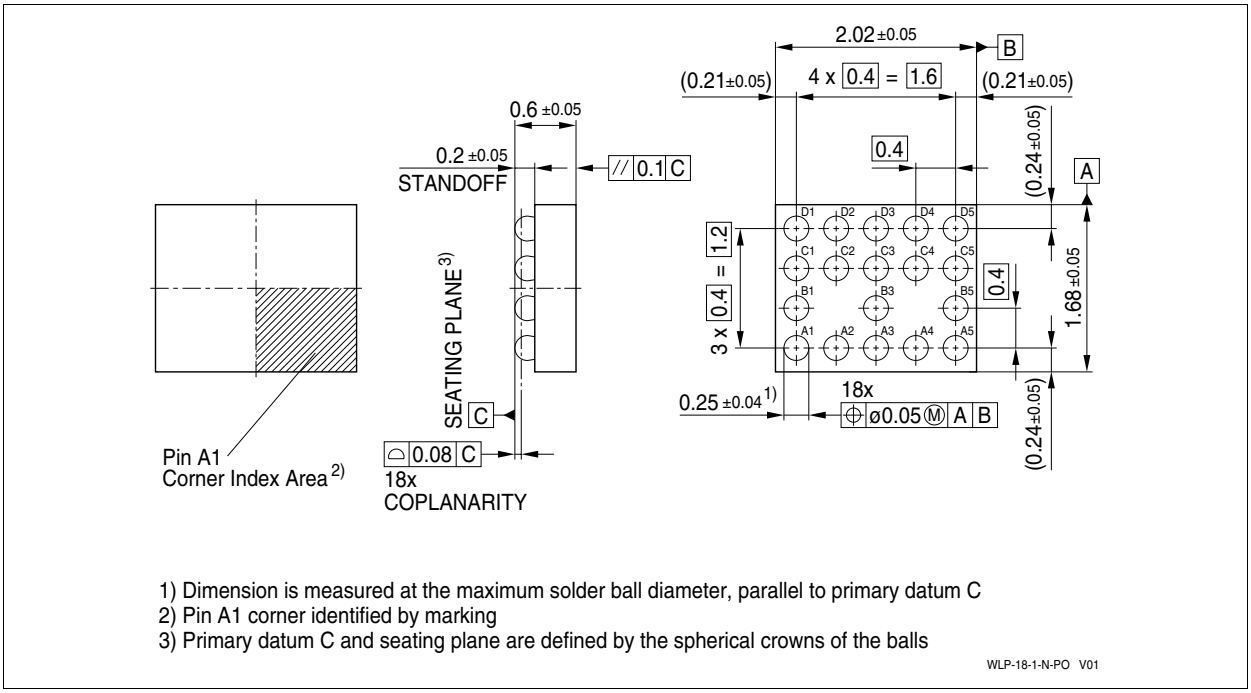



**Figure 5 Package WLP-18-1**

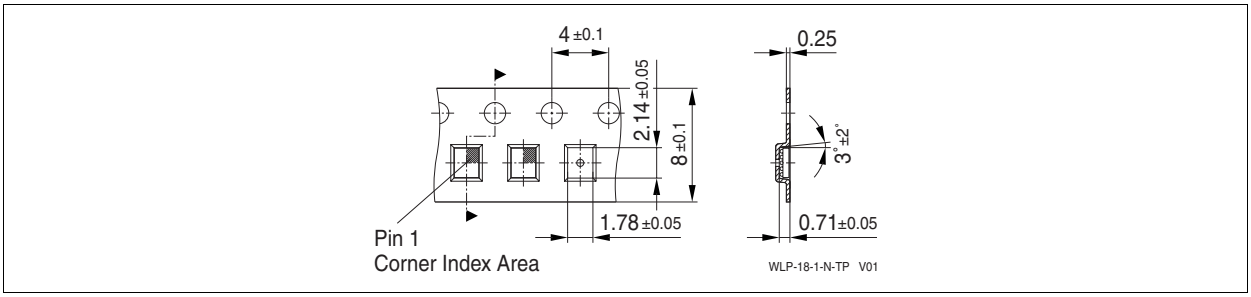



**Figure 6 Tape of WLP-18-1**