

BGF109C

10 Channel LCD Filter Array with ESD Protection

Small Signal Discretes



Never stop thinking

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BGF109C

Revision History: 2008-08-05, V2.0

Previous Version: 2008-07-17, V1.0

| Page | Subjects (major changes since last revision) |
|-------------|---|
| All | Preliminary status removed |
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10 Channel LCD Filter Array with ESD Protection

Feature

- 10 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
- RoHS and WEEE compliant package
- Improved package for increased drop test reliability

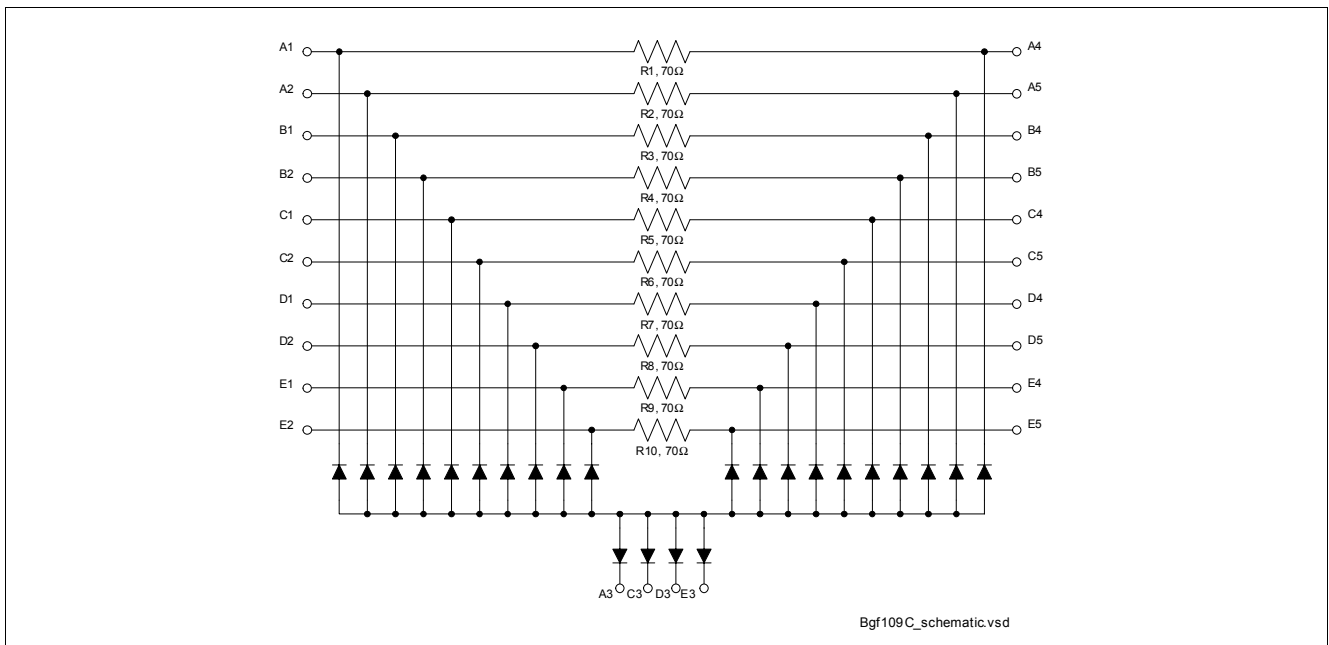


Figure 1 Schematic

Description

The BGF109C is a 10 channel RC filter array to provide 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 1.95 mm x 2.07 mm and a total height of 0.60 mm. The package has been improved for increased drop test reliability.

| Type | Package | Marking | Chip |
|---------|----------|---------|-------|
| BGF109C | WLP-24-9 | BGF109C | N0716 |

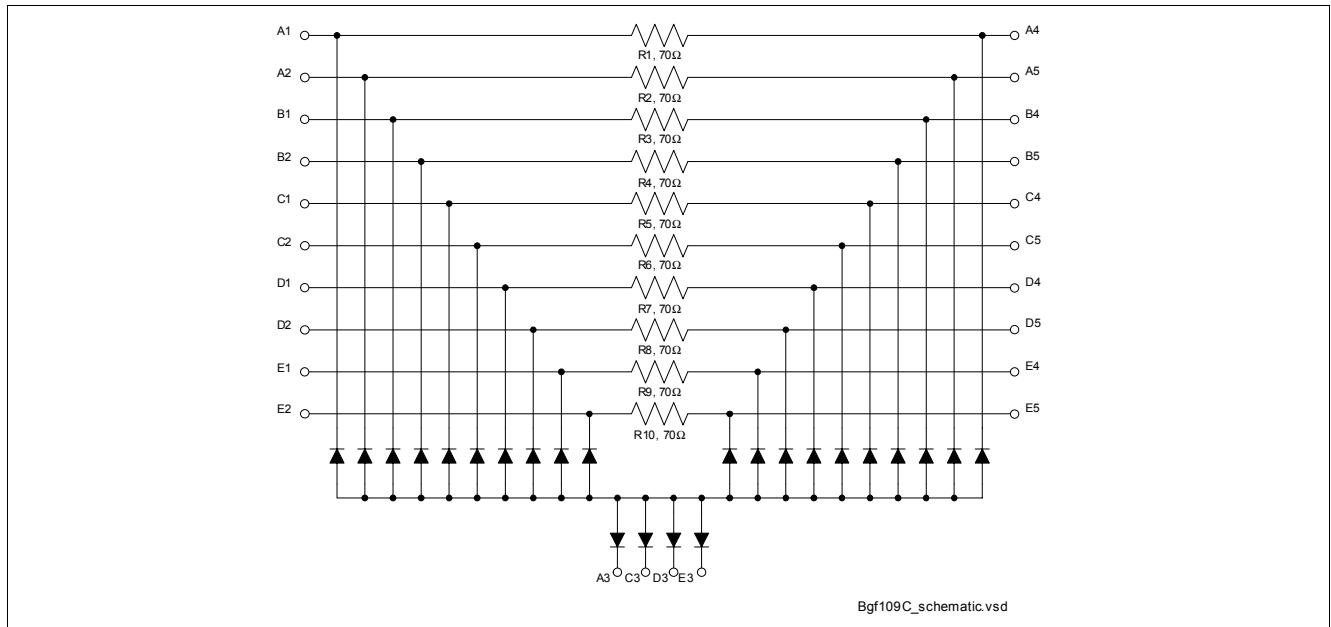
10 Channel LCD Filter Array with ESD Protection
Table 1 Maximum Ratings

| Parameter | Symbol | Values | | | Unit | Note / Test Condition |
|---|-----------|--------|------|------|------|-----------------------|
| | | Min. | Typ. | Max. | | |
| Voltage at all pins to GND | V_P | -7 | | 7 | 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 | $T_S < 70\text{ °C}$ |
| Electrostatic discharge according to IEC61000-4-2 ¹⁾ at all pins | V_E | -15 | | 15 | kV | |

1) Contact discharge

Table 2 Electrical Characteristics¹⁾

| Parameter | Symbol | Values | | | Unit | Note / Test Condition |
|--------------------------------------|--------|--------|----------|------|----------|--|
| | | Min. | Typ. | Max. | | |
| Series Resistors $R_1... R_{10}$ | R | 56 | 70 | 84 | Ω | |
| Line capacitance of each line to GND | C_T | | 28 17 | 30 | pF | $V_R = 0\text{ V}$ $V_R = 3\text{ V}$ |
| Leakage currents of lines to GND | I_R | | | 100 | nA | $V_R = 3\text{ V}$ |

 1) at $T_A = 25\text{ °C}$

Figure 2 Schematic

10 Channel LCD Filter Array with ESD Protection

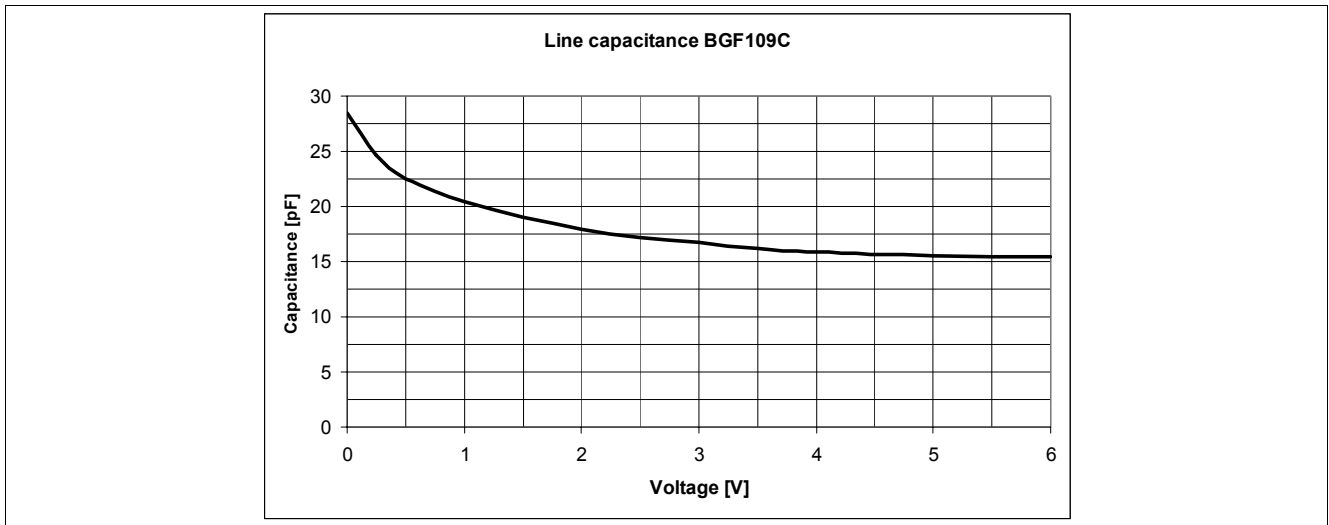


Figure 3 Capacitance of one line to GND versus DC voltage

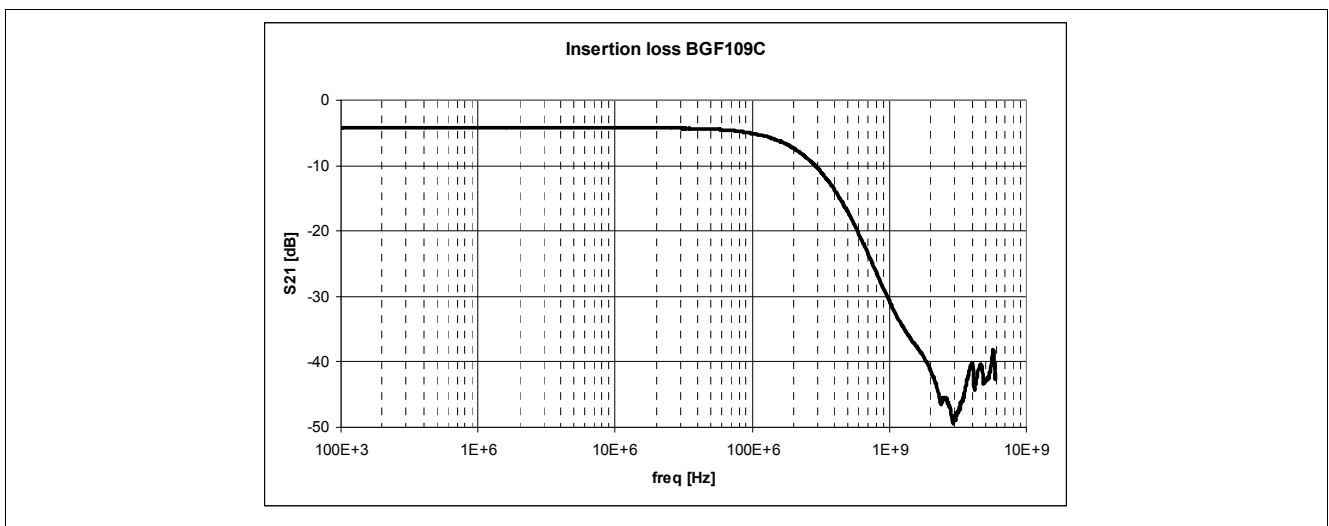


Figure 4 Typical filter characteristics of one filter channel ($Z_S = Z_L = 50 \Omega$, $V_R = 0 \text{ V}$)

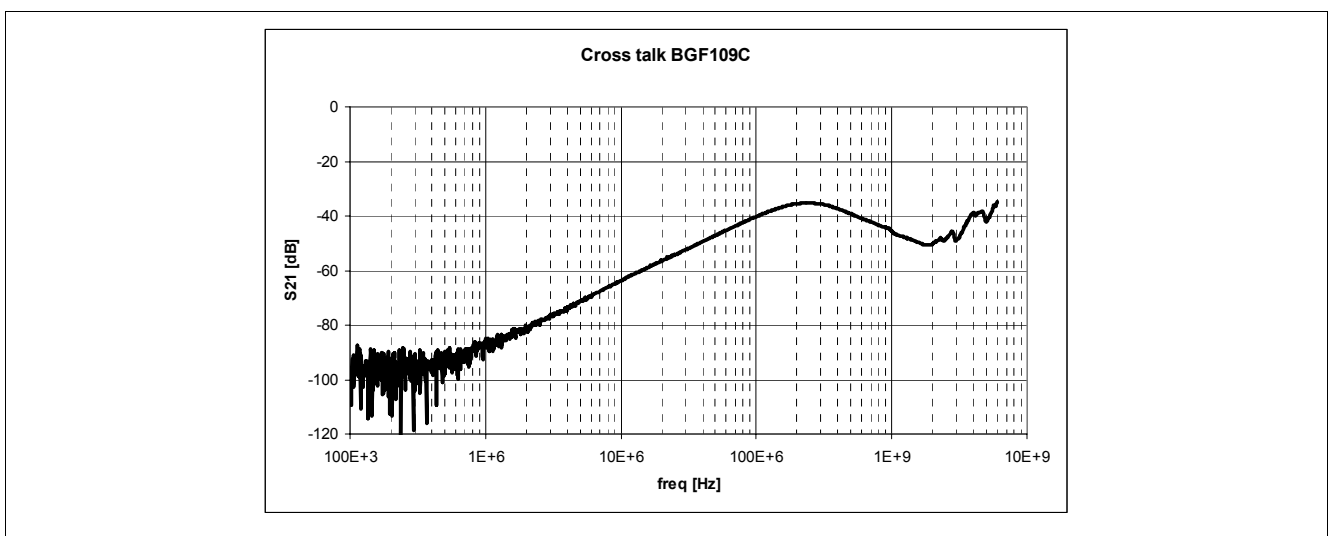


Figure 5 Typical cross talk between two filter channels ($Z_S = Z_L = 50 \Omega$, $V_R = 0 \text{ V}$)

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Package Outline

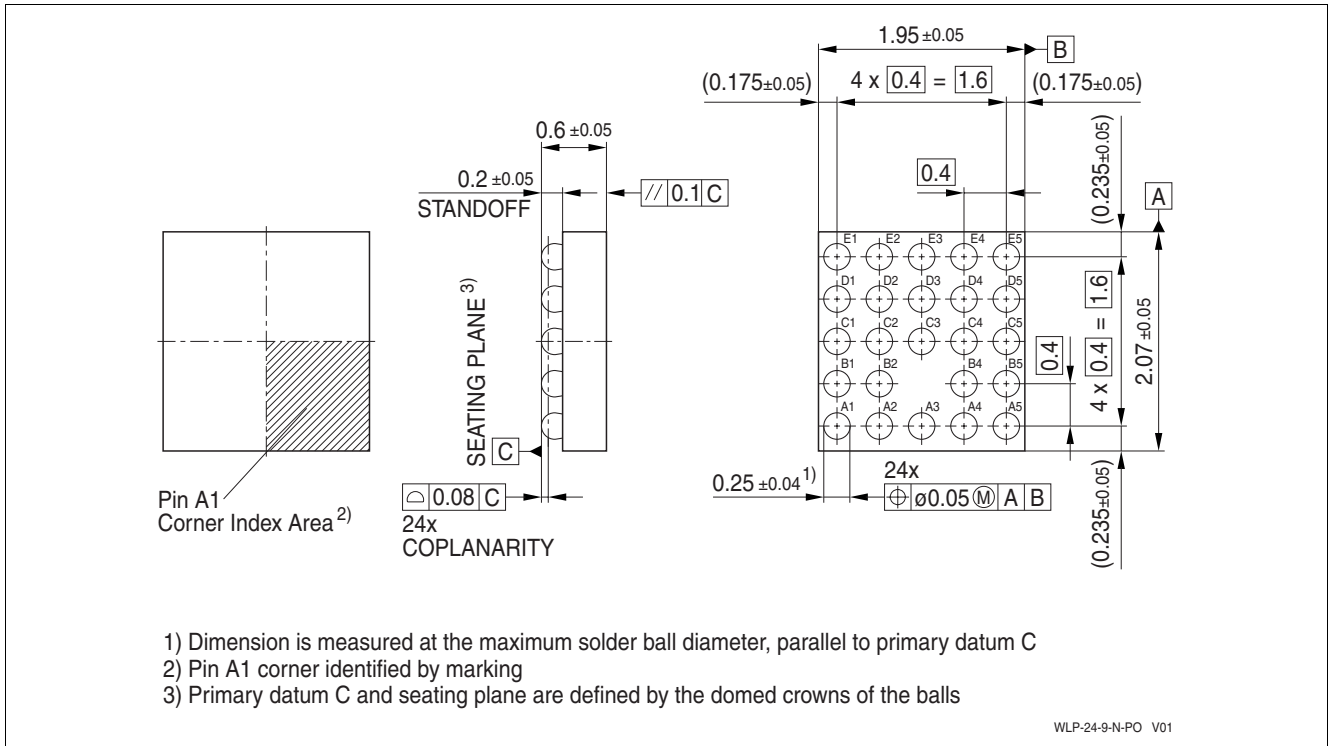


Figure 6 Package WLP-24-9

Tape and reel specification

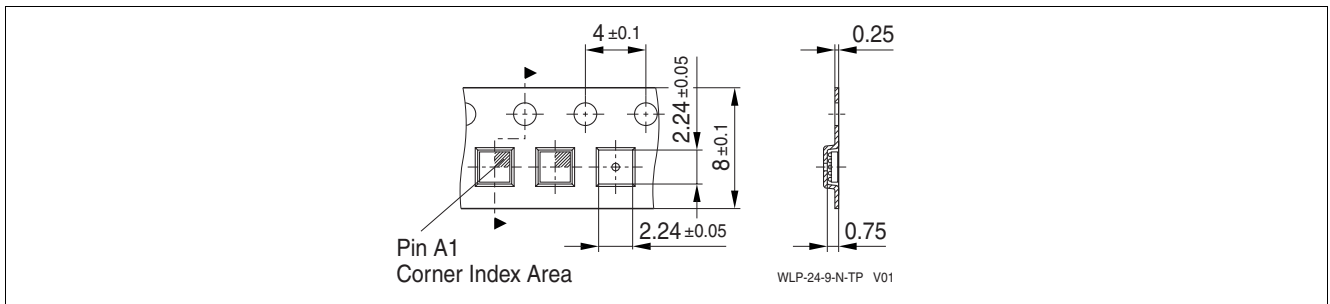


Figure 7 Tape for WLP-24-9