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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# BGF108L

7 Channel LCD Filter Array with ESD Protection

Small Signal Discretes



Never stop thinking

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**BGF108L**

**Revision History: 2008-10-23, V3.0**

**Previous Version: 2008-06-13, V2.0**

<b>Page</b>	<b>Subjects (major changes since last revision)</b>
All	Preliminary status removed
4	Feature, Description
5	Total dissipated power, Stopband attenuation, Cross talk
6	Figure 2

## 7 Channel LCD Filter Array with ESD Protection

### Feature

- 7 channel integrated 5th order LC filter array
- Enhanced filtering of mobile phone frequencies by LC filter
- ESD protection of  $\pm 15$  kV contact discharge on all IOs according to IEC61000-4-2
- Wafer Level Package with SnAgCu solder balls
- 400  $\mu$ m solder ball pitch
- RoHS and WEEE compliant package

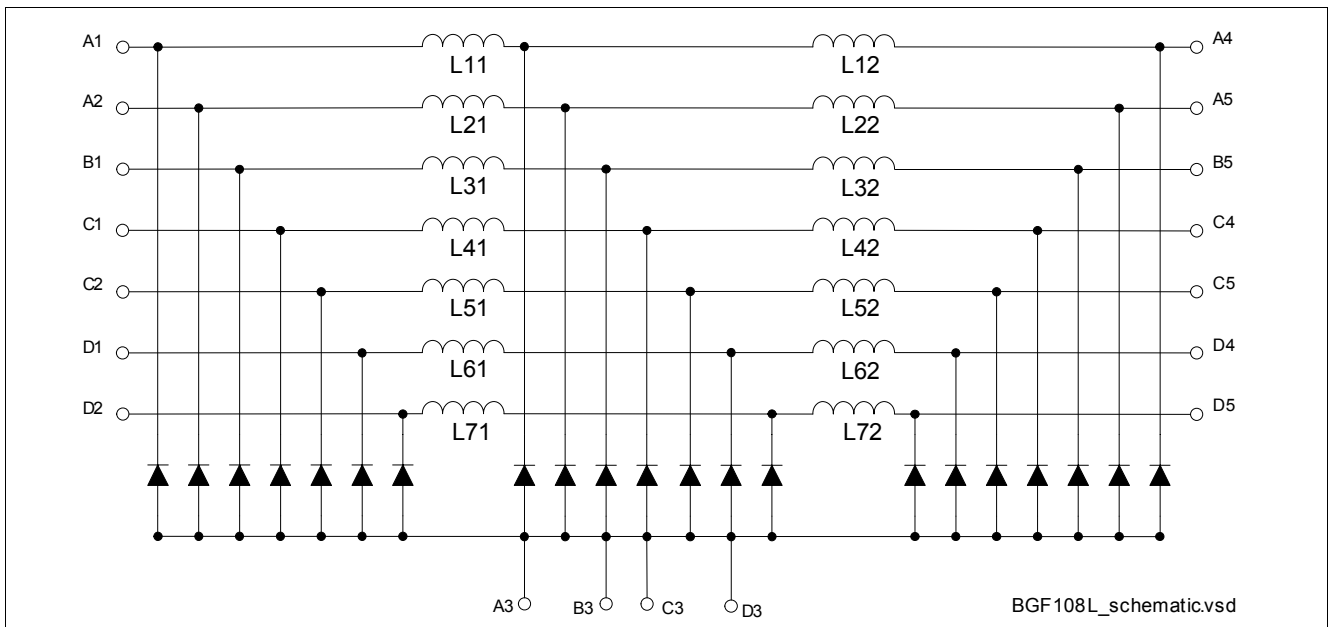


Figure 1 Schematic

### Description

BGF108L is a 7 channel 5th order LC filter array to provide superior signal attenuation in the 800 - 2200 MHz range. EMI filtering is very good regarding suppression of interference caused by high power TX signals or interference to RX frequency bands caused by data signal harmonics in mobile phones.

All pins are protected against ESD of  $\pm 15$  kV according to IEC61000-4-2 (contact discharge). The wafer level package is a green package with a size of only 2.1 mm x 1.7 mm and a total height of 0.6 mm.

Type	Package	Marking	Chip
BGF108L	WLP-18-2	BGF108L	N0737

## 7 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	$V_P$	0		+5	V	
Operating temperature range	$T_{OP}$	-40		+85	°C	
Storage temperature range	$T_{STG}$	-65		+150	°C	
DC current each line <sup>1)</sup>	$I_{DC}$			25	mA	$T_A < 85\text{ °C}$
Total dissipated power for all lines	$P_{diss}$			160	mW	$T_A < 85\text{ °C}$
Electrostatic discharge according to IEC61000-4-2 <sup>2)</sup> at all pins	$V_{ESD}$	-15		+15	kV	

1) Total dissipated power must not be exceeded

2) Contact discharge

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

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Series resistance $R_1... R_7$	$R$	68	90	112	$\Omega$	
Line capacitance of each line to GND	$C_T$	36	42.5 28	49	pF	$V_R = 0\text{ V}$ $V_R = 3\text{ V}$
Leakage currents of lines to GND	$I_R$			200	nA	$V_R = 3\text{ V}$
Breakdown voltage of ESD diodes	$V_{(BR)}$	6.5	7.8	-	V	$I_{(BR)} = 1\text{ mA}$
Stopband attenuation Input to output pin <sup>2)</sup>	$IL_{800}$ $IL_{2200}$		45 45		dB	$f = 800\text{ MHz}$ $f = 2200\text{ MHz}$
Cross talk between 2 adjacent channels with all pins terminated <sup>2)</sup>	$CT_{800}$ $CT_{2200}$		-45 -40		dB	$f = 800\text{ MHz}$ $f = 2200\text{ MHz}$

 1) at  $T_A = 25\text{ °C}$ 

 2)  $Z_S = Z_L = 50\ \Omega$ , 0 V bias

7 Channel LCD Filter Array with ESD Protection

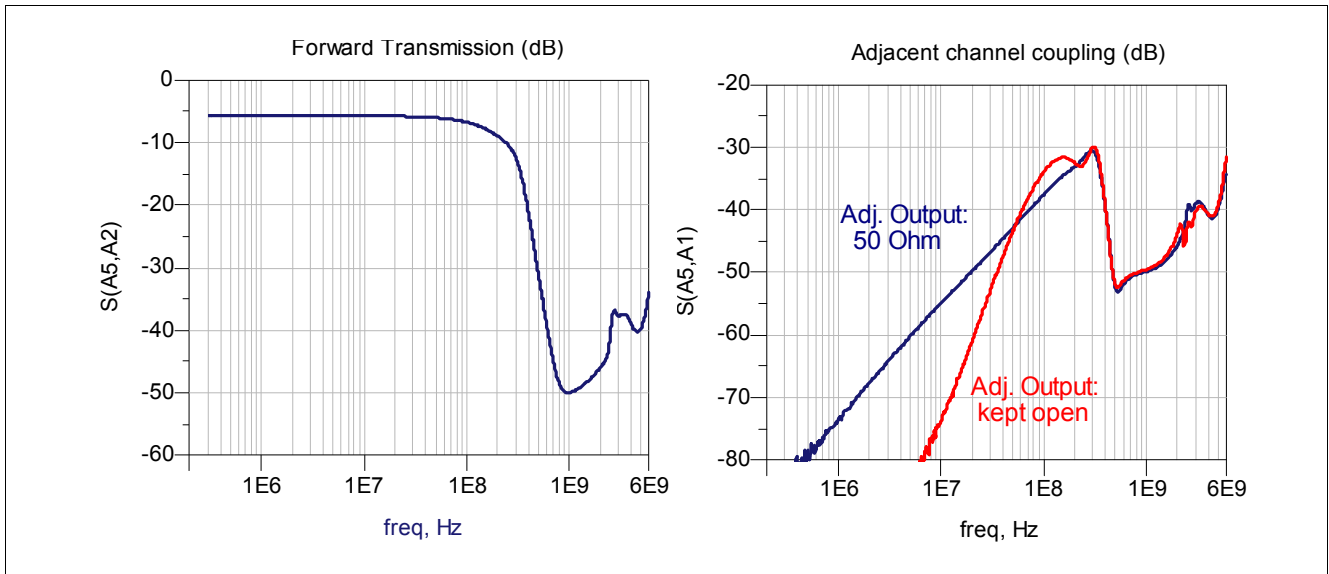


Figure 2 Filter characteristic of one channel and the crosstalk between adjacent channels with different termination

Package Outline

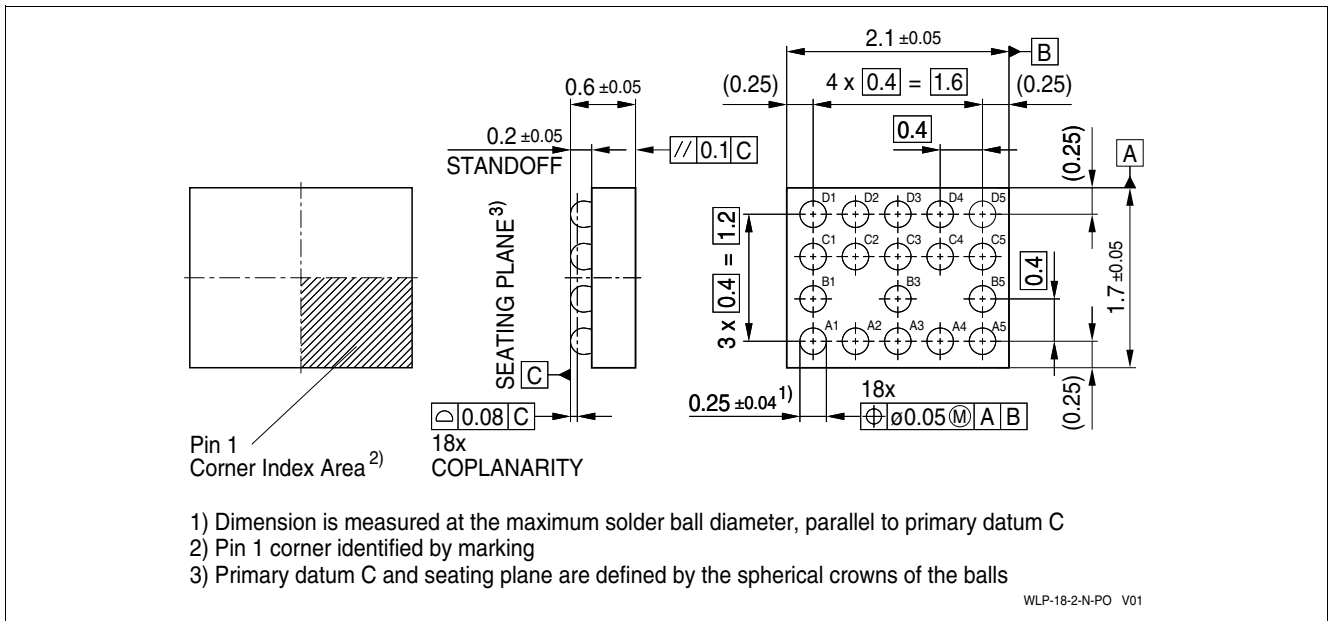


Figure 3 Package WLP-18-2 (dimensions in mm)

Tape and reel specification

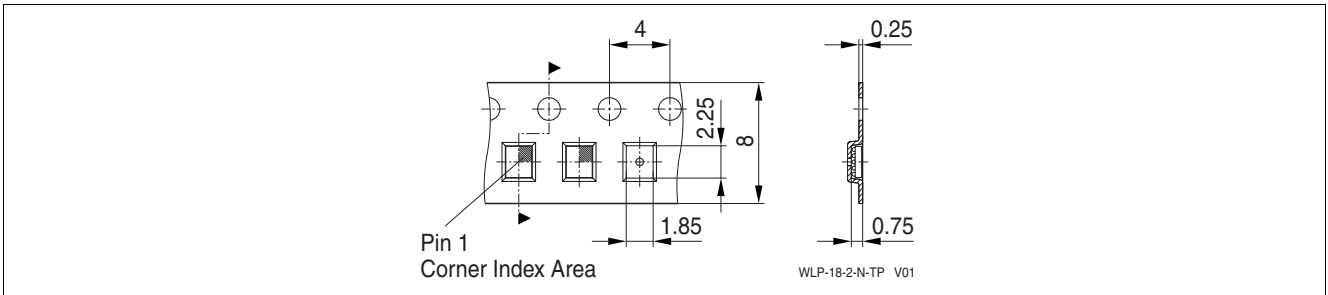


Figure 4 Tape for WLP-18-2 (dimensions in mm)