# BGF108L

7 Channel LCD Filter Array with ESD Protection

**Small Signal Discretes** 



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# BGF108L

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

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

Page	Subjects (major changes since last revision)				
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 ±15 kV contact discharge on all IOs according to IEC61000-4-2
- Wafer Level Package with SnAgCu solder balls
- 400 μm solder ball pitch
- · RoHS and WEEE compliant package





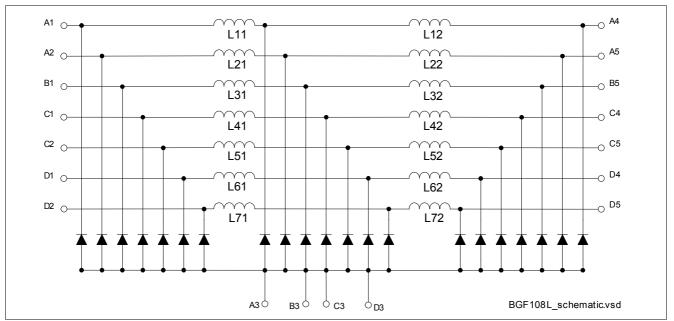


Figure 1 Schematic

## **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.

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



Table 1 Maximum Ratings

Parameter	Symbol	Values			Unit	Note /
		Min.	Тур.	Max.		<b>Test Condition</b>
Voltage at all pins to GND	$V_{P}$	0		+5	٧	
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 <sub>A</sub> < 85 °C
Total dissipated power for all lines	$P_{diss}$			160	mW	T <sub>A</sub> < 85 °C
Electrostatic discharge according to IEC61000-4-2 <sup>2)</sup> at all pins	$V_{ESD}$	-15		+15	kV	

<sup>1)</sup> Total dissipated power must not be exceeded

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

Parameter	Symbol	Values			Unit	Note /
		Min.	Тур.	Max.		<b>Test Condition</b>
Series resistance $R_1$ $R_7$	R	68	90	112	Ω	
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 <sub>R</sub> = 3 V
Breakdown voltage of ESD diodes	$V_{(BR)}$	6.5	7.8	-	V	$I_{(BR)}$ = 1 mA
Stopband attenuation Input to output pin <sup>2)</sup>	IL <sub>800</sub> IL <sub>2200</sub>		45 45		dB	f = 800 MHz f = 2200 MHz
Cross talk between 2 adjacent channels with all pins terminated <sup>2)</sup>	$CT_{800} \\ CT_{2200}$		-45 -40		dB	f = 800 MHz f = 2200 MHz

<sup>1)</sup> at  $T_{A} = 25 \,^{\circ}\text{C}$ 

<sup>2)</sup> Contact discharge

<sup>2)</sup>  $Z_{\rm S} = Z_{\rm L} = 50 \ \Omega$ , 0 V bias



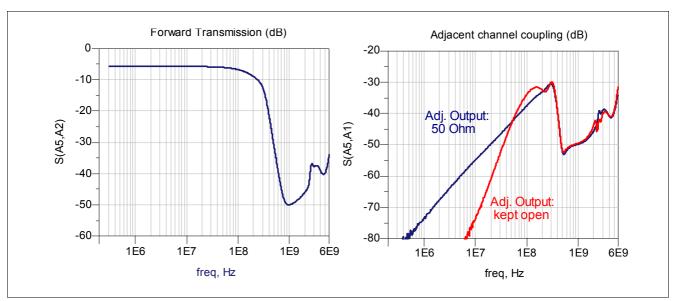


Figure 2 Filter characteristic of one channel and the crosstalk between adjacent channels with different termination

# **Package Outline**

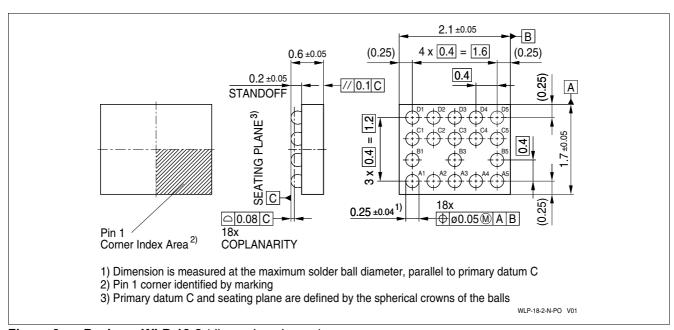


Figure 3 Package WLP-18-2 (dimensions in mm)



# Tape and reel specification

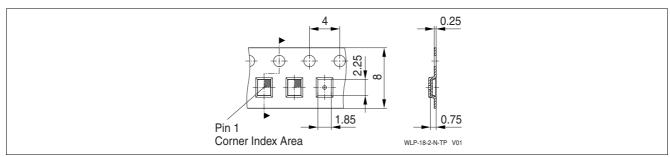


Figure 4 Tape for WLP-18-2 (dimensions in mm)