

BGF109L

10 Channel LCD Filter Array with ESD Protection

Small Signal Discretes



Never stop thinking

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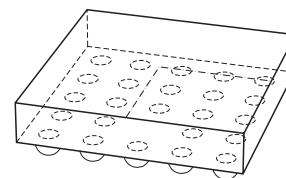
BGF109L**Revision History: 2008-05-20, V3.0****Previous Version: 2007-09-10, V2.1**

Page	Subjects (major changes since last revision)
5	Maximum ratings for DC current and power dissipation updated
5	Electrical characteristics for line resistance and capacitance updated
7	Package drawings updated

10 Channel LCD Filter Array with ESD Protection

Feature

- 10 channel integrated 5th order LC filter array
- Very good EMI compatibility
- 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



WLP-24-4-3D

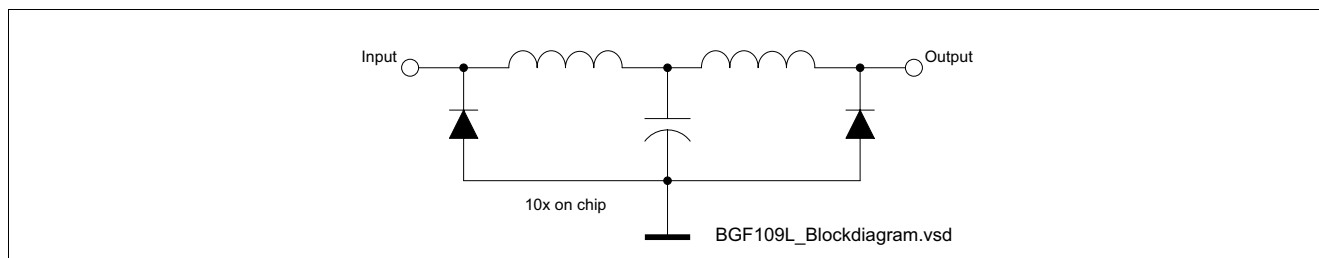


Figure 1 Blockdiagram

Description

The BGF109L is a 10 channel 5th order LC filter array to provide superior signal attenuation in the 800 - 2200 MHz range. EMI compatibility is very good in point of high power mobile TX signals. LCD data integrity will be much less affected by the mobile's TX signal.

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 2.1 mm x 2.1 mm and a total height of 0.6 mm.

Type	Package	Marking	Chip
BGF109L	WLP-24-4	BGF109L	N0729

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	0	-	5.0	V	
Operating temperature range	T_{OP}	-40	-	+85	°C	
Storage temperature range	T_{STG}	-65	-	+150	°C	
DC current for each line	I_{DC}		-	25	mA	$T_A < 85\text{ °C}$
Total dissipated power for all lines	P_{diss}		-	200	mW	$T_A < 85\text{ °C}$
Electrostatic discharge according to IEC61000-4-2 ¹⁾ at all pins	V_{ESD}	-15	-	+15	kV	

1) Contact discharge

Table 2 Electrical Characteristics¹⁾

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Series Resistors $R_1 \dots R_{10}$	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	$V_R = 3\text{ V}$
Breakdown voltage of ESD diodes	I_R	6.5	7.8	-	V	$I_{(BR)} = 1\text{ mA}$
Stopband attenuation Input of output pin ²⁾	IL_{800} IL_{2200}		45 35		dB	$f = 800\text{ MHz}$ $f = 2200\text{ MHz}$
Cross talk between adjacent channels 2 channel, all pins ²⁾	CT_{800} CT_{2200}		-30 -20		dB	$f = 800\text{ MHz}$ $f = 2200\text{ MHz}$

1) at $T_A = 25\text{ °C}$

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

10 Channel LCD Filter Array with ESD Protection

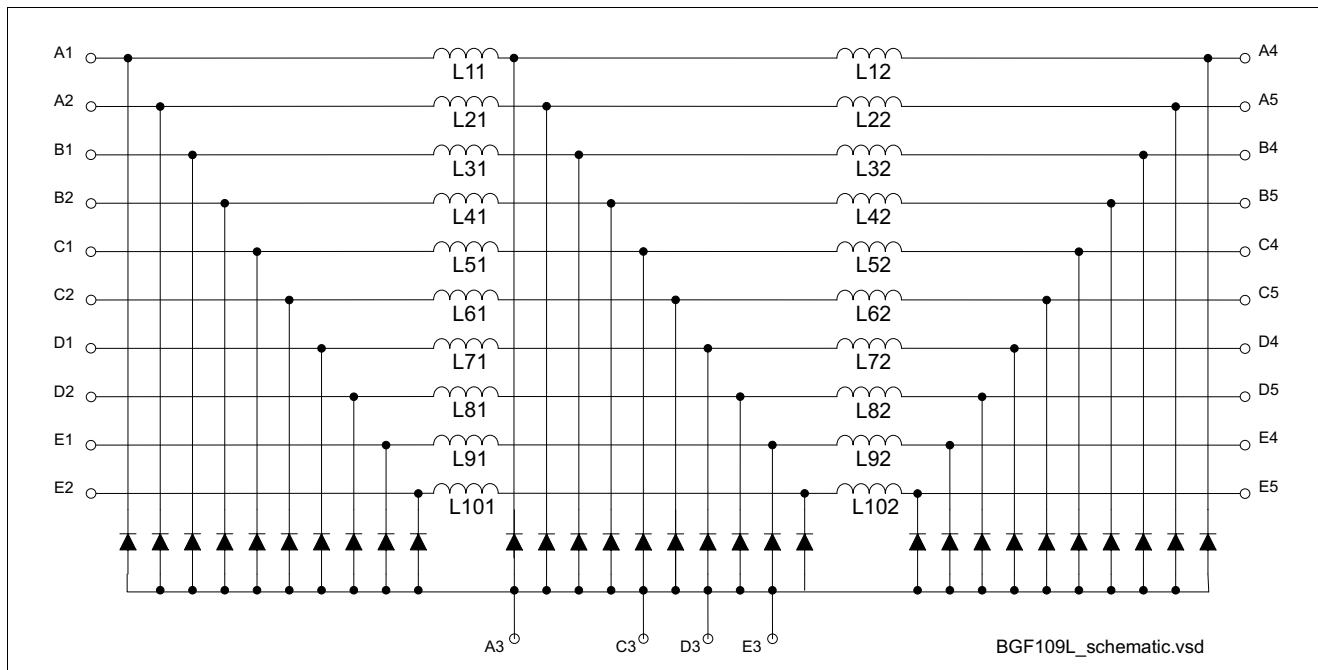


Figure 2 Schematic

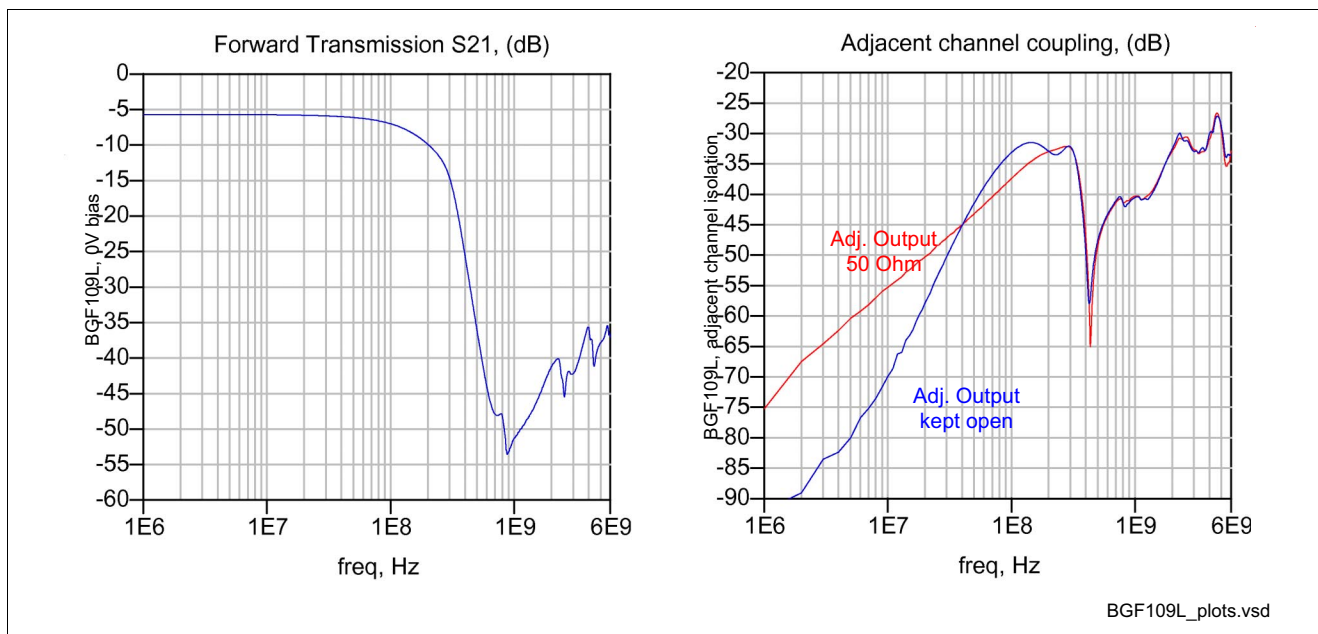


Figure 3 Filter characteristic of one channel and the crosstalk between adjacent channels with different termination

Package Outline



Technical drawing of the WLP-24-4-TP package showing top and side views with dimensions.

Top View Dimensions:

- Pin pitch: 4 ± 0.1
- Pin width: 2.24 ± 0.05
- Pin spacing (center-to-center): 2.24 ± 0.05
- Package width: 8 ± 0.1
- Package length: 2.24 ± 0.05

Side View Dimensions:

- Package thickness: 0.25
- Lead height: 0.75

Pin 1 Corner Index Area: Indicated by a dashed line and an arrow pointing to the top-left corner of the package.

WLP-24-4-TP V01

Figure 5 **Tape for WLP-24-4**