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

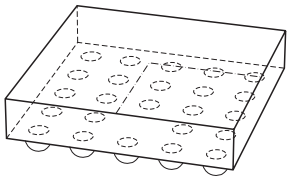
Previous Version: 2007-09-10, V2.1

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 other 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

RoHS

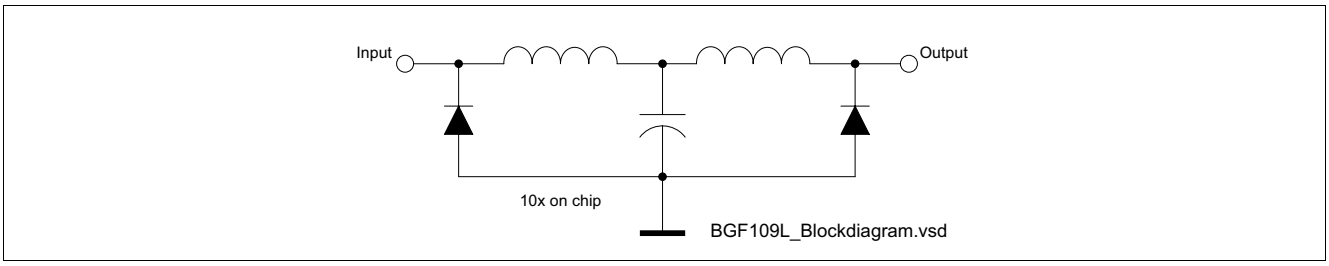


Figure 1 Blockdiagram

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

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 °C
Total dissipated power for all lines	P_{diss}		-	200	mW	T_A < 85 °C
Electrostatic discharge according to IEC61000-4-2[1)] at all pins	V_{ESD}	-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	68	90	112	Ω	
Line capacitance of each line to GND	C_T	36	42.5 28	49	pF	V_R = 0 V V_R = 3 V
Leakage currents of lines to GND	I_R			200	nA	V_R = 3 V
Breakdown voltage of ESD diodes	I_R	6.5	7.8	-	V	$I_{(BR)}$ = 1 mA
Stopband attenuation Input of output pin[2)]	IL_{800} IL_{2200}		45 35		dB	f = 800 MHz f = 2200 MHz
Cross talk between adjacent channels 2 channel, all pins[2)]	CT_{800} CT_{2200}		-30 -20		dB	f = 800 MHz f = 2200 MHz

1) at T_A = 25 °C

2) Z_S = Z_L = 50 Ω, 0 V bias

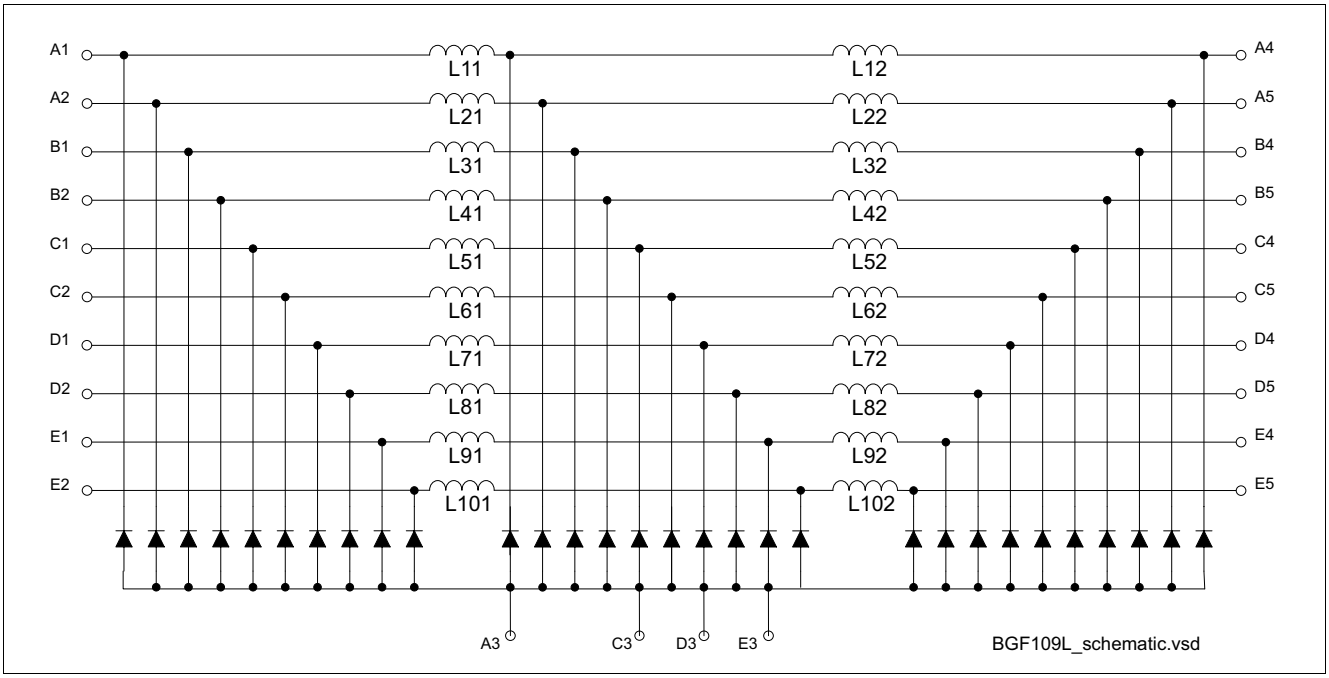


Figure 2 Schematic

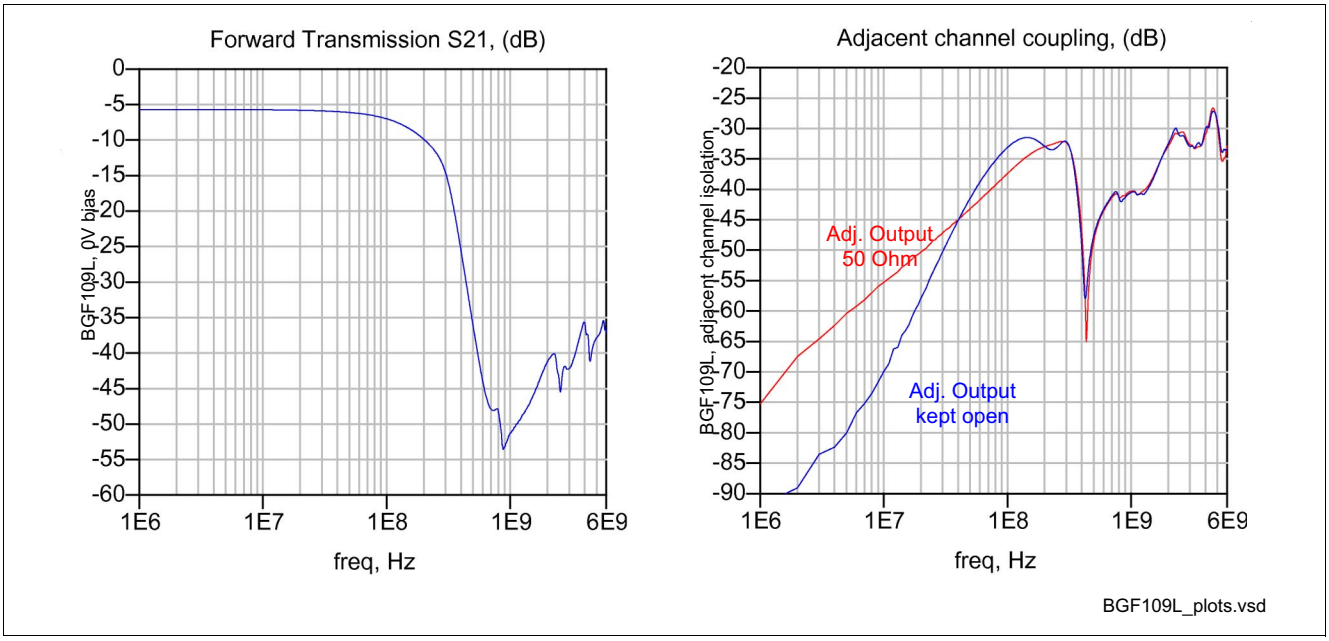


Figure 3 Filter characteristic of one channel and the crosstalk between adjacent channels with different termination

Package Outline

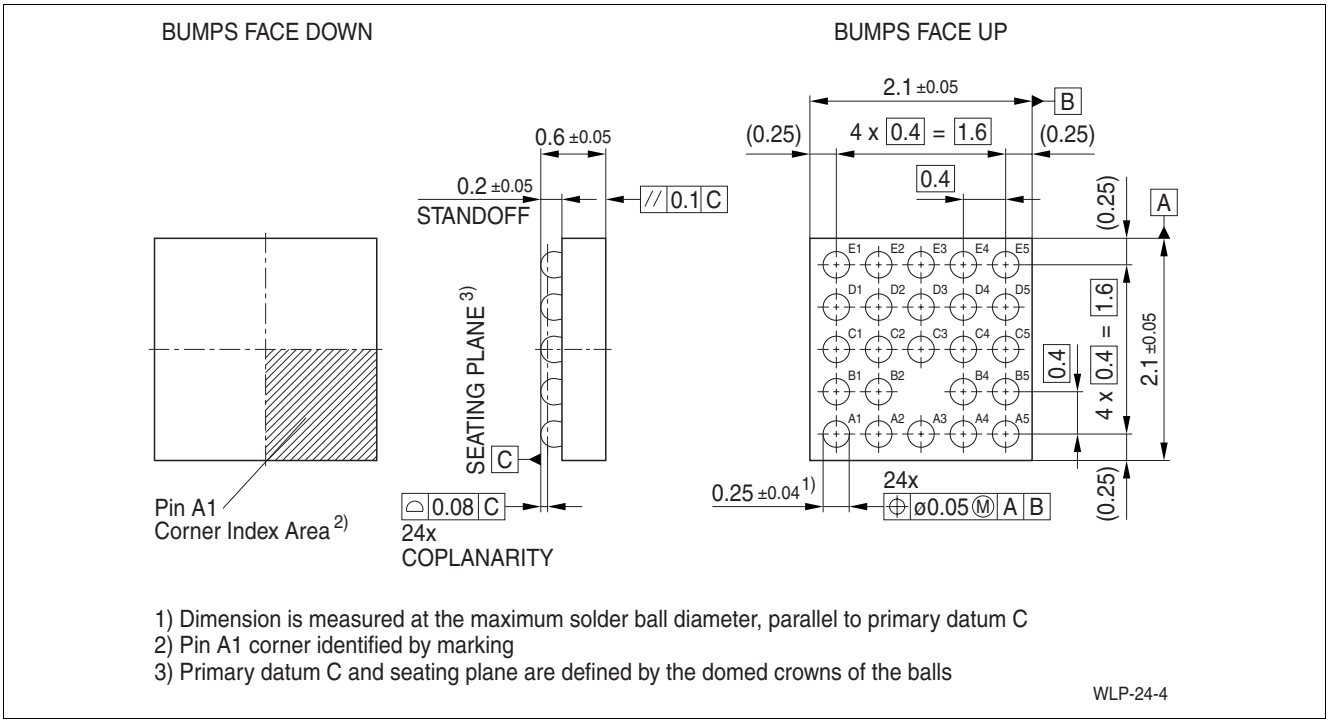


Figure 4 Package WLP-24-4

Tape and reel specification

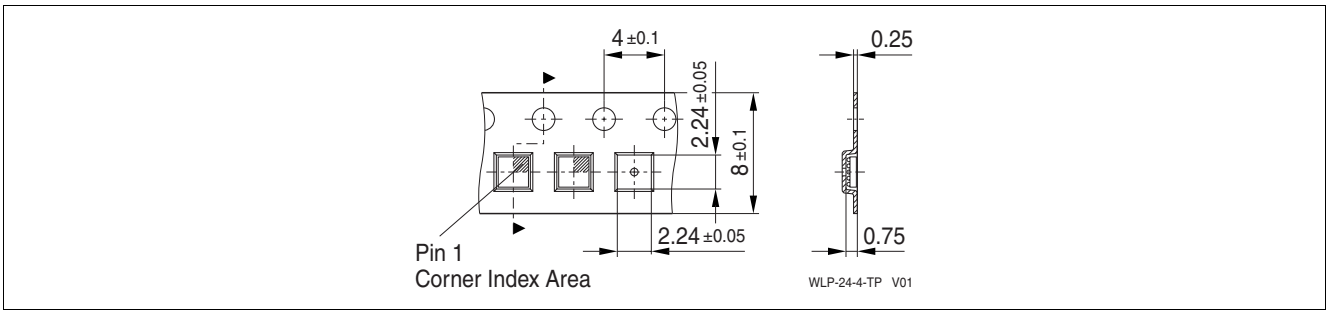


Figure 5 Tape for WLP-24-4