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BGF104

HSMMC Interface Filter and ESD Protection

Small Signal Discretes

Never stop thinking

Edition 2006-10-17

Published by
Infineon Technologies AG
81726 München, Germany

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BGF104

Revision History: 2006-10-17, V2.1

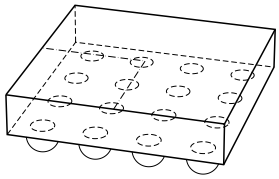
Previous Version: 2006-03-03

Page	Subjects (major changes since last revision)
All	Layout conformation

HSMMC Interface Filter and ESD Protection

Feature

- ESD protection and filter for High Speed Multi Media Card interface
- ESD protection up to 15 kV at the external IOs
- 16 pin green wafer level package with SnAgCu solder balls
- 500 µm solder ball pitch
- 300 µm solder ball diameter



WLP-16-1

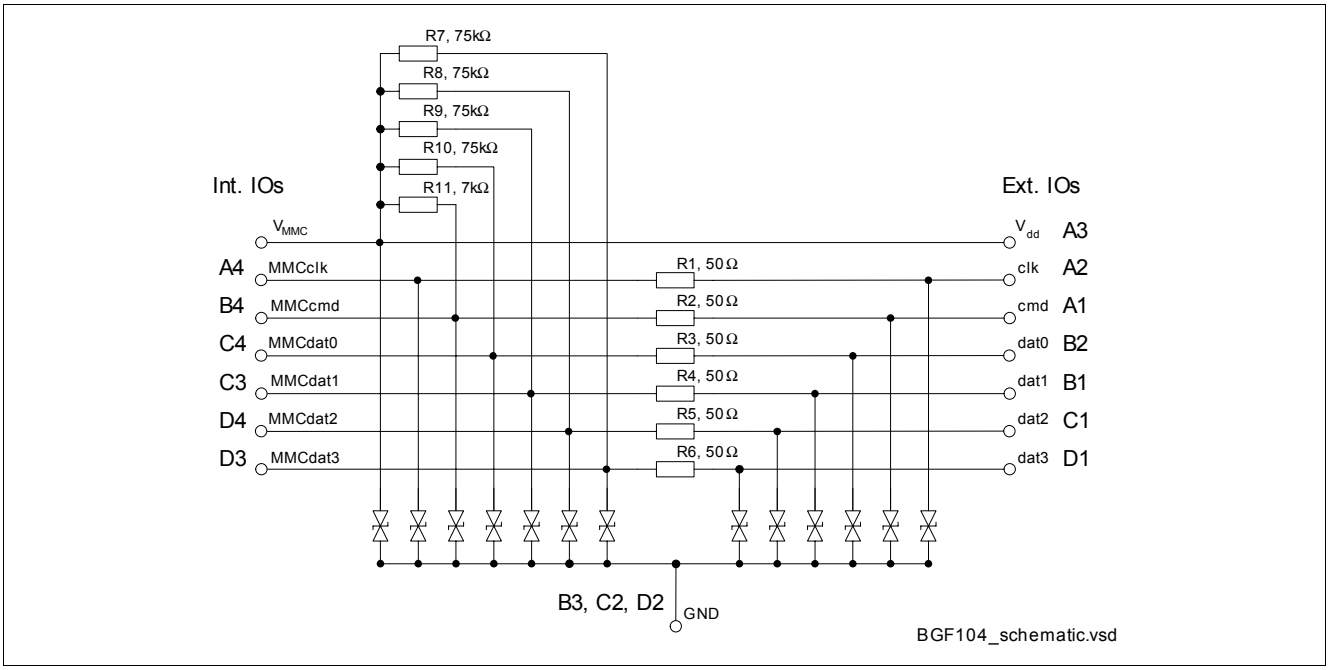


Figure 1 Blockdiagram

Description

The BGF104 is an ESD protection and filter circuit for a high speed multi media card interface. External pins are protected up to 15 kV contact discharge according to IEC61000-4-2. The wafer level package is a green package with a size of only 1.96 mm x 1.96 mm and a total height of 0.65 mm.

Type	Package	Marking	Chip
BGF104	WLP-16-1	BGF104	N0708

Table 1 Maximum Ratings

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Voltage at all pins to GND	V_P	-14		14	V	
Operating temperature range	T_{OP}	-40		+85	°C	
Storage temperature range	T_{STG}	-65		+150	°C	
Electrostatic Discharge According to IEC61000-4-2						
Ext.IOs: A1, A2, A3, B1, B2, C1, D1	V_E	-15		15	kV	
Int. IOs: A4, B4; C3, C4, D3, D4	V_I	-2		2	kV	

Table 2 Electrical Characteristics[1)]

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Resistors $R_1...R_6$	$R_{1...6}$	40	50	60	Ω	
Resistors $R_7...R_{10}$	$R_{7...10}$	52.5	75	97.5	kΩ	
Resistor R_{11}	R_{11}	4.9	7	9.1	kΩ	
Reverse current of ESD protection diodes	I_R		5 0.1	100 10	nA µA	V_R = 3 V V_R = 14V
Line capacitance Capacitance of each line to GND	C_T		16	20	pF	V_R = 0 V

1) at T_A = 25 °C

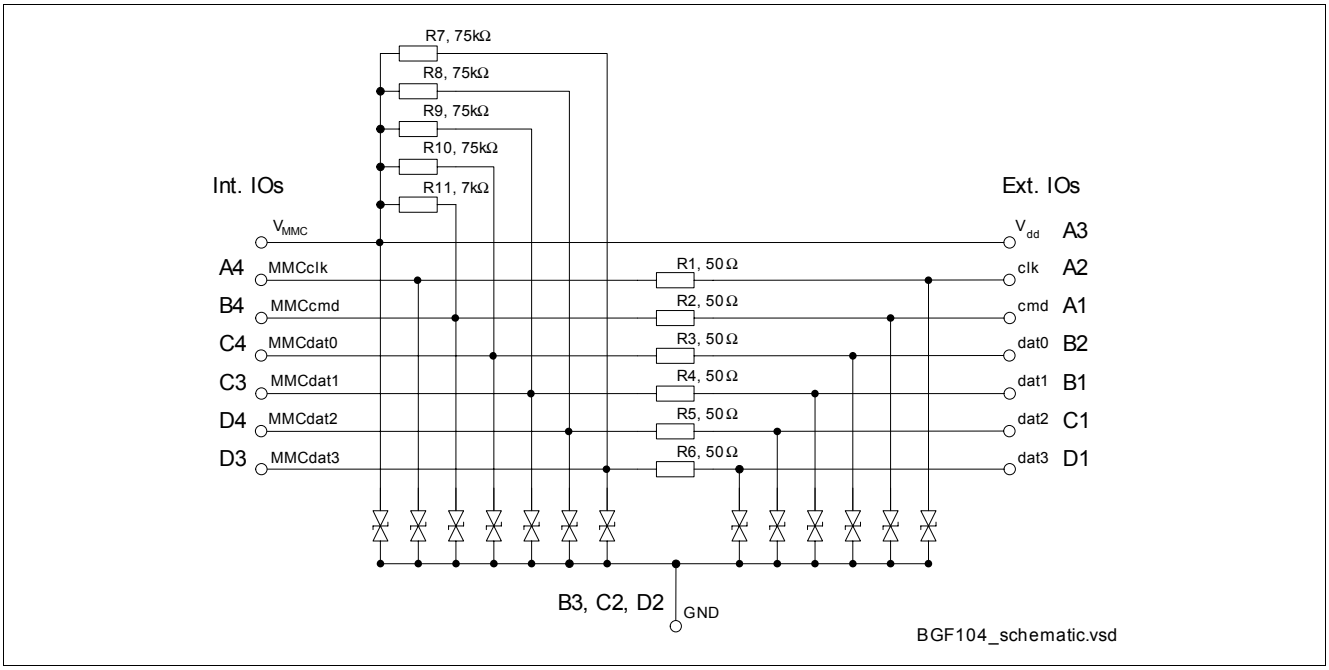
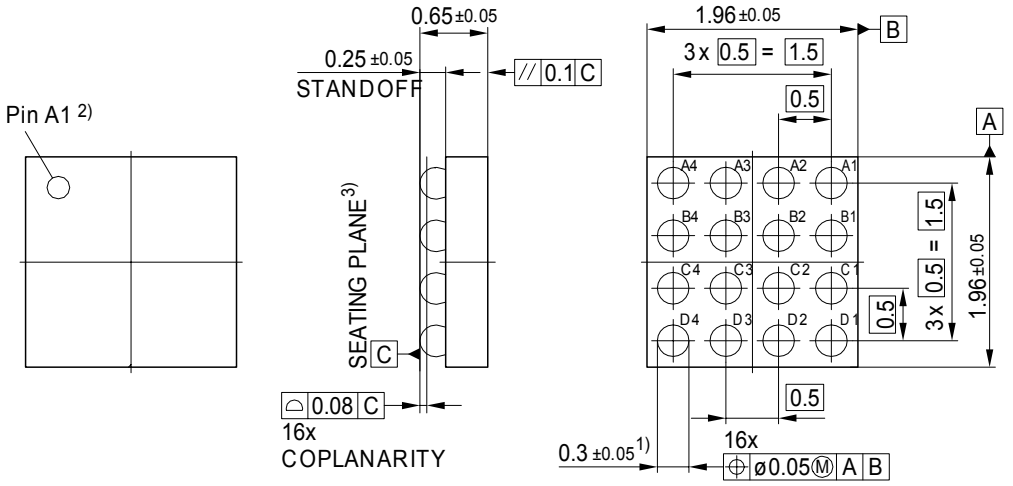


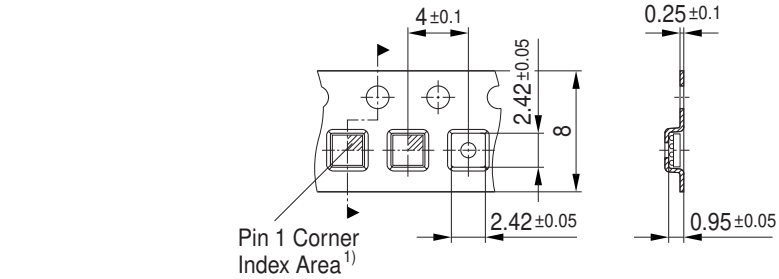
Figure 2 Schematic



1) Dimension is measured at the maximum solder ball diameter, parallel to primary datum C
2) Pin A1 corner identified by marking
3) Primary datum C and seating plane are defined by the spherical crowns of the balls

GWLN1057

Figure 3 Package Outline WLP-16-1



1) Balls face down

CWLG1065

Figure 4 Tape for WLP-16-1