TV-Out Filter and ESD Protection

**Small Signal Discretes** 



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**Revision History: 2008-05-28, V2.0** 

Previous Version: 2007-04-26

Page	Subjects (major changes since last revision)
All	Preliminary status removed



# **BGF111**

#### **Features**

- TV-Out Filter
- · Wafer level package with SnAgCu solder balls
- Integrated ESD protection up to 15 kV contact discharge according to IEC61000-4-2
- · Low bias voltage dependency of low pass frequency
- RoHS and WEEE compliant package



WLP-4-1-3D



## **Description**

BGF111 is a 75  $\Omega$  TV-Out filter with low pass characteristic offering a high stop band attenuation up to 6 GHz in mobile phone, consumer and IT applications. Wafer technology is optimized to provide low variation of the low pass frequency versus bias voltage. ESD protection at both pins exceeds 15 kV contact discharge according to IEC61000-4-2. The wafer level package is a green leadfree package with a size of only 0.75 mm x 0.75 mm and a total height of 0.6 mm.

Туре	Package	Marking	Chip
BGF111	WLP-4-1	11	N0724

Table 1 Maximum Ratings

Parameter	Symbol	Values			Unit	Note /
		Min.	Тур.	Max.		<b>Test Condition</b>
Voltage at all pins to GND		0	_	5	V	_
Operating temperature range	$T_{OP}$	-40	_	85	°C	_
Storage temperature range	$T_{STG}$	-65	_	150	°C	_
DC current A1 to B1	$I_{\sf max}$	_	_	35	mA	_
Electrostatic Discharge According to IE	EC61000-4-2		,	'		<u>'</u>
Contact discharge between all pins	$V_{ESD}$	-15	_	+15	kV	_

Table 2 Electrical characteristics at  $T_A = 25$ °C

Parameter	Symbol	Values			Unit	Note /
		Min.	Тур.	Max.		<b>Test Condition</b>
Resistor R1	$R_1$	71.25	75	78.75		_
Leakage currents, A1 or B1 to GND	$I_{R}$	-	0.1 0.1	120 120	nA μA	$V_{\rm R}$ = ±3 V $V_{\rm R}$ = ±14 V
Line capacitance to GND	$C_{L}$	_	44	_	pF	V = 0 V
Insertion loss at 0 V bias voltage Pin A1 to B1	IL	_	30	_	dB	f = 0.8 2  GHz, $Z_S = Z_L = 75 \Omega$



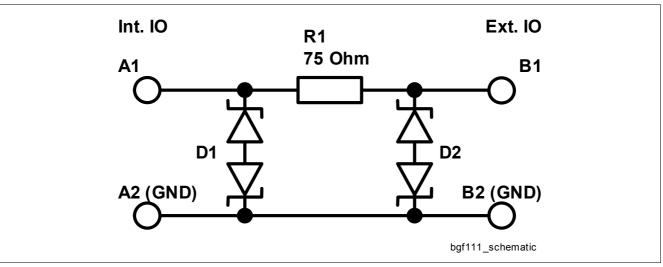


Figure 1 Schematic

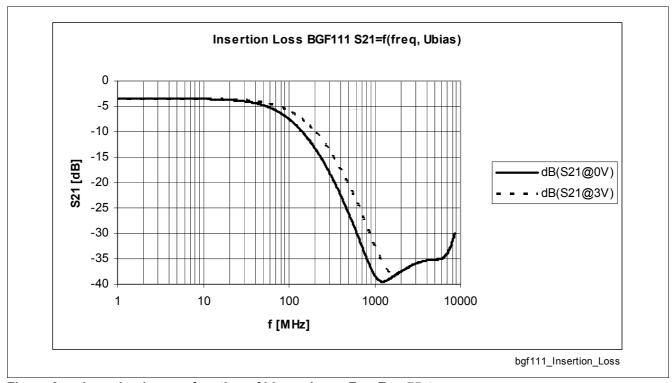


Figure 2 Insertion loss as function of bias voltage,  $Z_S = Z_L = 75 \Omega$ 



# **Package Outline**

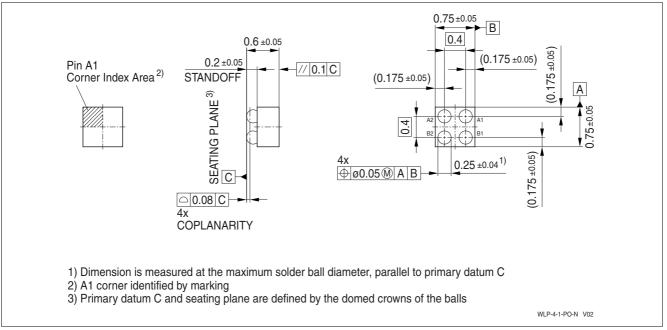


Figure 3 Package outline

## Tape for BGF111

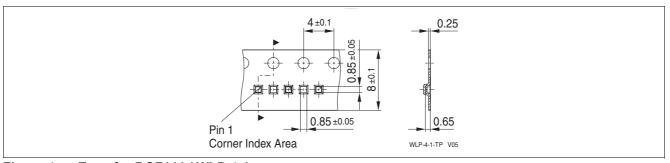


Figure 4 Tape for BGF111 / WLP-4-1

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