BGF119

Transient Voltage Suppressor

Small Signal Discretes



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BGF119

Revision History: 2008-11-18, V3.0

Previous Version: 2008-10-20, V2.0

1 Tevious Version. 2000-10-20, V2.0						
Page	Subjects (major changes since last revision)					
6	Updated Figure 3					
All	Target status removed					



Transient Voltage Suppressor

Features

- · 1 channel TVS diode designed for portable application
- ESD protection according to IEC61000-4-2 for +/-15 kV contact discharge on all IOs
- Wafer Level Package with SnAgCu solder balls
- RoHS and WEEE compliant package
- Very small form factor

TVS

- High peak pulse power
- Stand-off voltage up to 8 V
- Low clamping voltage factor Vcl/Vbr
- · Fast response time



Description

The BGF119 is a single line TVS diode designed for transient voltage and power overstress suppression. All pins are protected against ESD pulses of 15kV contact discharge according to IEC61000-4-2. The wafer level package is a green package with a size of only 0.75 mm x 0.75 mm and a total height of 0.60 mm.

Туре	Package	Marking	Chip
BGF119	WLP-4-1	BGF119	N0742



WLP-4-1-3D



Table 1 Maximum Ratings

Parameter	Symbol	l Values			Unit	Note /
		Min.	Тур.	Max.		Test Condition
Voltage at all pins to GND	V_{P}	0		8	V	
Operating temperature range	T_{OP}	-30		+85	°C	
Storage temperature range	T_{STG}	-55		+150	°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 /
		Min.	Тур.	Max.		Test Condition
Line capacitance to GND	C_{T}		230		pF	<i>V</i> _R = 0 V
Forward voltage	$V_{F}^{2)}$			1.1	V	$I_{\rm F}$ = 850 mA
Break down voltage	V_{BR}	10	10 11 12	12	V	$I_{\rm R}$ = 15 mA $T_{\rm A}$ = -30°C $T_{\rm A}$ = 25°C $T_{\rm A}$ = 85°C
Clamping voltage during transient	$V_{CL}^{3)}$			13	V	<i>I</i> _R = 1 A
Leakage current of line to GND	I_{R}		1 10 100	800	nA	$V_{\rm R}$ = 8 V $T_{\rm A}$ = -30°C $T_{\rm A}$ = 25°C $T_{\rm A}$ = 85°C

¹⁾ Otherwise specified at $T_{\rm A}$ = 25 °C

³⁾ $8/20 \mu s$ pulse waveform according to IEC61000-4-5

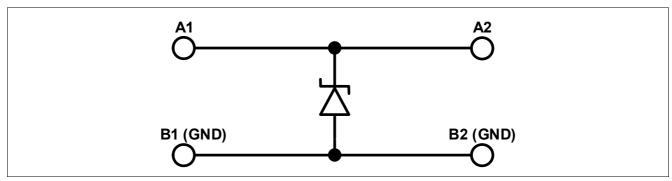


Figure 1 Schematic

²⁾ To avoid high temperature and possible disassembling of component from the board, DC current operation to be limited to few seconds



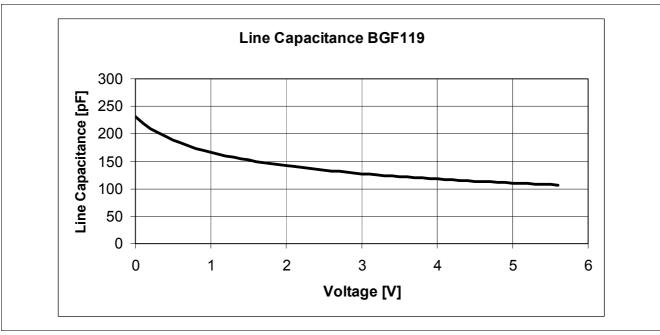


Figure 2 Line capacitance versus reverse voltage (typical values) at 25°C

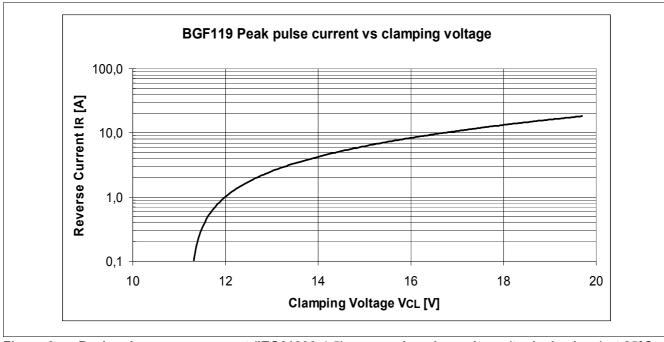


Figure 3 Peak pulse reverse current (IEC61000-4-5) versus clamping voltage (typical values) at 25°C



Package Outline

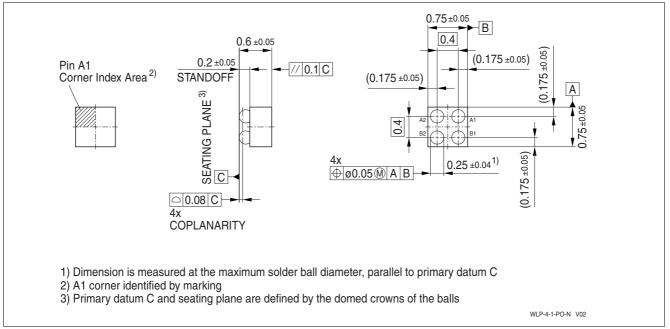


Figure 4 Package WLP-4-1

Tape and reel specification

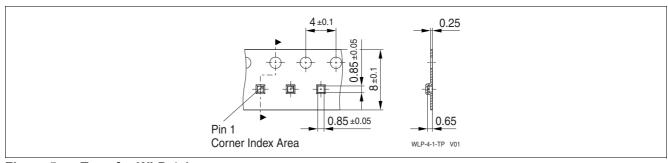


Figure 5 Tape for WLP-4-1