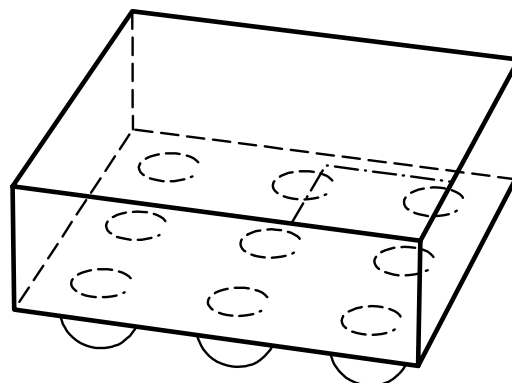
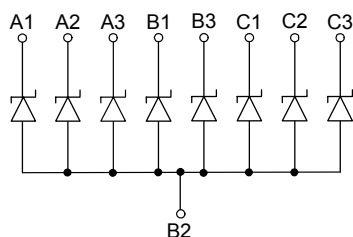


Low Capacitance ESD protection array

- 8-channel ESD protection according to:
IEC61000-4-2 (ESD): ± 25 kV (contact)
- Max. working voltage: 5.3 V
- Very low capacitance < 1.0 pF typ.
- Very low reverse current < 1 nA typ.
- Wafer level package with SnAgCu solder balls


WLP-9-1-N
BGF127


Type	Package	Configuration	Marking
BGF127	WLP-9-1	8 channels, uni-directional	27

Maximum Ratings at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Value	Unit
ESD contact discharge ¹⁾	V_{ESD}	± 25	kV
Operating temperature range	T_{op}	$-30 \dots 85$	$^\circ\text{C}$
Storage temperature	T_{stg}	$-55 \dots 150$	

¹⁾ V_{ESD} according to IEC61000-4-2

Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

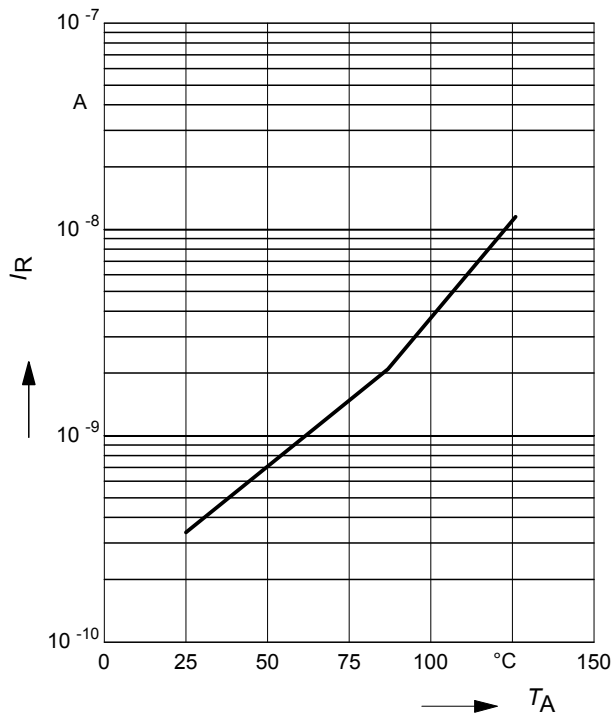
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Characteristics					
Reverse working voltage	V_{RWM}	-	-	5.3	V
Breakdown voltage $I_{(BR)} = 1 \text{ mA}$	$V_{(BR)}$	6	-	-	
Reverse current $V_R = 5.3 \text{ V}$	I_R	-	<1	10	nA
Clamping voltage $I_{PP} = 1 \text{ A}, t_p = 8/20 \text{ }\mu\text{s}^{1)}$ $I_{PP} = 6 \text{ A}, t_p = 8/20 \text{ }\mu\text{s}^{1)}$	V_{CL}	- -	9.9 17	- -	V
Forward clamping voltage $I_{PP} = 1 \text{ A}, t_p = 8/20 \text{ }\mu\text{s}^{1)}$ $I_{PP} = 6 \text{ A}, t_p = 8/20 \text{ }\mu\text{s}^{1)}$	V_{FC}	- -	1.8 5.6	- -	
Line capacitance ²⁾ $V_R = 3 \text{ V}, f = 1 \text{ MHz}$ Capacitance variation between the 8 channels	C_T	- -	0.9 0.01	1.5 -	
Dynamic resistance ($t_p=30\text{ns}$)	R_D	-	1	-	Ω

¹ I_{pp} according to IEC61000-4-5

²Total capacitance line to ground

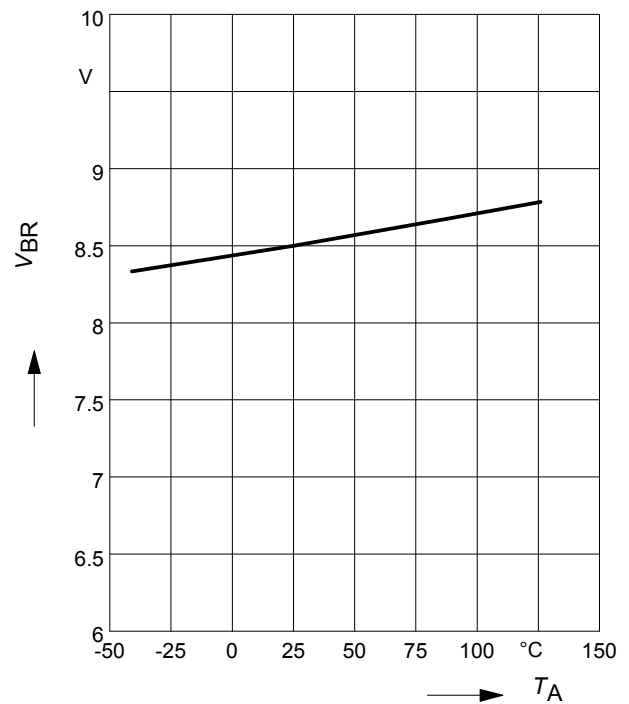
Reverse current $I_R = f(T_A)$

$V_R = \text{Parameter}$



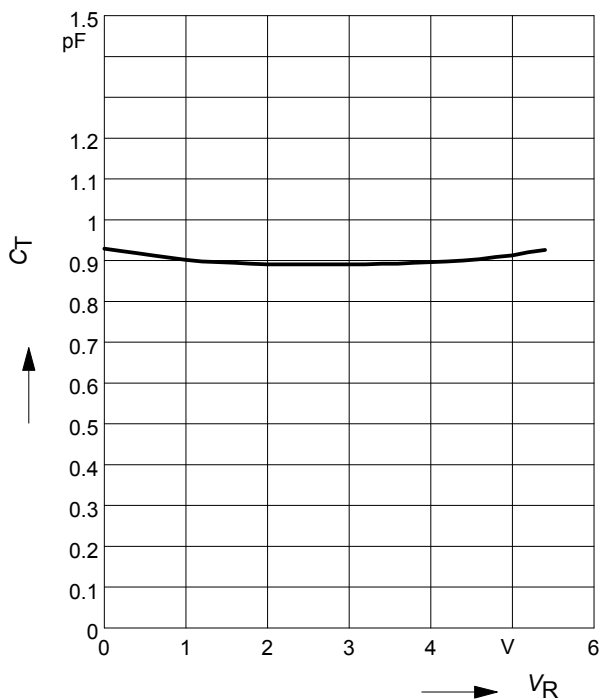
Breakdown voltage $V_{BR} = f(T_A)$

$I_R = 1 \text{ mA}$



Line capacitance $C_T = f(V_R)$

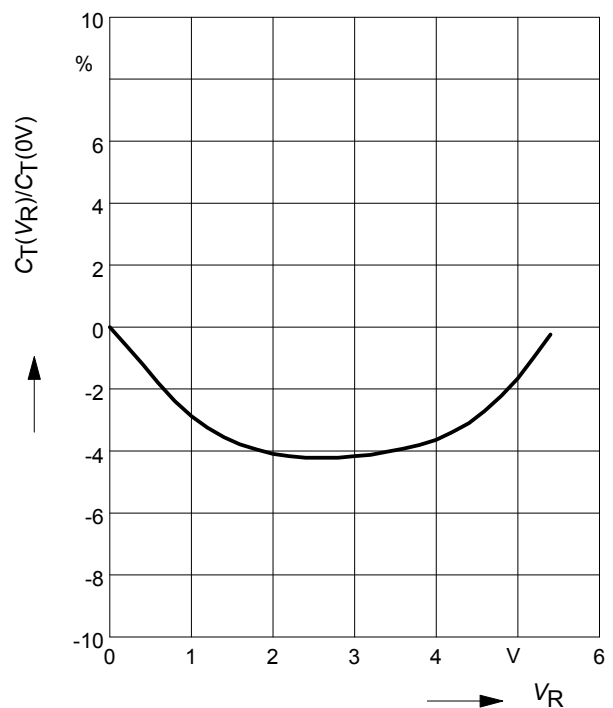
$f = 1 \text{ MHz}$



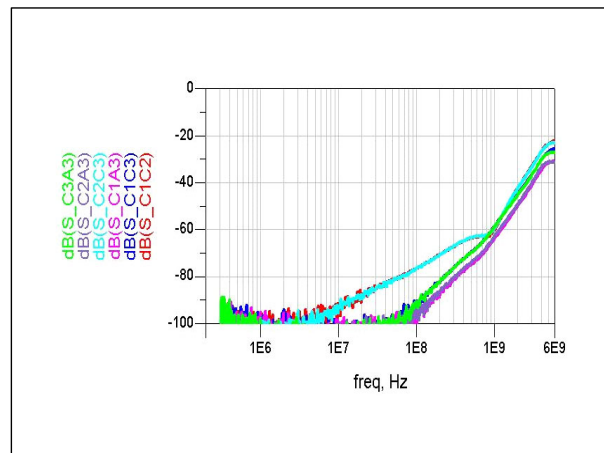
Change of Line capacitance

$C_T(V_R) / C_T(0V) = f(V_R)$

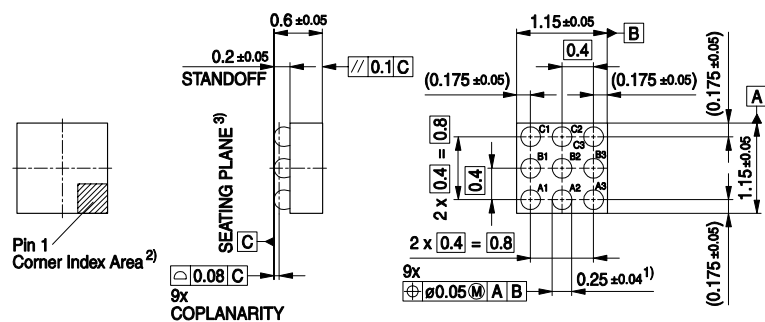
$f = 1 \text{ MHz}$



Typical cross talk



Package outline WLP-9-1



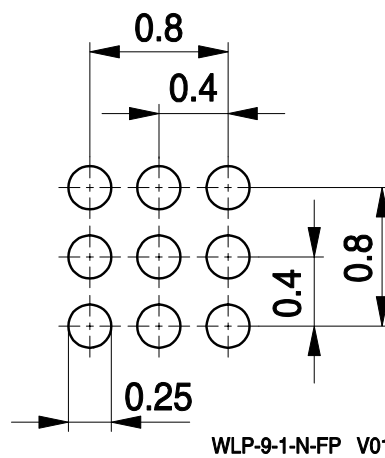
1) Dimension is measured at the maximum solder ball diameter, parallel to primary datum C

2) A1 corner identified by marking

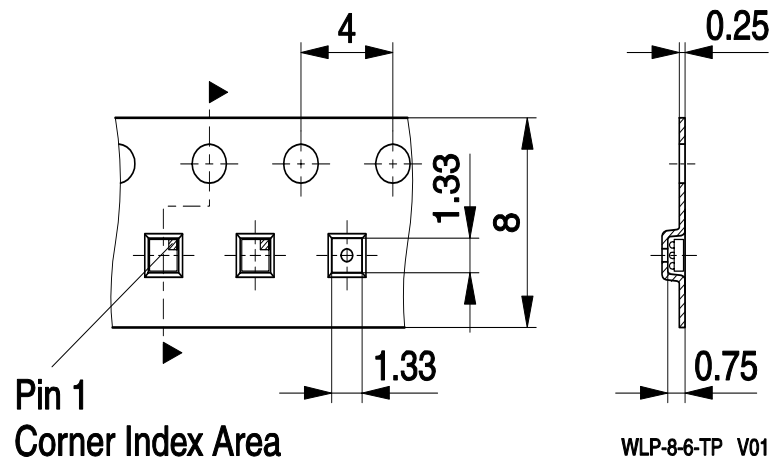
3) Primary datum C and seating plane are defined by the domed crowns of the balls

WLP-9-1-N-PO V01

Footprint



Tape and reel specification for WLP-9-1



Edition 2006-02-01

Published by

Infineon Technologies AG

81726 München, Germany

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