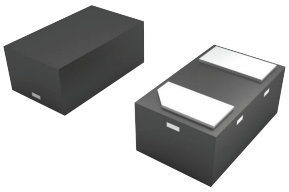
ESDUDS03BF

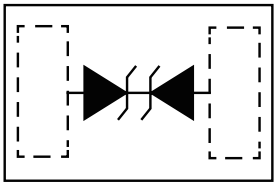
ESD Protection Diodes

Rev.01 - 25 January 2024 Product data sheet

1. General description

The ESDUDS03BF is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and low capacitance. The ESDUDS03BF is suited for using in cellular phones, portable device, digital cameras, power supplies and many other portable applications.





2. Features and benefits

- DFN1006 package
- Bidirectional ESD protection of one line
- Extremely low diode capacitance
- Extremely low clamping voltage to protect sensitive I/Os
- Extremely low inductance protection path to ground
- IEC 61000-4-2 (ESD) ±20kV(air), ±12kV(contact)
- Halogen free and RoHS compliant

3. Applications

- Cell Phone Handsets and Accessories
- Personal Digital Assistants
- Notebooks / Desktops / Servers
- Digital Visual Interfaces (DVI)
- Display Ports (DP)
- HDMI1.3/1.4/2.0
- USB2.0/3.0/3.1

4. Absolute maximum ratings

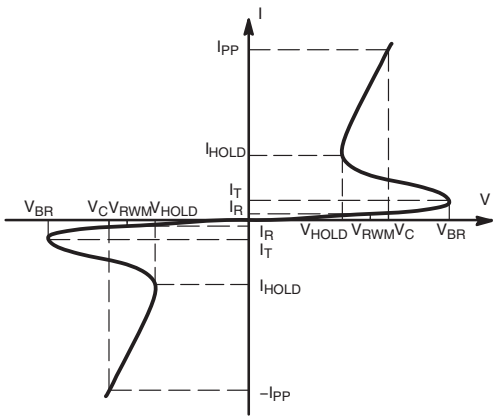
In accordance with the Absolute Maximum Rating System (IEC 60134).
T_j = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions	Values	Unit
Absolute maximum rating				
I_{PP}	peak pulse current	t_p = 8/20 µs	5	A
V_{ESD}	ESD per IEC 61000-4-2 (air) ESD per IEC 61000-4-2 (contact)		±20 ±12	kV kV
T_{stg}	storage temperature range		-55 to 150	°C
T_j	operating temperature range		-55 to 150	°C

5. Characteristics

T_j = 25 °C unless otherwise specified.

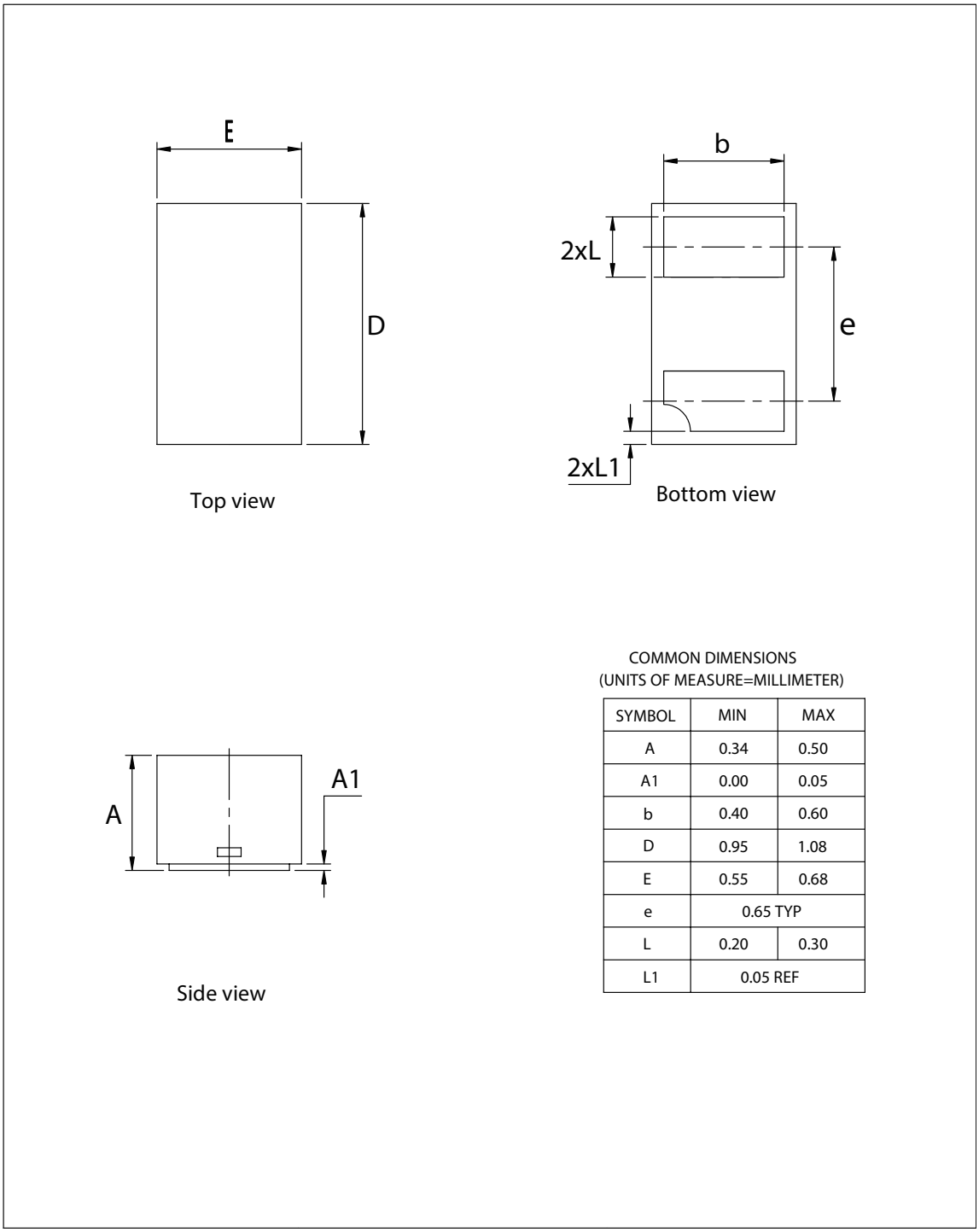
Symbol	Parameter
V_{RWM}	Reverse Working Voltage
V_{BR}	Reverse Breakdown Voltage
I_R	Reverse Leakage Current
I_T	Tect current
V_H	Holding Reverse Voltage
I_{PP}	Peak Pulse Current
V_C	Clamping Voltage



Symbol	Parameter	Condition	Min	Typ	Max	Unit
V_{RWM}	Reverse Working Voltage		-	-	3.3	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1 mA	3.6	-	-	V
I_R	Reverse Leakage Current	V_{RWM} = 3.3 V	-	-	1	µA
V_H	Holding Reverse Voltage		2	-	-	V
V_C	Clamping Voltage	I_{PP} = 5 A; t_p = 8/20 µs	-	-	10	V
C_J	Junction Capacitance	V_R = 0 V; f = 1 MHz	-	-	0.4	pF

6. Package outline

DFN1006



COMMON DIMENSIONS
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	MAX
A	0.34	0.50
A1	0.00	0.05
b	0.40	0.60
D	0.95	1.08
E	0.55	0.68
e	0.65 TYP	
L	0.20	0.30
L1	0.05 REF	

7. Legal information

Data sheet status

Document status [1][2]	Product status [3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.
[2] The term 'short data sheet' is explained in section "Definitions".
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