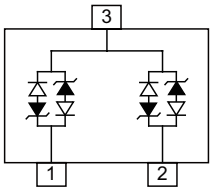
ESDALD05BE2

ESD Protection Diodes Array

Rev.01 - 25 July 2022 Product data sheet

1. General description

The ESDALD05BE2 is a low capacitance TVS (Transient Voltage Suppressor) array designed to protect high speed data interfaces. It is available in bi-directional configurations and is rated at 300 Watts for an 8/20 µs waveshape.



2. Features and benefits

- Peak pulse power 300W @ 8/20µs waveform
- IEC 61000-4-2 ESD 30kV (Air), 30kV (Contact)
- Protect one bidirectional line or two unidirectional lines
- Low capacitance
- Low clamping voltage
- Low leakage current
- Meet MSL level1
- Halogen free and RoHS compliant

3. Applications

- Mobile phones & accessories
- Portable Electronics
- Computers and peripherals
- Microprocessor based equipment
- Personal Digital Assistants (PDA)
- Networking and Telecom
- Serial and Parallel Ports

4. Ordering information

Type number	Package Name	Orderable part number	Packing method	Small packing quantity	Marking	Package issue date
ESDALD05BE2	SOT23	ESDALD05BE2X	Tape and reel	3000	BW5	13-Oct-2020

5. 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				
P_{PPM}	peak pulse power	t_p = 8/20 µs	300	W
I_{PP}	peak pulse current	t_p = 8/20 µs	15	A
V_{ESD}	ESD per IEC 61000-4-2 (air) ESD per IEC 61000-4-2 (contact)		±30 ±30	kV kV
T_{stg}	storage temperature range		-55 to 150	°C
T_j	operating temperature range		-55 to 150	°C

6. Characteristics

T_j = 25 °C unless otherwise specified.

Symbol	Parameter	Condition	Min	Typ	Max	Unit
V_{RWM}	Reverse Working Voltage	pin 1/2 to pin 3 or pin 3 to pin 1/2	-	-	5	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1 mA; pin 1/2 to pin 3 or pin 3 to pin 1/2	6.5	-	9.6	V
I_R	Reverse Leakage Current	V_{RWM} = 5 V; pin 1/2 to pin 3 or pin 3 to pin 1/2	-	-	200	nA
V_C	Clamping Voltage	I_{PP} = 1 A; t_p = 8/20 µs	-	-	9.5	V
		I_{PP} = 15 A; t_p = 8/20 µs	-	-	21	V
C_J	Junction Capacitance	V_R = 0 V; f = 1 MHz	-	0.5	0.8	pF

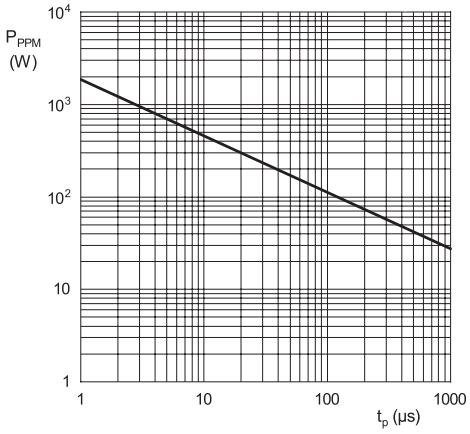


Fig. 1. Pulse rating curve

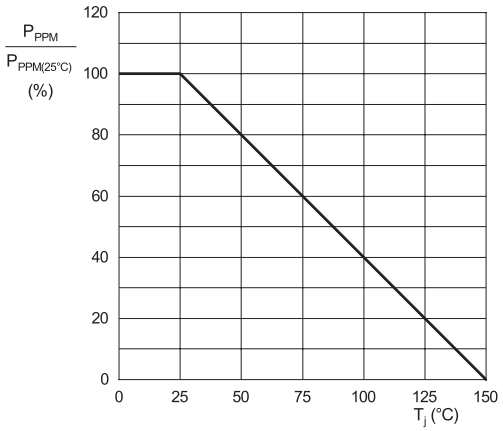


Fig. 2. Peak pulse power derating curve

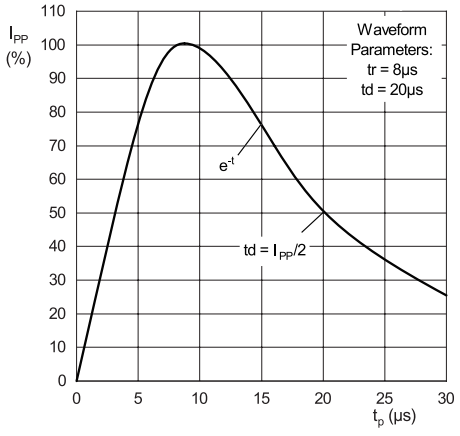


Fig. 3. Pulse waveform

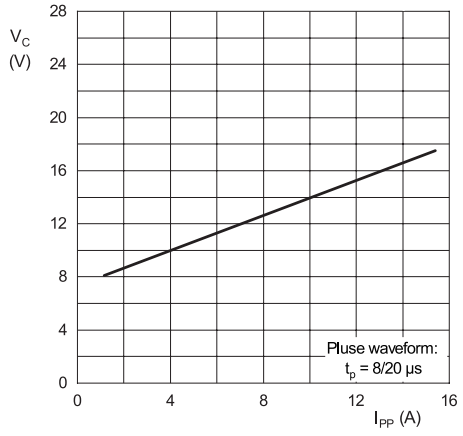


Fig. 4. Clamping voltage vs Peak pulse current

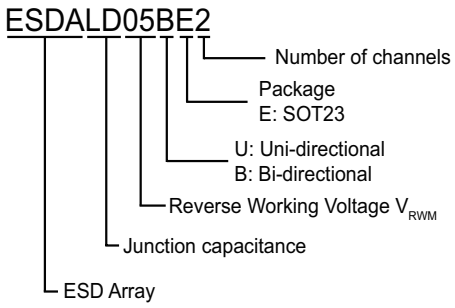
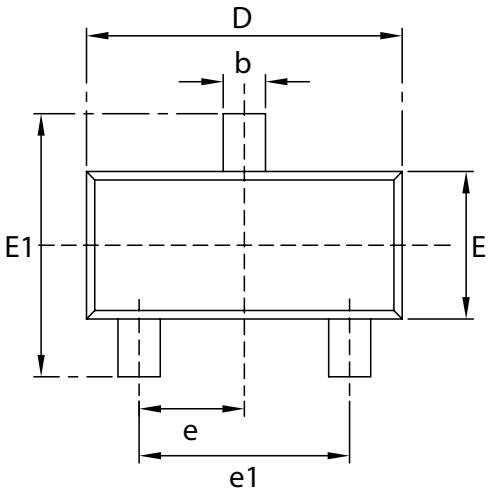
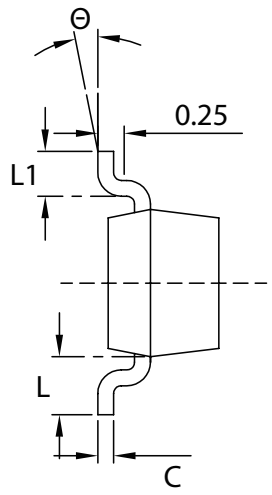


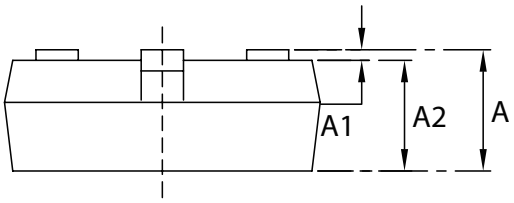
Fig. 7. Part numbering

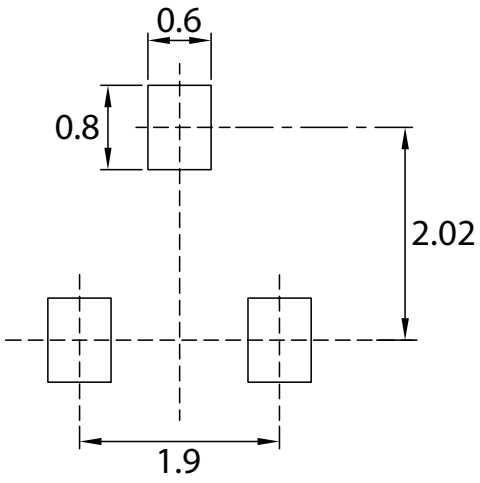
7. Package outline

SOT23









Soldering Footprint

SYMBOL	DIMENSIONS	
	MIN	MAX
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
Θ	0°	8°

Unit：mm

NOTE：
1. Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3. The pad layout is for reference purposes only.

8. 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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