

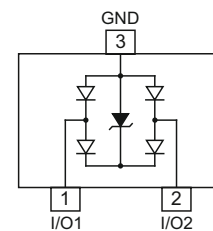
## 1. General description

The ESDALD05UE2 is a low capacitance TVS (Transient Voltage Suppressor) array designed to protect high speed data interfaces. It has been specifically designed to protect sensitive electronic components which are connected to data and transmission lines from over-stress caused by ESD (Electrostatic Discharge).



## 2. Features and benefits

- Peak pulse power 60W @ 8/20 $\mu$ s waveform
- Protects two I/O lines
- IEC 61000-4-2 (ESD)  $\pm$ 20kV(air),  $\pm$ 20kV(contact)
- IEC 61000-4-5 (Lightning) 4A (8/20 $\mu$ s)
- Low capacitance
- Low leakage current
- Low clamping voltage
- Meet MSL level1
- Halogen free and RoHS compliant



## 3. Applications

- USB 2.0
- HDMI 1.3 and HDMI 1.4
- SATA and eSATA
- DVI
- IEEE 1394
- PCI Express
- Notebooks



## 4. Ordering information

Type number	Package Name	Orderable part number	Packing method	Small packing quantity	Marking	Package issue date
ESDALD05UE2	SOT23-3L	ESDALD05UE2X	Tape and reel	3000	R22	13-Oct-2020

## 5. Absolute maximum ratings

In accordance with the Absolute Maximum Rating System (IEC 60134).  
 $T_j = 25^\circ\text{C}$  unless otherwise specified.

Symbol	Parameter	Conditions	Values	Unit
<b>Absolute maximum rating</b>				
$P_{PPM}$	peak pulse power	$t_p = 8/20 \mu\text{s}$	60	W
$I_{PP}$	peak pulse current	$t_p = 8/20 \mu\text{s}$	4	A
$V_{ESD}$	ESD per IEC 61000-4-2 (air) ESD per IEC 61000-4-2 (contact)		$\pm$ 20 $\pm$ 20	kV kV
$T_{stg}$	storage temperature range		-55 to 150	$^\circ\text{C}$
$T_j$	operating temperature range		-55 to 150	$^\circ\text{C}$

### 6. Characteristics

$T_j = 25\text{ }^\circ\text{C}$  unless otherwise specified.

Symbol	Parameter	Condition	Min	Typ	Max	Unit
$V_{RWM}$	Reverse Working Voltage	Any I/O pin to GND	-	-	5	V
$V_{BR}$	Reverse Breakdown Voltage	$I_T = 1\text{ mA}$ ; Any I/O pin to GND	6	-	9	V
$I_R$	Reverse Leakage Current	$V_{RWM} = 5\text{ V}$ ; Any I/O pin to GND	-	-	100	nA
$V_C$	Clamping Voltage	$I_{PP} = 1\text{ A}$ ; $t_p = 8/20\text{ }\mu\text{s}$ ; Any I/O pin to GND	-	-	10	V
		$I_{PP} = 4\text{ A}$ ; $t_p = 8/20\text{ }\mu\text{s}$ ; Any I/O pin to GND	-	-	15	V
$C_J$	Junction Capacitance	$V_R = 0\text{ V}$ ; $f = 1\text{ MHz}$ ; Any I/O pin to GND	-	0.5	0.8	pF

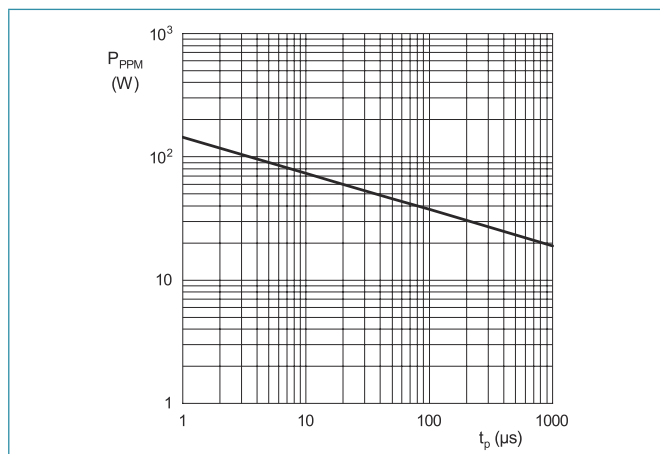


Fig. 1. Pulse rating curve

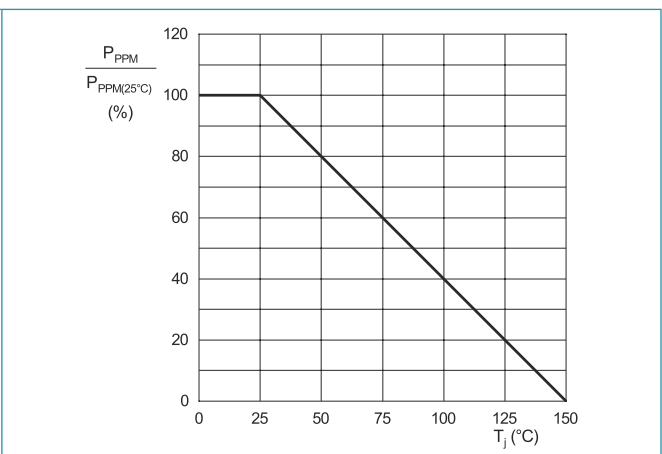


Fig. 2. Peak pulse power derating curve

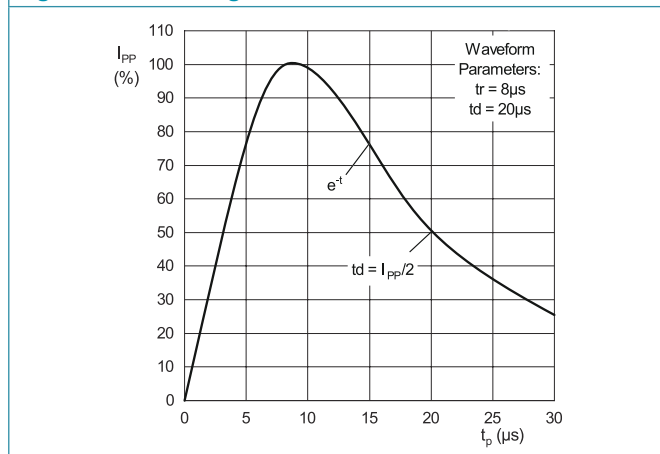


Fig. 3. Pulse waveform

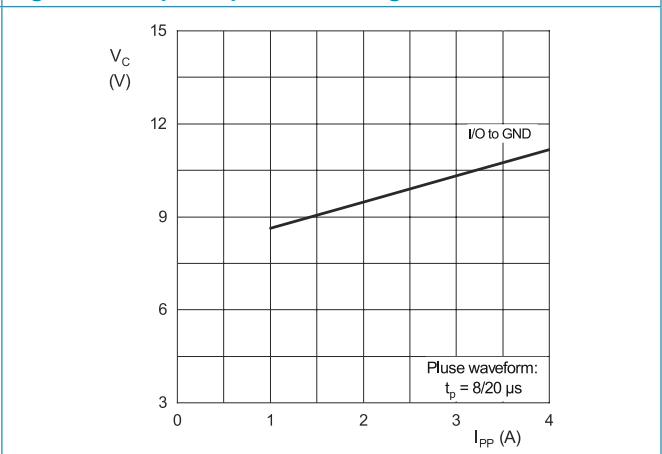
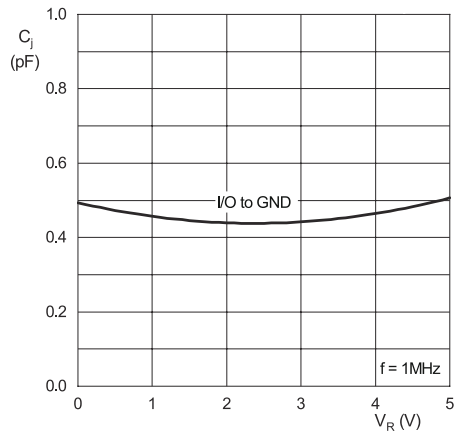
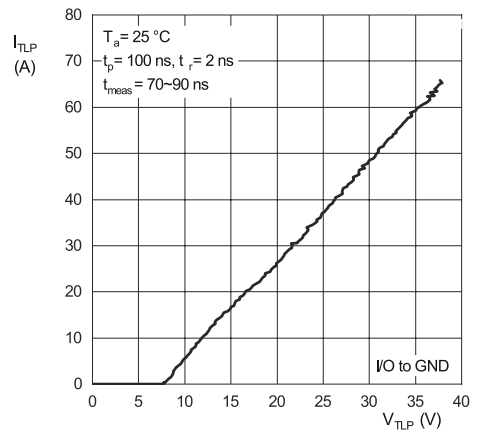


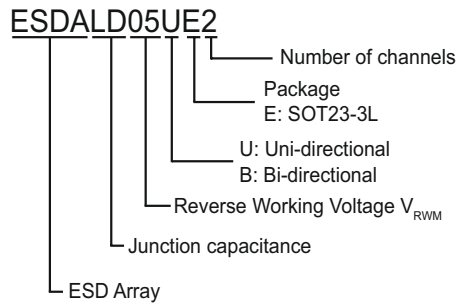
Fig. 4. Clamping voltage vs Peak pulse current



**Fig. 5. Capacitance vs Reverse voltage**



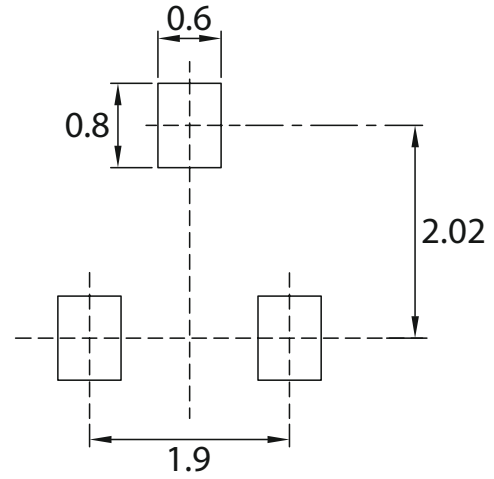
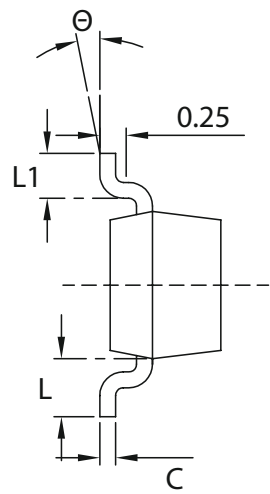
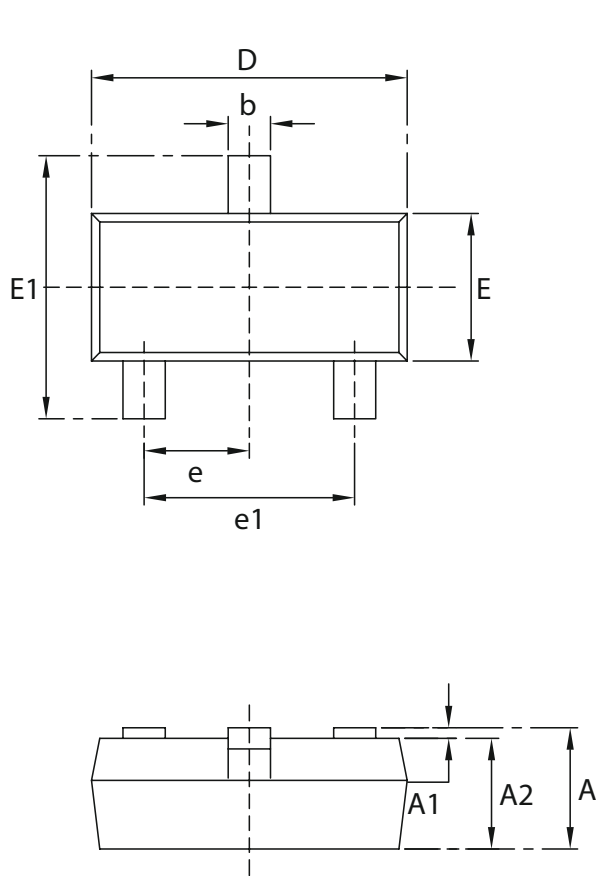
**Fig. 6. TLP I-V Curve**



**Fig. 7. Part numbering**

**7. Package outline**

SOT23-3L



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.

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- [2] The term 'short data sheet' is explained in section "Definitions".
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