

SuperESD – DESD1LIN2WSQ-7

1. Description

The DESD1LIN2WSQ-7 is Transient Voltage Suppressor that designed to protect components which are connected to data and transmission lines against electrostatic discharge (ESD), electrical fast transient (EFT), and lightning. All pins are rated to withstand 30kV ESD pulses using the IEC61000-4-2 air discharge method.

2. Features

- IEC 61000-4-2 Level 4 ESD Protection
 - $\pm 30\text{kV}$ Contact Discharge
 - $\pm 30\text{kV}$ Air Discharge
- 450W Peak pulse Power (8/20us)
- Low clamping voltage
- Working voltage: 15/24V
- Low leakage current
- RoHS compliant
- Protecting one bi-directional line
- Junction capacitance: 28pF Typ.

3. Applications

- LIN-bus protection
- Automotive applications

4. Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
DESD1LIN2WSQ-7	SOD-323	AM	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7 inches

Table-1 Ordering information

5. Pin Configuration and Functions

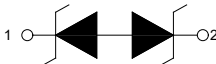
Pin	Name	Description	Outline	Circuit Diagram
1	IO1	Connect to IO		
2	IO2	Connect to IO		

Table-2 Pin configuration

6. Specification

6.1. Absolute Maximum rating

Over operating free-air temperature range (unless otherwise noted)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25°C	P _{pk}	-	450	W
Peak pulse current (tp=8/20us, pin1 to 2)@25°C	I _{PP}	-	12.0	A
Peak pulse current (tp=8/20us, pin2 to 1)@25°C	I _{PP}	-	8.0	A
ESD (IEC61000-4-2 air discharge) @25°C	V _{ESD}	-	±30	kV
ESD (IEC61000-4-2 contact discharge) @25°C	V _{ESD}	-	±30	kV
Junction temperature	T _J	-	150	°C
Operating temperature	T _{OP}	-40	125	°C
Storage temperature	T _{STG}	-55	150	°C
Lead temperature	T _L	-	260	°C

Table-3 Absolute Maximum rating

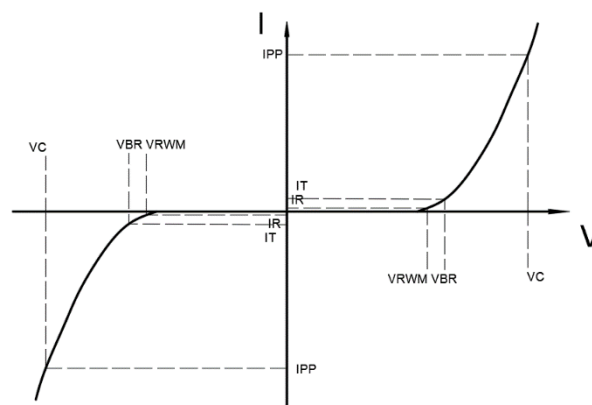
6.2. Electrical Characteristics

At TA = 25°C unless otherwise noted

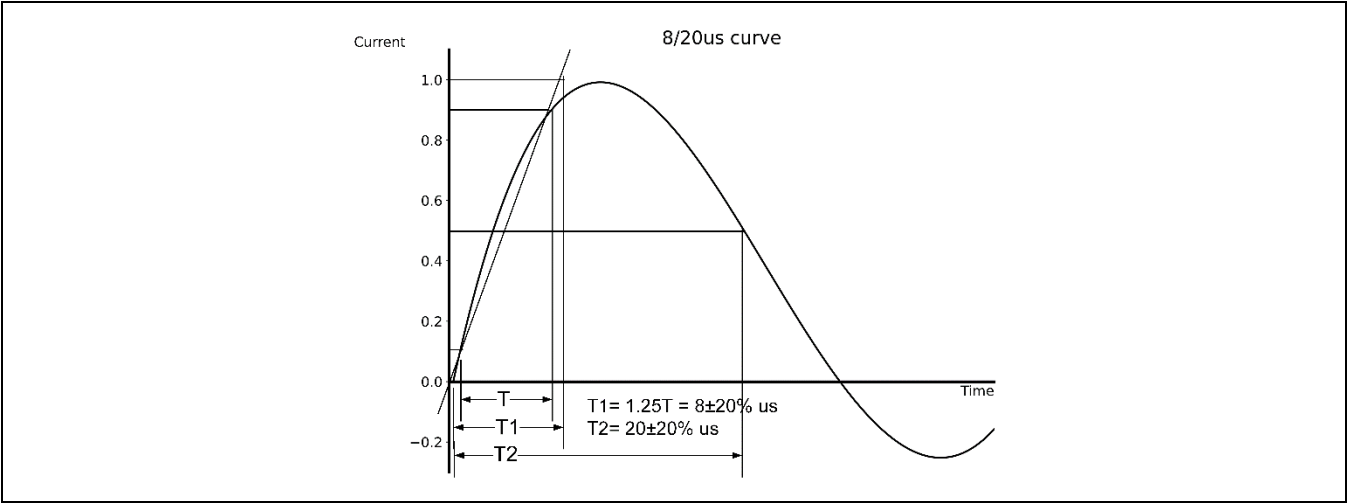
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}	Pin1 to Pin2			15.0	V
		Pin2 to Pin1			24.0	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$, Pin1 to Pin2	16.5			V
		$I_T=1mA$, Pin2 to Pin1	26.0			V
Reverse Leakage Current	I_R	$V_{RWM}=15V$			1.0	μA
		$V_{RWM}=24V$			1.0	μA
Clamping Voltage	V_C	$I_{PP}=1A$; Pin1 to 2; $t_p=8/20\mu s$		20.0	22.0	V
		$I_{PP}=12A$; Pin1 to 2; $t_p=8/20\mu s$		26.0	28.0	V
		$I_{PP}=1A$; Pin2 to 1; $t_p=8/20\mu s$		32.0	35.0	V
		$I_{PP}=8A$; Pin2 to 1; $t_p=8/20\mu s$		45.0	48.0	V
Junction Capacitance	C_J	I/O to I/O; $V_R=0V$; $f=1MHz$		28	35	pF

Table-4 Electrical Characteristics

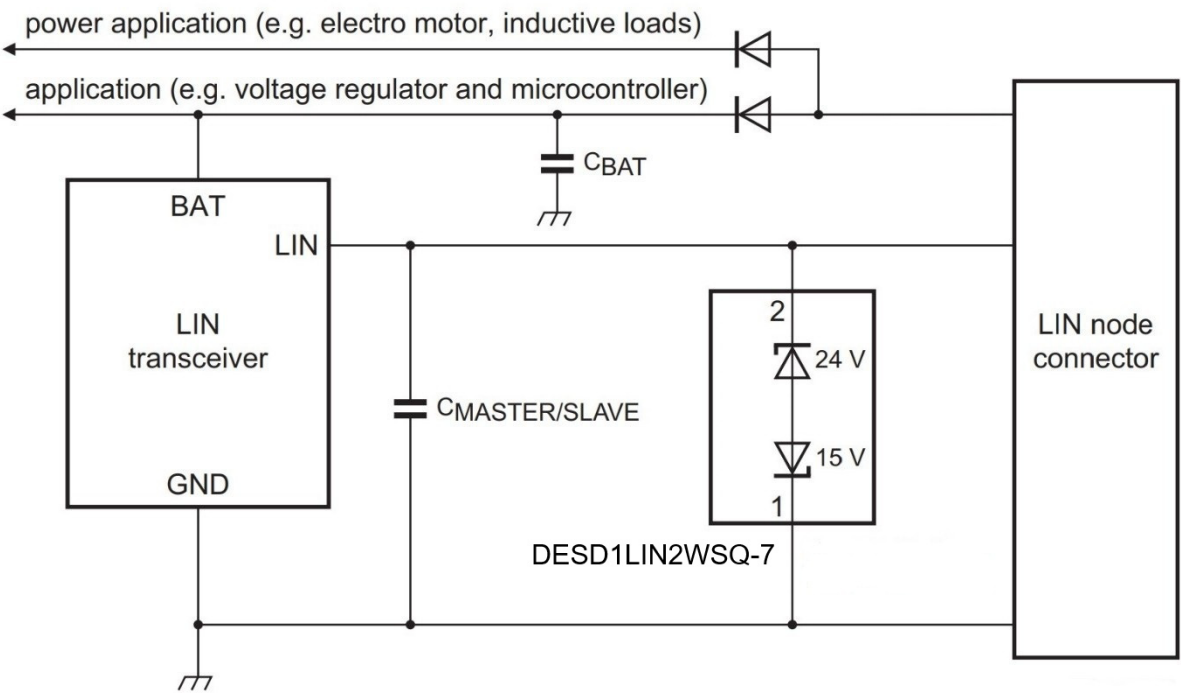
Symbol	Parameters
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}



7. Typical Characteristic

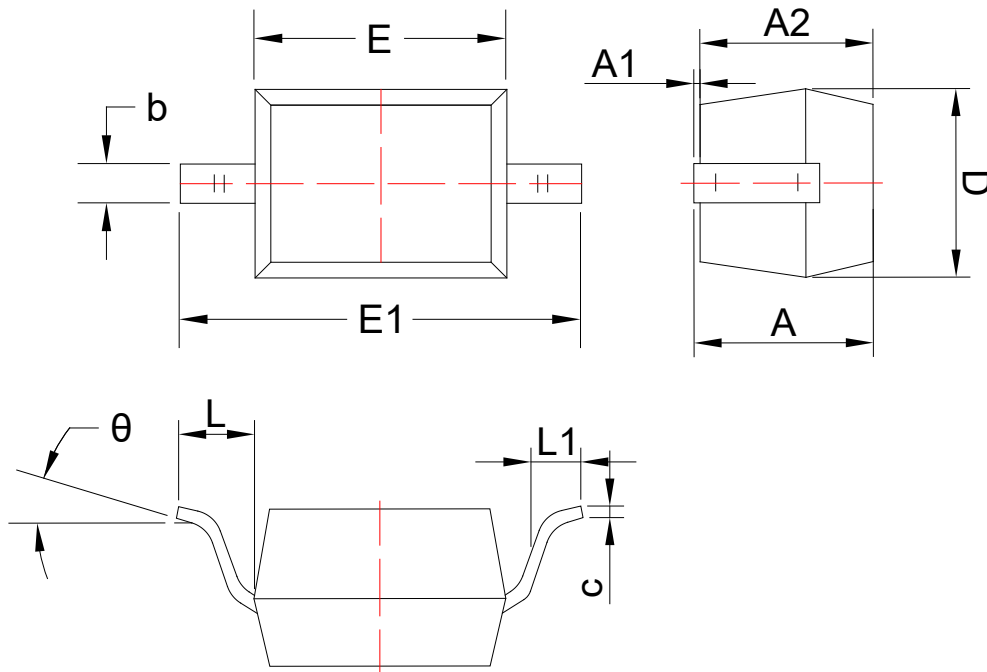


8. Typical Application



Typical Interface Application

9. Dimension (SOD-323)



Symbol	Dimensions in Millimeters	
	Min.	Max.
A	0.80	1.00
A1	0.00	0.14
A2	0.66	0.97
b	0.25	0.35
c	0.08	0.18
D	1.20	1.40
E	1.55	1.80
E1	2.50	2.80
L	0.475REF	
L1	0.25	0.40
θ	0°	8°

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