



### Discription

The HDESD3V3XA1BCSF-7 protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events.

Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD.

It gives designer the flexibility to protect one bi-directional line in applications where arrays are not practical.



DFN0603-2L

### Features

- ★ Transient protection for high-speed data lines  
IEC 61000-4-2(ESD) ±30kV (Contact)  
±30kV (Air)  
IEC 61000-4-4(EFT) 40A (5/50 ns)
- ★ Peak power dissipation: 80W(8/20us)
- ★ Working voltages : 3.3V
- ★ Ultra-small package (0.6mmx0.3mmx0.3mm)
- ★ Protects one I/O line
- ★ Low clamping voltage
- ★ Low leakage current



Circuit Diagram

### Ordering information

Product ID	Pack	Qty(PCS)
HDESD3V3XA1BCSF-7	DFN0603-2L	10000

### Absolute Ratings(Tamb = 25°C)

Symbol	Parameter	Value	Units
P <sub>PP</sub>	Peak Pulse Power (t <sub>p</sub> = 8/20μs)	80	W
T <sub>L</sub>	Maximum lead temperature for soldering during 10s	260	°C
T <sub>stg</sub>	Storage Temperature Range	-55 to +150	°C
T <sub>op</sub>	Operating Temperature Range	-40 to +125	°C
T <sub>j</sub>	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD)	air discharge contact discharge	±30 ±30 KV

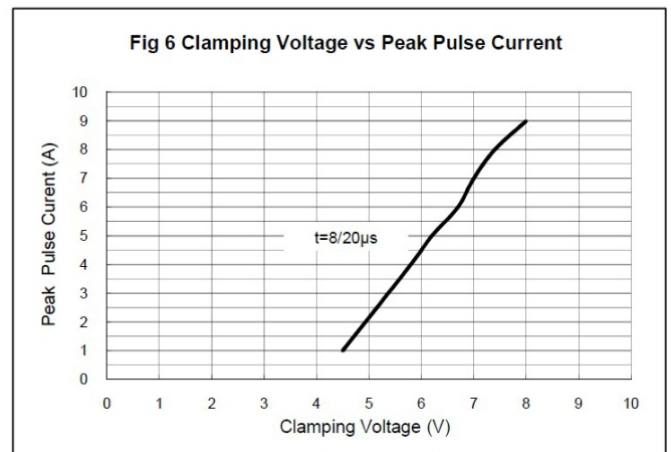
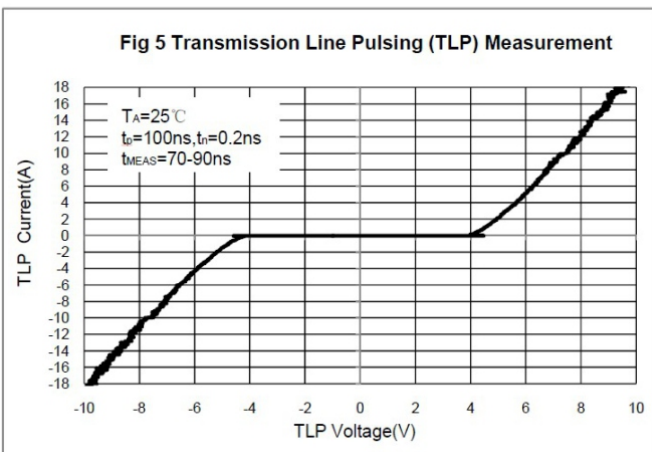
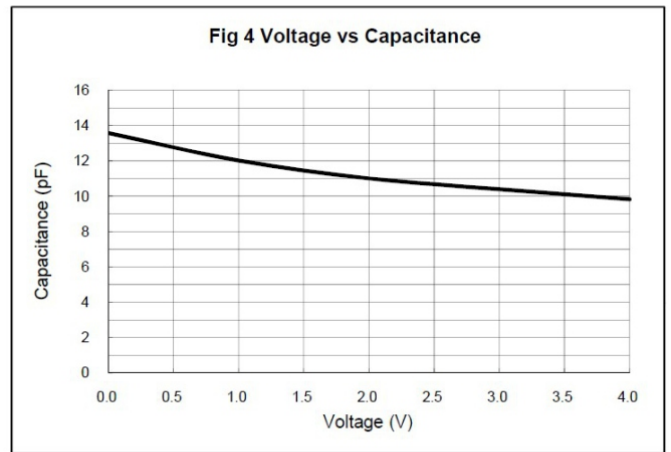
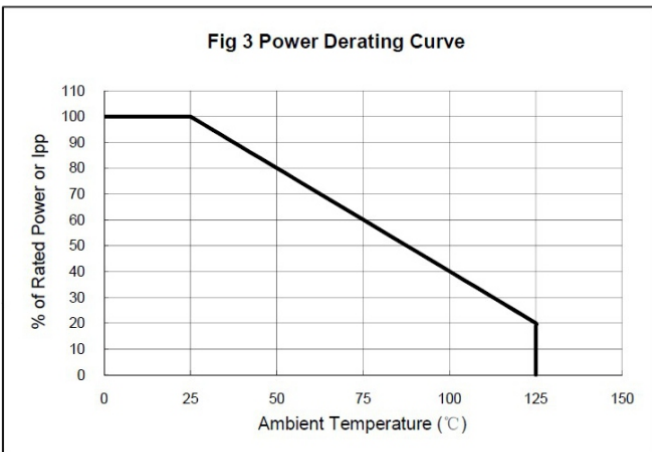
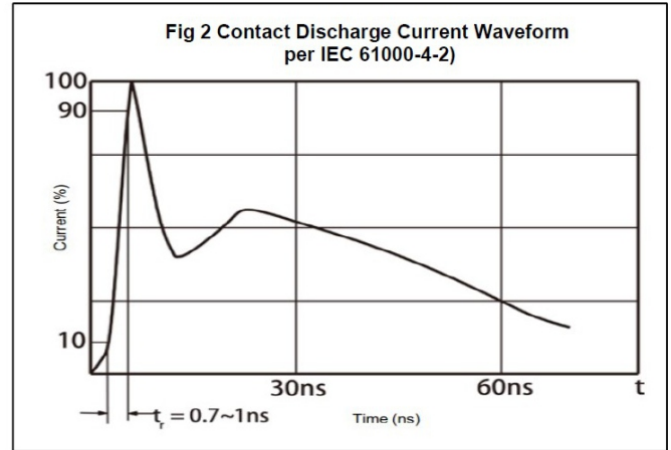
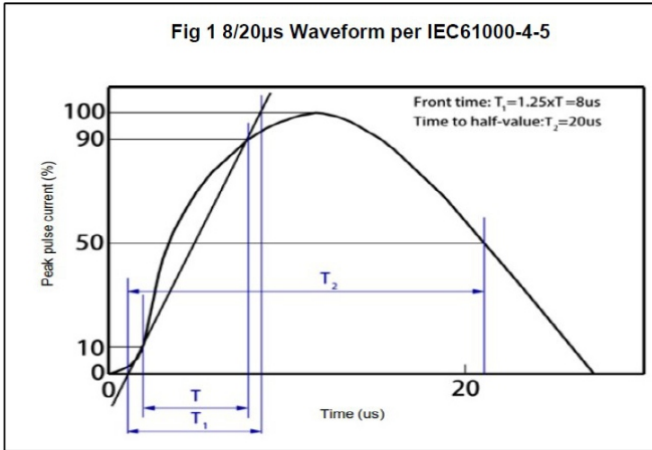


### Electrical Characteristics

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
$V_{RWM}$	Reverse Working Voltage				3.3	V
$V_{BR}$	Reverse Breakdown Voltage	$I_T = 1mA$	3.6			V
$I_R$	Reverse Leakage Current	$V_{RWM} = 3.3V$			1.0	$\mu A$
$V_C$	Clamping Voltage	$I_{RWM} = 1A, t_p = 8/20\mu s$		4.5	6.0	V
		$I_{RWM} = 8A, t_p = 8/20\mu s$			10	V
$V_{CTL P}$	TLP Clamping Voltage	$I_{PP} = 16A$ IEC61000-4-2 Level 4 equivalent ( $\pm 8kV$ Contact, $\pm 15kV$ Air)		9.0		V
$C_J$	Junction Capacitance	$V_R = 0V, f = 1MHz$		0.6	0.7	pF

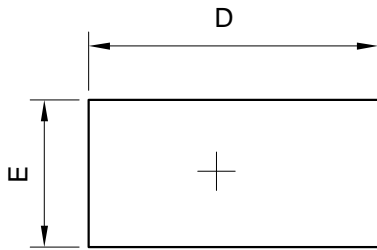


### Typical Characteristics

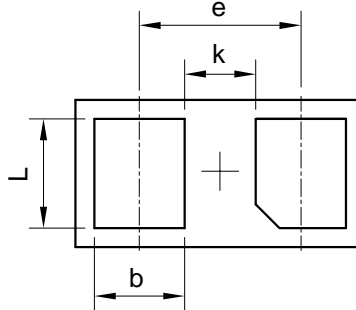




### Outline And Dimensions

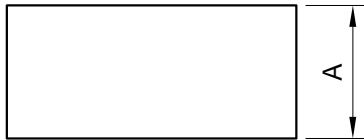


TOP VIEW



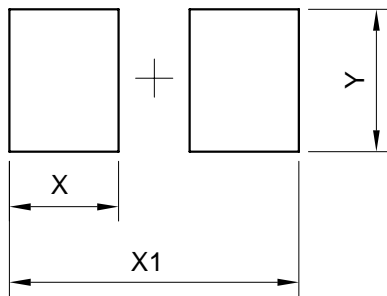
BOTTOM VIEW

DFN0603-2L			
Dim	Min	Typ.	Max
D	0.58	0.61	0.64
E	0.28	0.31	0.34
e	-	0.34	-
L	0.20	0.23	0.26
b	0.16	0.19	0.22
A	0.25	0.28	0.31
k	0.12	0.15	0.18
All Dimensions in mm			



SSIDE VIEW

### Soldering Footprint



DFN0603-2L	
DIM	(mm)
X	0.23
X1	0.61
Y	0.30



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