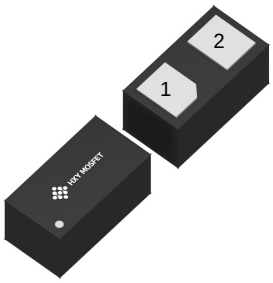
HDESD3V3XA1BCSF-7
ESD PROTECTION DIODE

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/0 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_{PP}	Peak Pulse Power (t_p = 8/20μs)	80	W
T_L	Maximum lead temperature for soldering during 10s	260	°C
T_{stg}	Storage Temperature Range	-55 to +150	°C
T_{op}	Operating Temperature Range	-40 to +125	°C
T_j	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	μA
V_C	Clamping Voltage	I_{PP} = 1A, t_p = 8/20μs		4.5	6.0	V
		I_{PP} = 8A, t_p = 8/20μs			10	V
V_{CTLP}	TLP Clamping Voltage	I_{PP} = 16A IEC61000-4-2 Level 4 equivalent (±8kV Contact, ±15kV Air)		9.0		V
C_J	Junction Capacitance	V_R = 0V, f = 1MHz		0.6	0.7	pF

Typical Characteristics

Fig 1 8/20μs Waveform per IEC61000-4-5

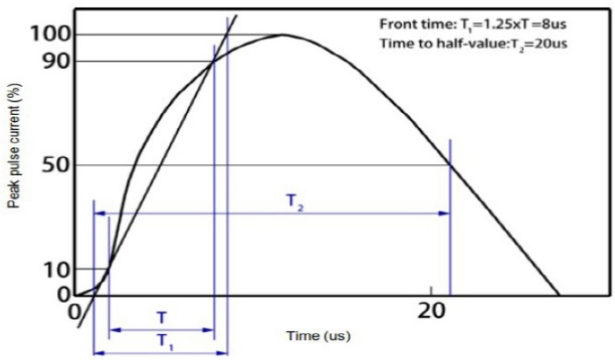


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2)

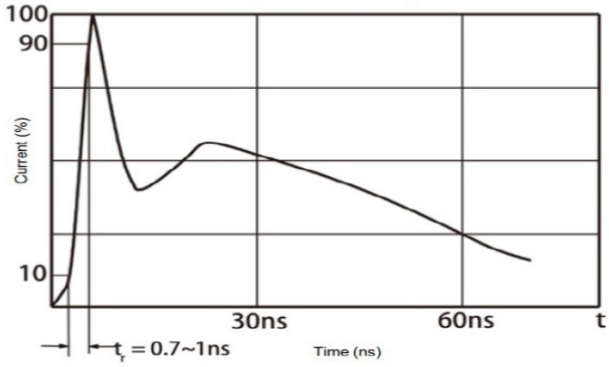


Fig 3 Power Derating Curve

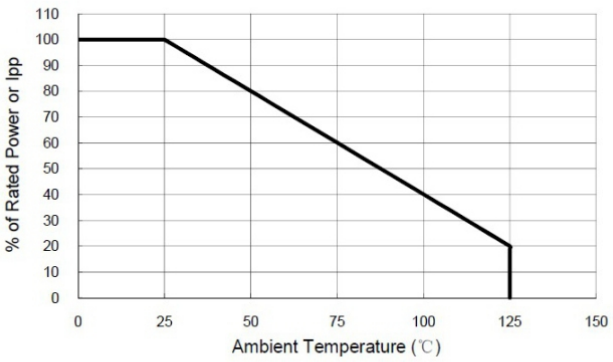


Fig 4 Voltage vs Capacitance

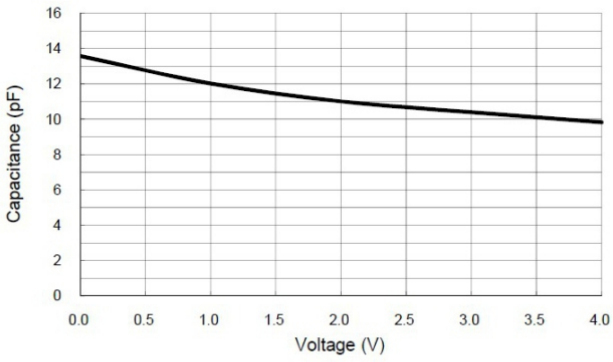


Fig 5 Transmission Line Pulsing (TLP) Measurement

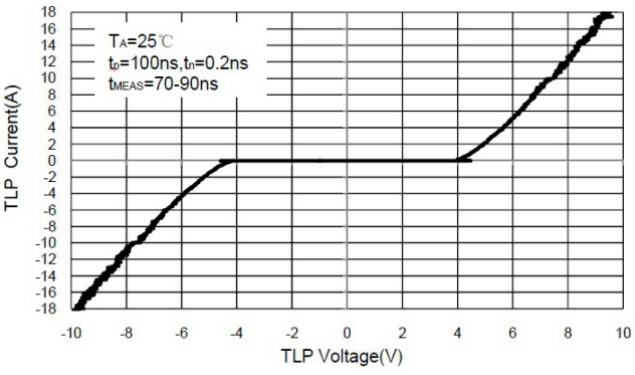
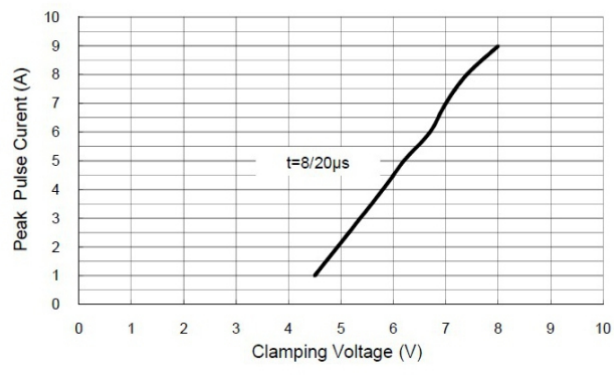
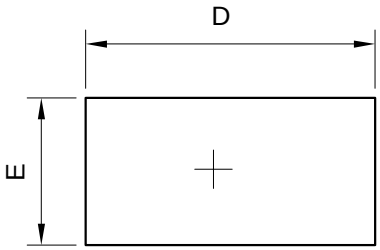


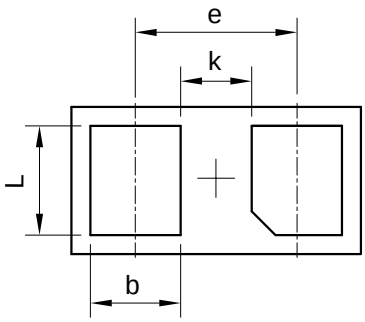
Fig 6 Clamping Voltage vs Peak Pulse Current



Outline And Dimensions



TOP VIEW



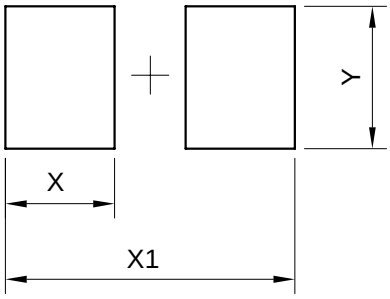
BOTTOM VVIEW

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

Soledering Footprint



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

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