

## Ultra Low Capacitance TVS Diode Array

### Features

- Low leakage current
- Low clamping voltage
- Snap-Back technology
- DFN1610-6L package
- Ultra low capacitance (0.40pF typical)
- 80Watts peak pulse power ( $t_p = 8/20 \mu s$ )
- ESD Protection for high-speed data lines to:
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 10A (8/20 $\mu s$ )
- IEC 61000-4-2  $\pm 16KV$  contact  $\pm 20KV$  air
- RoHS compliant



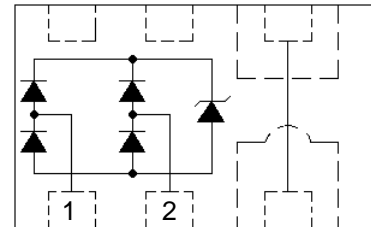
Marking :

DFN1610-6L

### Applications

- USB 3.0, USB 2.0, MHL
- 1G/2.5G/5G/10G Ethernet
- Digital Visual Interface (DVI)
- Unified Display Interface (UDI)
- HDMI 2.0, Display Port 1.3, eSATA

### Schematic Diagram



### Absolute Maximum Ratings ( $T_A=25^\circ C$ , Unless otherwise specified.)

Parameter	Symbol	Value	Unit
Peak Pulse Power ( $T_P=8/20\mu S$ )	$P_{PP}$	80	W
Peak Pulse Current ( $t_P = 8/20\mu S$ )	$I_{PP}$	10	A
Junction Temperature	$T_J$	-55 to +125	$^\circ C$
Storage temperature	$T_{STG}$	-55 to +150	$^\circ C$

### Electrical Characteristics ( $T_A=25^\circ C$ , Unless otherwise specified.)

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Reverse stand-off Voltage	$V_{RWM}$				3.3	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=10\mu A$	5	6.5	15	V
Reverse Leakage Current	$I_R$	$V_R=3.3V$		0.01	0.1	$\mu A$
Trigger Voltage	$V_T$	$I_{PP}=10A, T_P=8/20\mu S$		9.5		V
Clamping Voltage	$V_C$	$I_{PP}=10A, T_P=8/20\mu S$		8.0		V
Dynamic Resistance	$R_{dyn}$	$I_T = 0\sim 30A, t_p = TLP$		0.25		$\Omega$
Junction Capacitance	$C_J$	$V_R=0V, f=1MHz, I/O$ to GND		0.4	0.50	pF

## Ratings and Characteristics Curves

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Fig.1 Peak Pulse Power Rating Curve

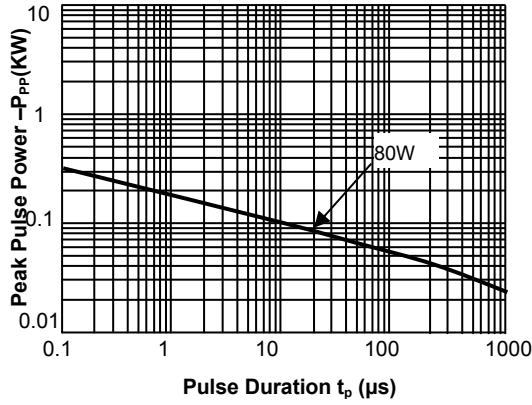


Fig.2 Pulse Derating Curve

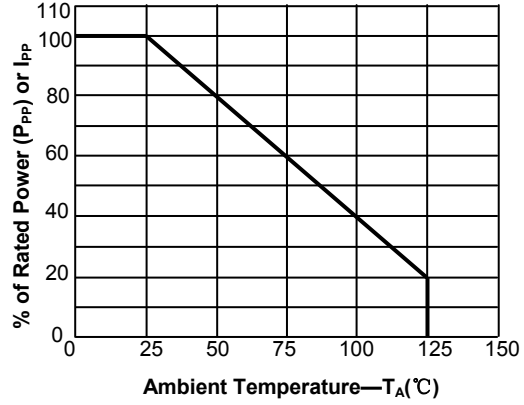


Fig.3 IEC61000-4-2 +8kV Contact Discharge

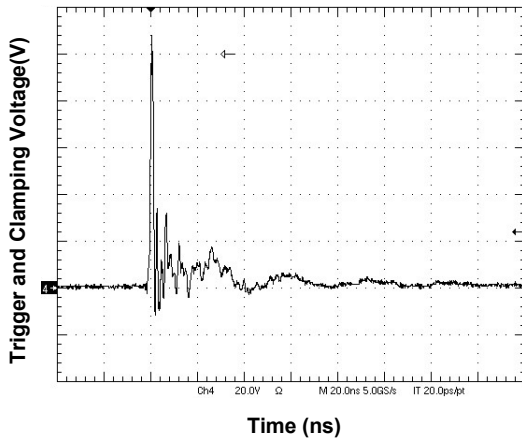


Fig.4 IEC61000-4-2 -8kV Contact Discharge

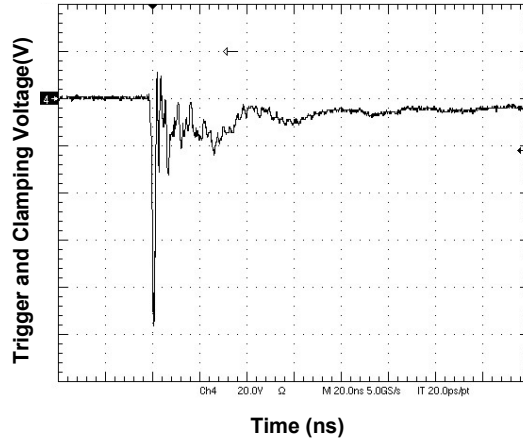


Fig.5 Transmission Line Pulse (tp=100ns)

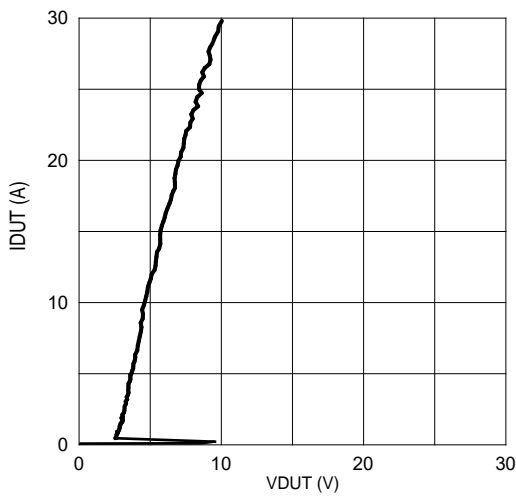
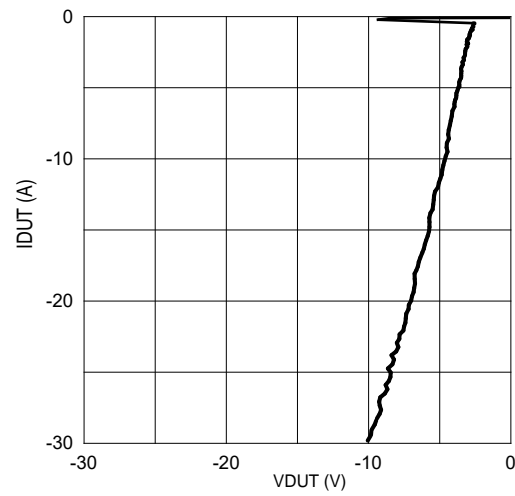
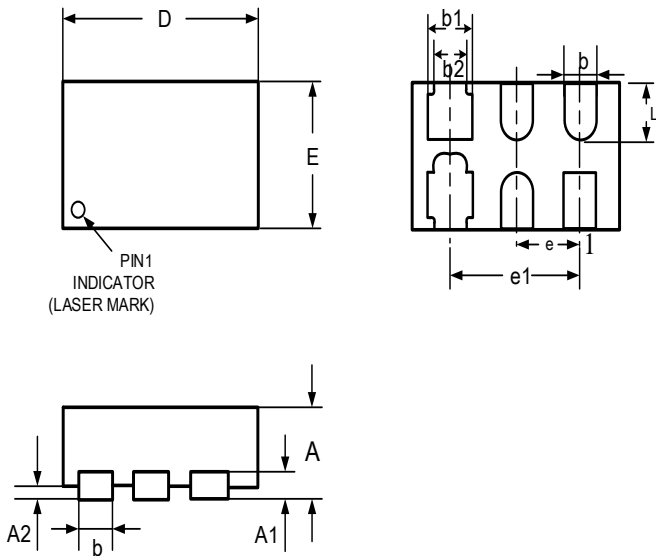


Fig.6 Transmission Line Pulse (tp=100ns)



## Package Outline Dimensions

in inches (millimeters)



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
D	1.55	1.65	0.061	0.065
E	0.95	1.05	0.037	0.041
L	0.33	0.43	0.013	0.017
b	0.15	0.25	0.006	0.010
b1	0.35	0.45	0.014	0.018
b2	0.20	0.30	0.008	0.012
e	0.50BSC		0.020BSC	
e1	1.00BSC		0.039BSC	
A	0.40	0.50	0.016	0.020
A1	0.127REF		0.005REF	
A2	0.00	0.05	0.000	0.002

## Revision History

Document Version	Date of release	Discription of changes
Rev.A	2021.03.10	Firstissue

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