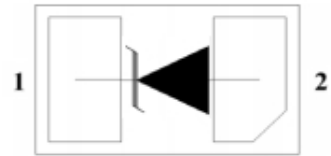


Features

- ESD / transient protection of high speed data lines
 - IEC 61000-4-2 (ESD): $\pm 30\text{kV}$ (air), $\pm 30\text{ kV}$ (contact)
 - IEC 61000-4-4 (EFT): 40A (5/50ns)
 - IEC 61000-4-5 (Lightning): 50A (8/20 μs)
- Low reverse stand-off voltage: $V_{\text{RWM}} = 12\text{V}$
- Protects one I/O or power line
- Low clamping voltage
- Low leakage current
- RoHS compliant with Halogen-free

HF



DFN1610-2L

Mechanical Data

- Case: DFN1610-2L
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin-Plated Leads, Solderability-per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
ESD12VDH	DFN1610-2L	10000 pcs / Tape & Reel	12D

Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
IEC 61000-4-2; ESD (Air)	$V_{\text{ESD-A}}$	± 30	kV
IEC 61000-4-2; ESD (Contact)	$V_{\text{ESD-C}}$	± 30	kV
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{PP}	1500	W
Peak Pulse Current ($t_p = 8/20\mu\text{s}$)	I_{PP}	50	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-to-Air ^{*1}	$R_{\theta\text{JA}}$	150	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case ^{*1}	$R_{\theta\text{JC}}$	57	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Lead ^{*1}	$R_{\theta\text{JL}}$	149	$^\circ\text{C/W}$
Junction Temperature	T_{J}	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ\text{C}$

Note 1: The data tested by surface mounted on a 22mm * 17mm * 1mm FR4-epoxy P.C.B

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Reverse Stand-off Voltage	V_{RWM}		-	-	12	V
Reverse Breakdown Voltage	$V_{(BR)}$	$I_T = 1\text{mA}$	13	-	17	V
Reverse Leakage Current	I_R	$V_{RWM} = 12\text{V}$	-	-	0.2	μA
Peak Forward Voltage	V_F	$I_F = 1\text{A}$	-	-	1.3	V
Clamping Voltage	V_C	$I_{PP} = 50\text{A}$, $t_p = 8/20\mu\text{s}$	-	24	30	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$	-	265	-	pF

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

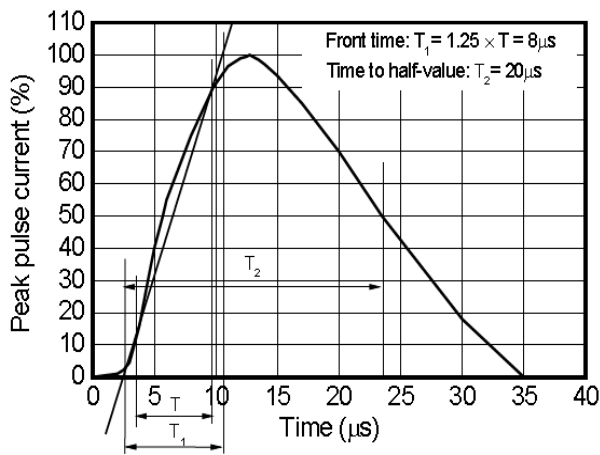


Fig 1 8/20 μs waveform per IEC61000-4-5

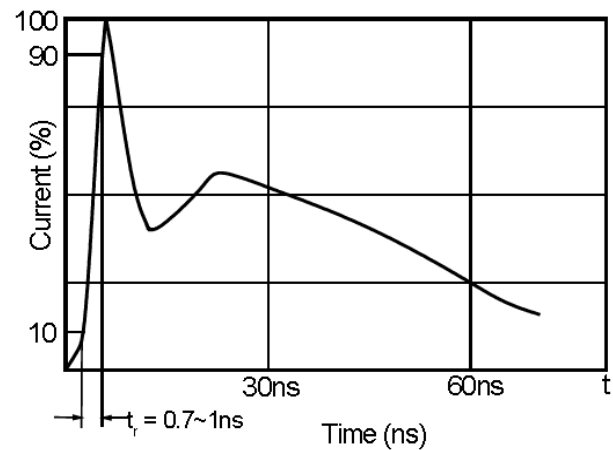


Fig 2 ESD pulse waveform according to IEC61000-4-2

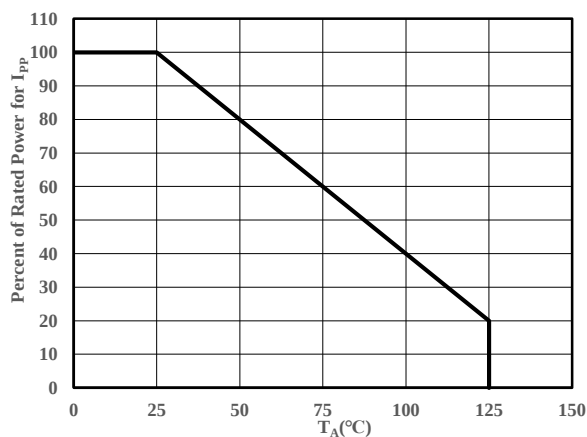


Fig 3 Power Derating Curve

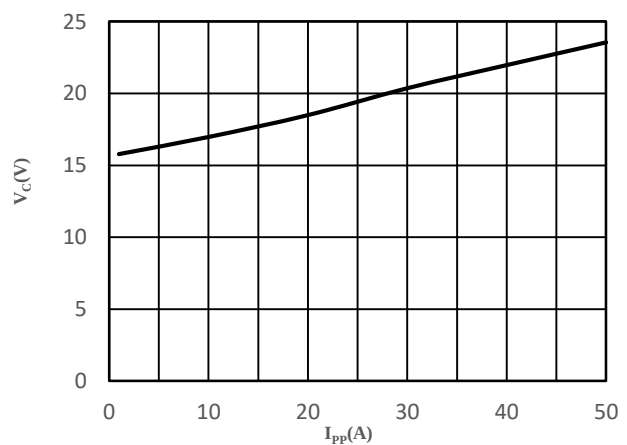


Fig 4 Clamping Voltage vs. Peak Pulse Current

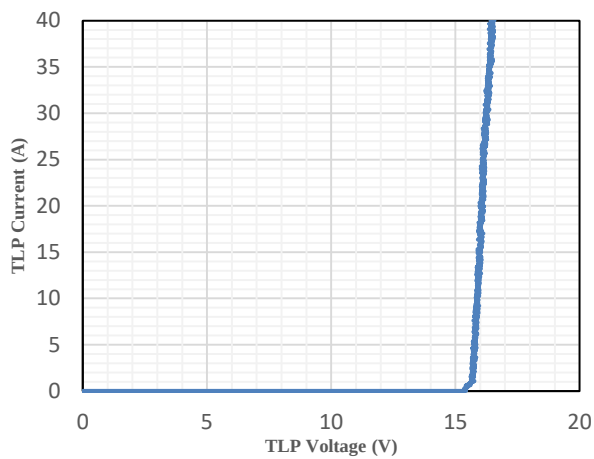
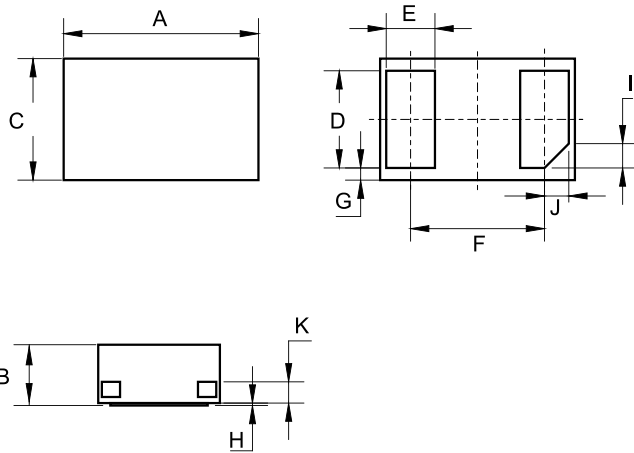


Fig 5 TLP Measurement

Package Outline Dimensions (Unit: mm)



DFN1610-2L			
Dimension	Min.	Typ.	Max.
A	1.550	1.600	1.650
B	0.450	0.500	0.550
C	0.950	1.000	1.050
D	0.750	0.800	0.850
E	0.350	0.400	0.450
F	1.00	1.100	1.200
G	0.050	0.100	0.150
H	0.000	0.020	0.050
I	0.150	0.200	0.250
J	0.150	0.200	0.250
K	0.100	0.150	0.200

Package Outline Dimensions (Unit: mm)

DFN1610-2L

