

ESD12VDH-HF

RoHS Device
Halogen Free

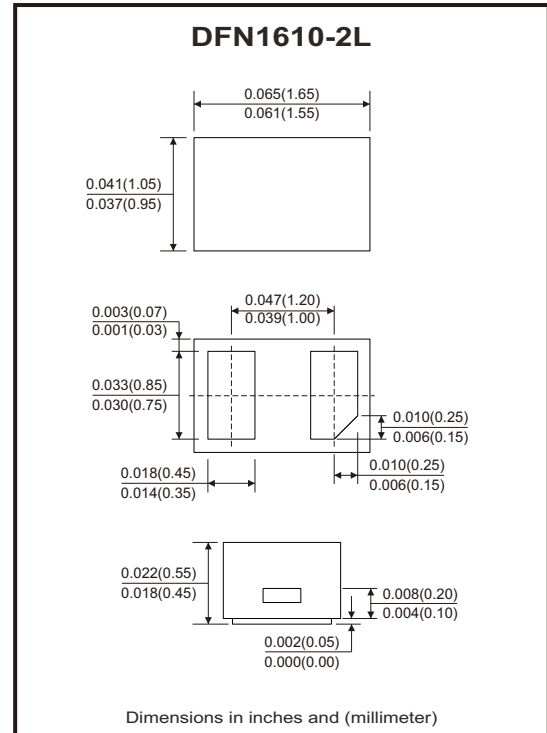


Features

- 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.
- Protects one I/O or power line.
- Low clamping voltage.
- Low leakage current.

Mechanical data

- Case: DFN1610-2L, molded plastic.
- Terminals: Matte tin-plated leads, solderability per MIL-STD-202, method 208.
- Molding compound: UL flammability classification rating 94V-0.
- Polarity: Indicated by cathode band.
- Mounting position: Any.



Circuit Diagram



Maximum Rating (at TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
IEC 61000-4-2; ESD (air)	V _{ESD-A}	± 30	kV
IEC 61000-4-2; ESD (contact)	V _{ESD-C}	± 30	kV
Peak pulse power (tp = 8/20 μs)	P _{PP}	1500	W
Peak pulse current (tp = 8/20 μs)	I _{PP}	50	A
Thermal resistance junction-to-air (Note 1)	R _{θJA}	150	°C/W
Thermal resistance junction-to-case (Note 1)	R _{θJC}	57	°C/W
Thermal resistance junction-to-lead (Note 1)	R _{θJL}	149	°C/W
Junction temperature range	T _j	-55 to +125	°C
Storage temperature range	T _{STG}	-55 to +150	°C

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

Electrical Characteristics (at TA=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Reverse stand-off voltage		V_{RWM}			12	V
Reverse breakdown voltage	$I_T = 1\text{mA}$	$V_{(BR)}$	13		17	V
Reverse leakage current	$V_{RWM} = 12\text{V}$	I_R			0.2	μA
Peak forward voltage	$I_F = 1\text{A}$	V_F			1.3	V
Clamping voltage	$I_{PP} = 50\text{A}$, $t_p = 8/20\mu\text{s}$	V_C		24	30	V
Junction capacitance	$V_R = 0\text{V}$, $f = 1\text{MHz}$	C_J		265		pF

Rating and Characteristic Curves (ESD12VDH-HF)

Fig.1 - 8/20 μs Waveform per IEC 61000-4-5

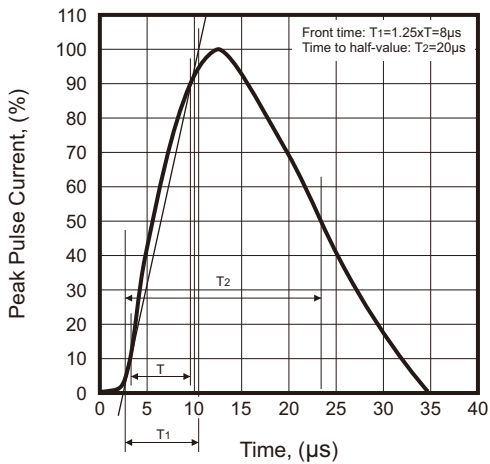


Fig.2 - ESD Pulse Waveform According to IEC 61000-4-2

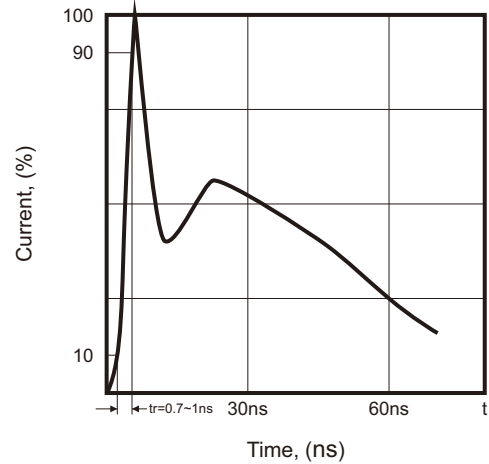


Fig.3 - Power Derating Curve

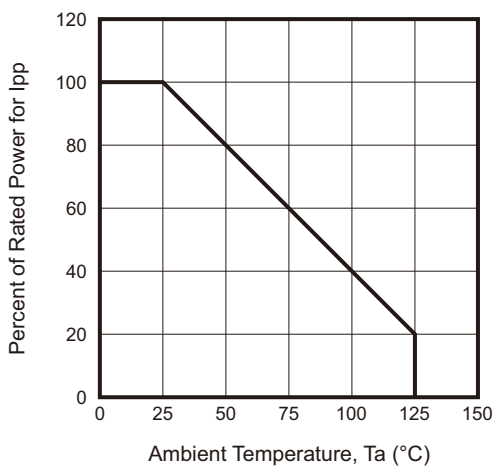
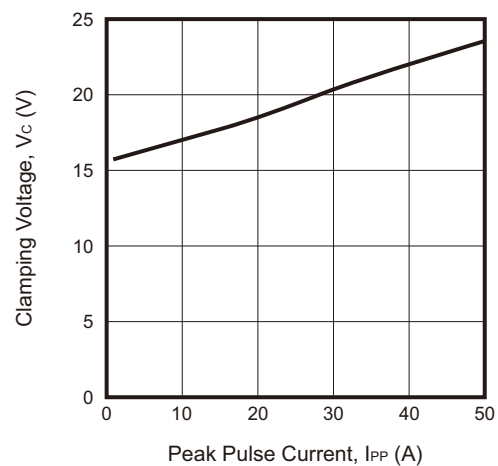
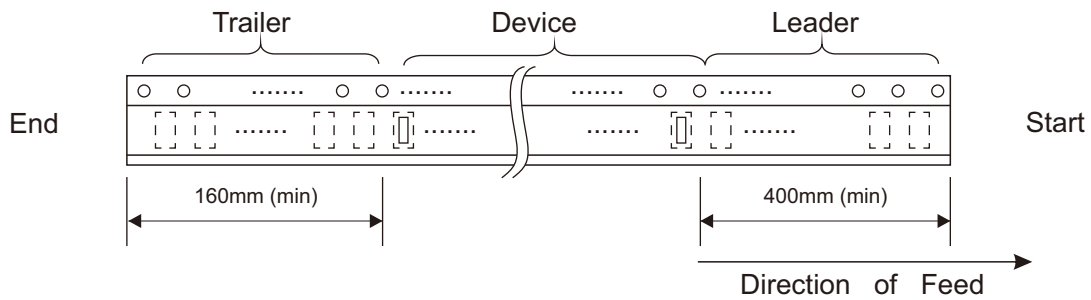
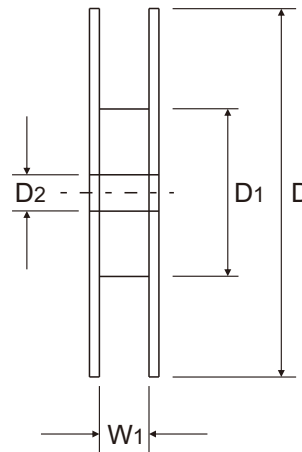
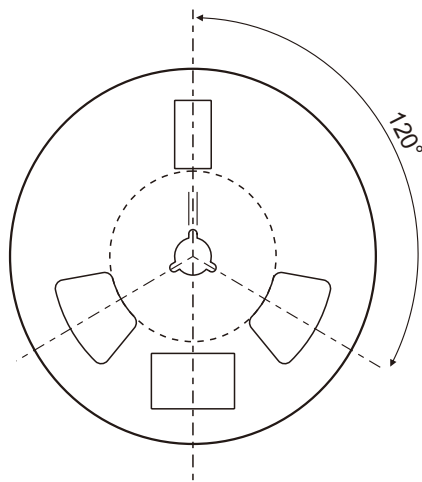
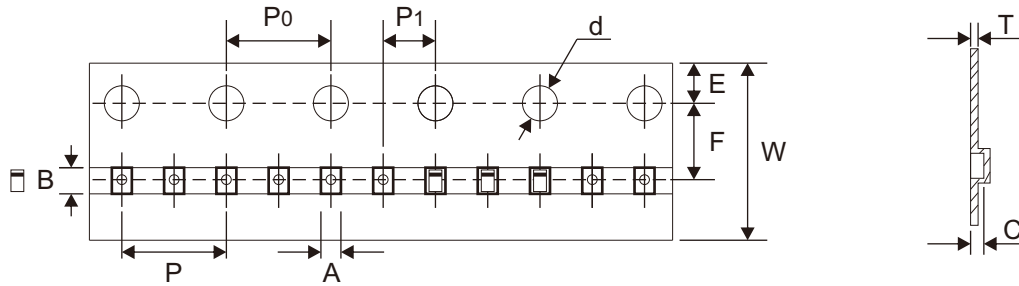


Fig.4 - Clamping voltage vs. Peak Pulse Current



Reel Taping Specification



DFN1610 -2L	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	1.15 ± 0.05	1.78 ± 0.05	0.63 ± 0.05	1.55 ± 0.01	178.00 ± 1.00	54.00 ± 0.50	13.00 ± 0.50
	(inch)	0.045 ± 0.002	0.070 ± 0.002	0.025 ± 0.002	0.061 ± 0.0004	7.008 ± 0.039	2.126 ± 0.020	0.512 ± 0.020

DFN1610 -2L	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.20 ± 0.03	8.00 + 0.30 - 0.10	9.50 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.008 ± 0.001	0.315 + 0.012 - 0.004	0.374 ± 0.039

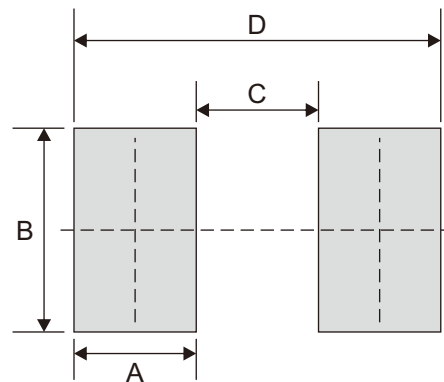
Marking Code

Park Number	Marking Code
ESD12VDH-HF	12D



Suggested P.C.B. PAD Layout

SIZE	DFN1610-2L	
	(mm)	(inch)
A	0.60	0.024
B	1.00	0.039
C	0.60	0.024
D	1.80	0.071



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
DFN1610-2L	10,000	7