SMD ESD Protection Diode

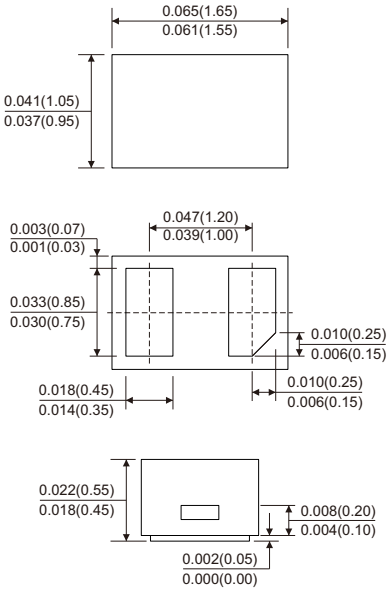
ESD4V5DH-HF

RoHS Device
Halogen Free

Features

- ESD/ transient protection of high speed data lines.
  IEC 61000-4-2 (ESD): ± 30kV (air), ± 30kV (contact).
  IEC 61000-4-4 (EFT): 40A (5/50ns).
  IEC 61000-4-5 (Lightning): 50A (8/20μs).
- Low reverse stand-off voltage.
- Protects one I/O or power line.
- Low clamping voltage.
- Low leakage current.

DFN1610-2L



Dimensions in inches and (millimeter)

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 T_A=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 = 8/20μs)	P_{PP}	1000	W
Peak pulse current (tp = 8/20μs)	I_{PP}	105	A
Junction temperature range	T_j	-55 to +125	°C
Storage temperature range	T_{STG}	-55 to +150	°C

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Reverse stand-off voltage		V_{RWM}			4.5	V
Reverse breakdown voltage	I_T = 1mA	$V_{(BR)}$	5.5		7.5	V
Reverse leakage current	V_{RWM} = 4.5V	I_R			0.5	μA
Clamping voltage	I_{PP} = 50A, tp = 8/20μs	V_C			8	V
	I_{PP} = 105A, tp = 8/20μs	V_C			10	
Junction capacitance	V_R = 0V, f = 1MHz	C_J		330		pF

Rating and Characteristic Curves (ESD4V5DH-HF)

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

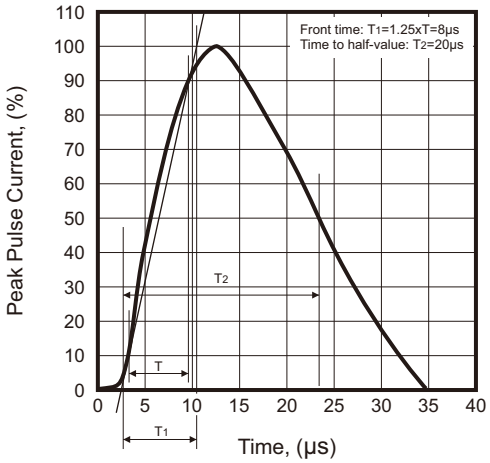


Fig.2 - ESD Pulse Waveform According to IEC 61000-4-2

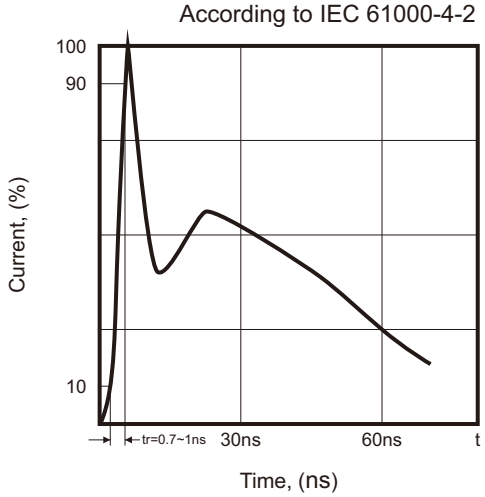
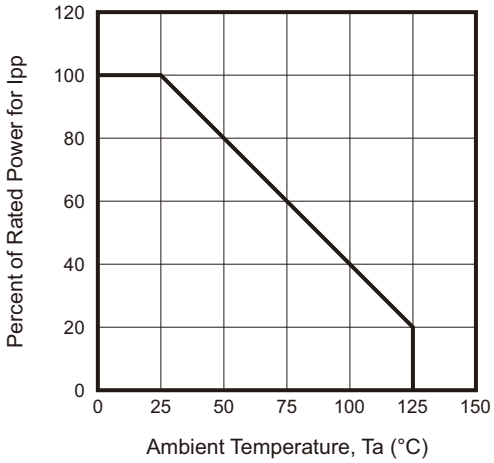
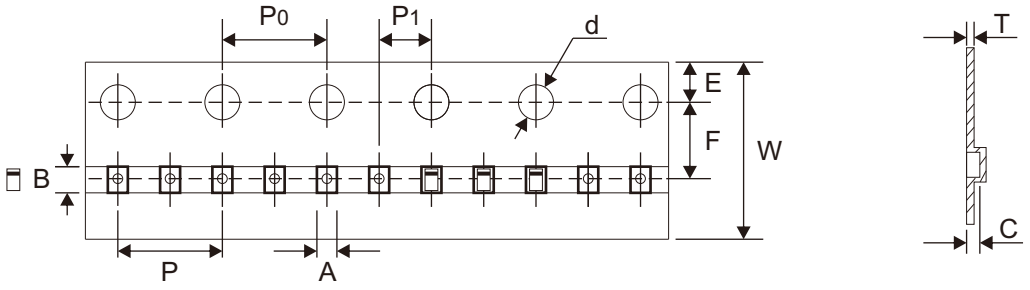
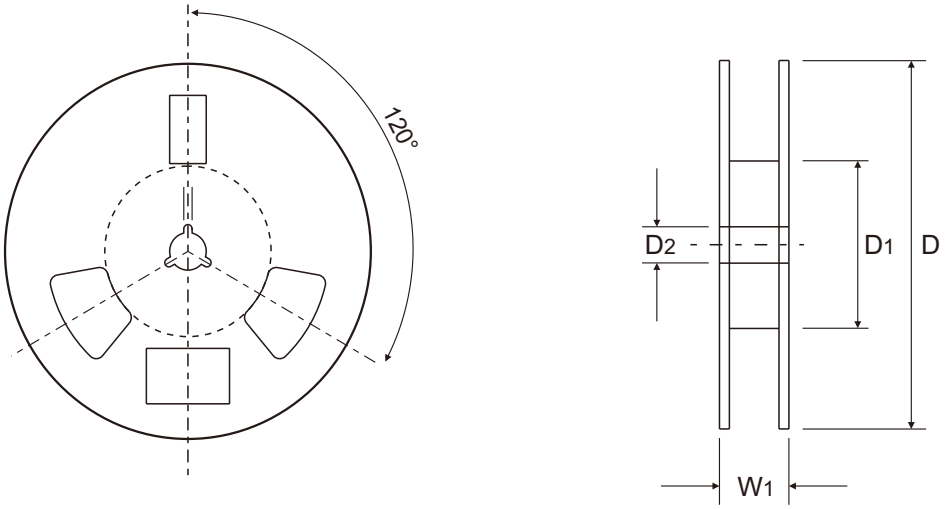


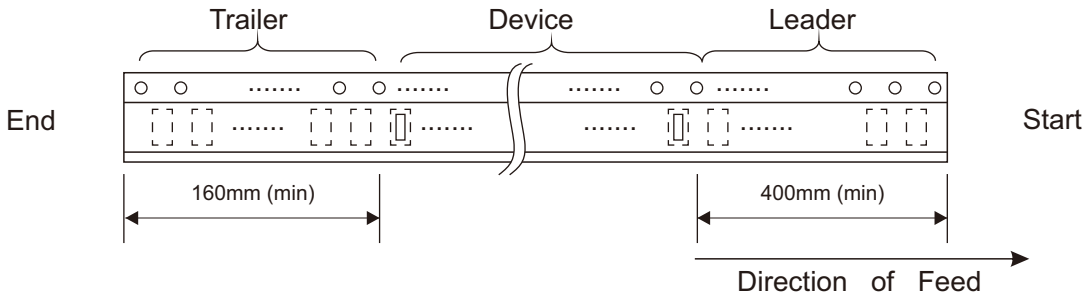
Fig.3 - Power Derating Curve



Reel Taping Specification







	SYMBOL	A	B	C	d	D	D1	D2
DFN1610 -2L	(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 − 0.20
	(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 − 0.008

	SYMBOL	E	F	P	P0	P1	T	W	W1
DFN1610 -2L	(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	12.50 ± 0.30
	(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	0.492 ± 0.012

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