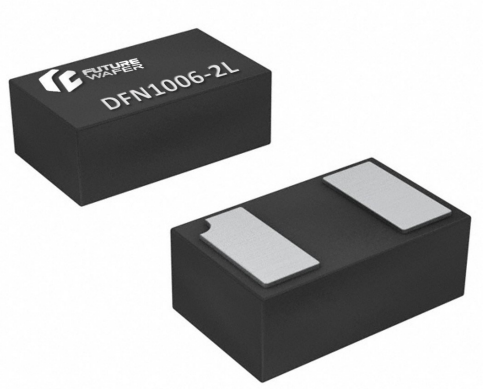
FutureWafer Evolution

FSD3328D

Latch Up ESD Protection Device

Applications

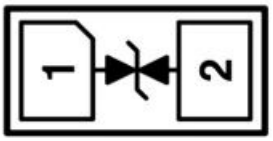
- Lan equipment
- Video
- DVI
- High Speed Data Line
- Ethernet
- USB 2.0 Power and Data line Protection
- Smart Phone



DFN1006-2L

Feature List

- Max Operating Voltage V_{RWM}:3.3V
- ESD Protection:Level 4
- Low Clamping Voltage
- 35 Watts Peak Pulse Power per line(tp=8/20uS)
- Ultra Low Capacitance:5pf typ.
- Protection one line I/O port



IEC Compatibility

- ESD / Transient Protection According to:
  - IEC61000-4-2(ESD) : ±25KV(Contact) / ±25KV(Air)
  - IEC61000-4-4(EFT) : ±2.5KV / ±50A (5/50ns)
  - IEC61000-4-5(Surge) : ±5A (8/20us)

Mechanical Characteristics

- Molded JEDEC Package
  - DFN 1006
- Packing: Tape and Reel
- Flammability rating UL 94V-0
- Halogen Free
- JEDEC MSL Classification :Level 1

Absolute Maximum Ratings

Maximum Ratings@ TA = 25°C Unless Otherwise Specified

Parameter	Symbol	Test Condition	Value			Units
			Min.	Typ.	Max.	
Working Voltage	V_{RWM}		-3.3	-	+3.3	V
Peak Pulse Power	P_{PP}	8/20 us,	-	-	60	Watts
Peak Pulse Current	I_{PP}	Current Waveform	-5	-	+5	A
Electrostatic Discharge	$V_{ESD (Contact)}$	R = 330Ω,C = 150pF	-25	-	+25	KV
	$V_{ESD (Air)}$					
Operating Temperature	T_{OP}		-55	-	+150	°C
Storage Temperature	T_{STG}		-65	-	+150	

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Electrical Characteristics

DC Characteristics

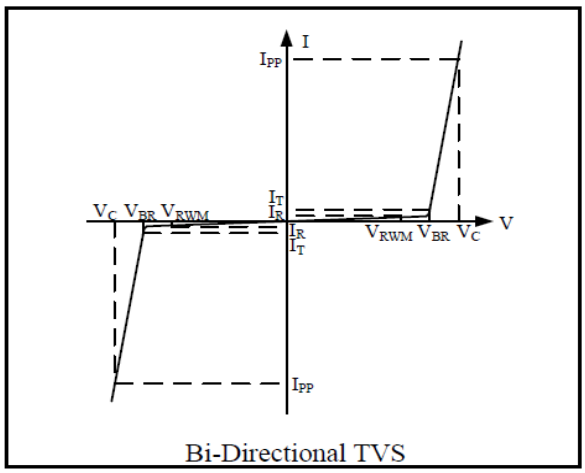
Parameter	Symbol	Test Condition	Value			Units
			Min.	Typ.	Max.	
Breakdown Voltage	V_{BR}	I_t = 1mA , I/O to GND	3.5	-	-	V
Clamping Voltage	V_{CL}	I_{PP} = 1A , I/O to GND	-	-	6.5	
		I_{PP} = 5A , I/O to GND	-	-	9.5	
Leakage Current	I_L	V = 3.3V , I/O to GND	-	-	0.1	uA

AC Characteristics

Parameter	Symbol	Test Condition	Value			Units
			Min.	Typ.	Max.	
Line Capacitance	C_L	V = 0V,f = 1MHz, I/O to GND	-	5.5	7.0	pF

Electrical Characteristics

Symbol	Parameter
V_{RWM}	Nominal Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Reverse Breakdown Voltage @ I_T
I_T	Test Current for Reverse Breakdown
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Maximum Peak Pulse Current
C_{ESD}	Parasitic Capacitance
V_R	Reverse Voltage
f	Small Signal Frequency



Bi-Directional TVS

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Typical Characteristics Diagrams

Fig. 1 Non-repetitive Peak Pulse Power $_{V.S}$ Pulse Time

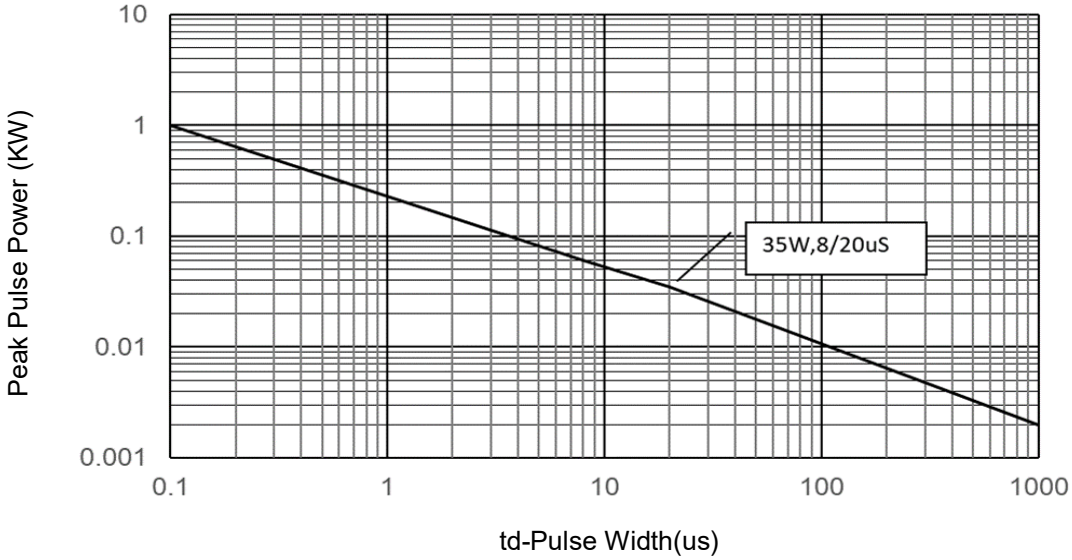


Fig. 2 Power Derating Curve

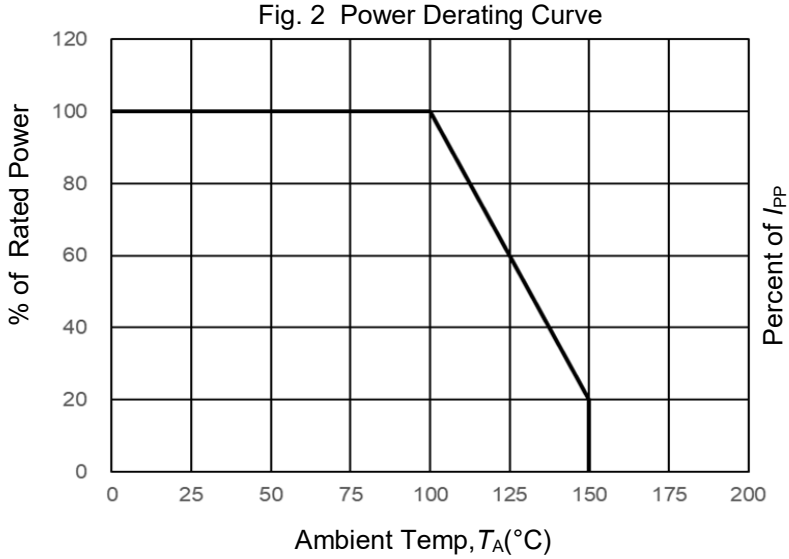


Fig. 3 Pulse Waveform

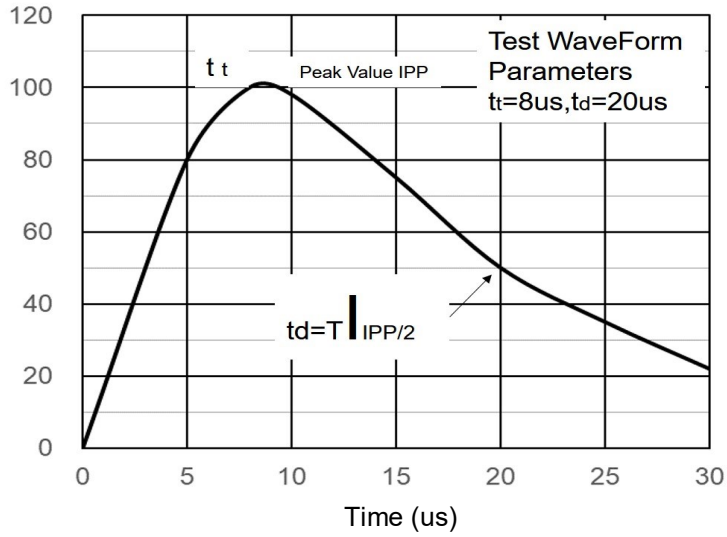


Fig. 4 Clamping Voltage vs. Peak Pulse Current

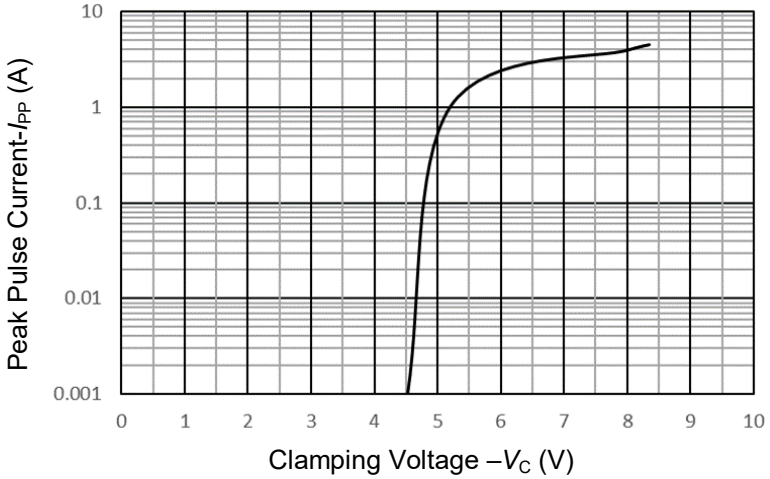
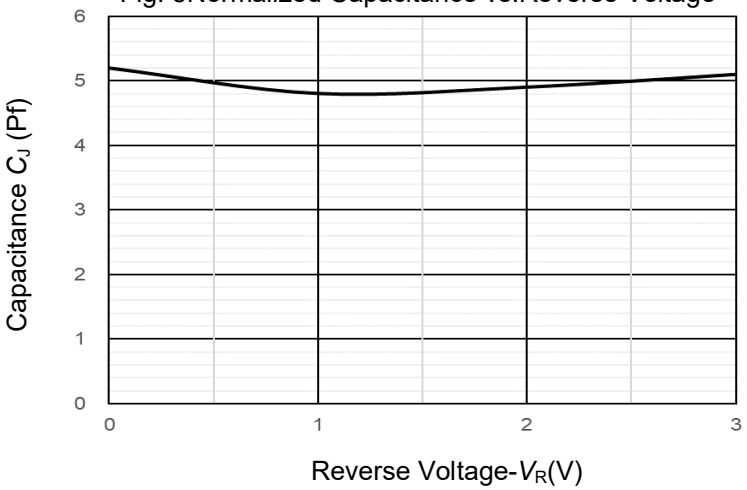


Fig. 5Normalized Capacitance vs.Reverse Voltage



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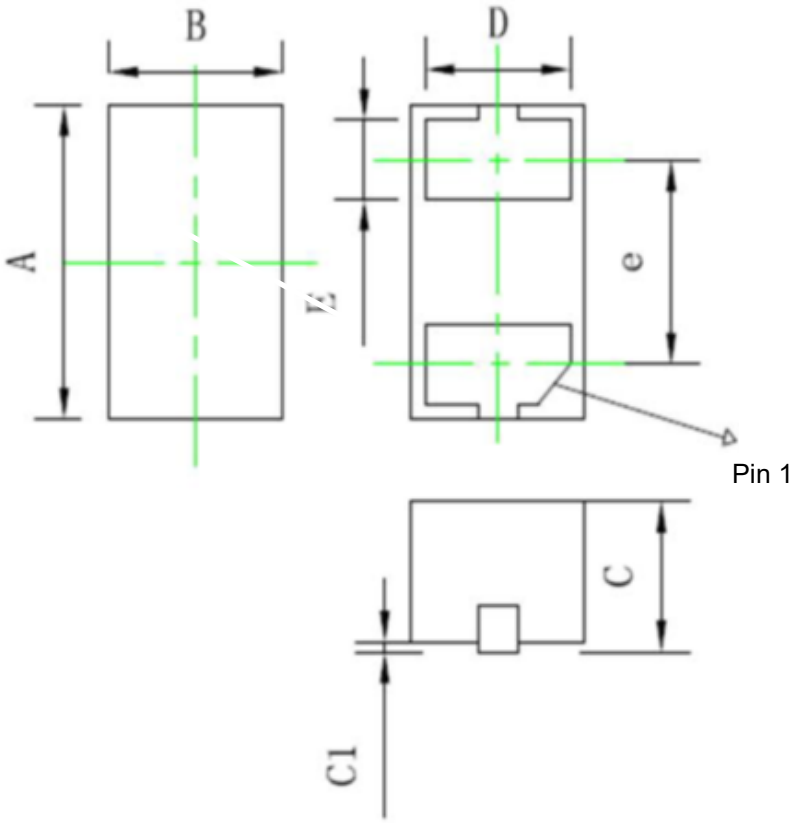
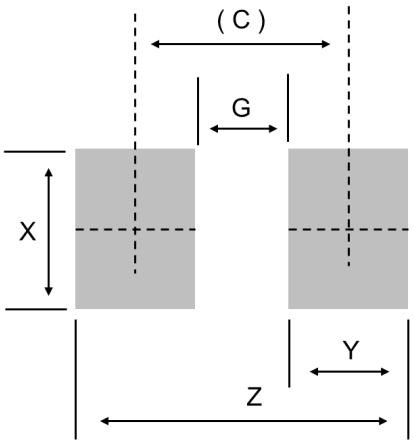
Package Information-DFN1006



DFN1006-2L		
Symbol	Min	Max
A	0.95	1.05
B	0.55	0.65
C	0.40	0.50
C1	-	0.05
D	0.45	0.55
e	0.65 BSC	
E	0.20	0.30

Unit:mm

Pad Layout



Dimensions		
DIM	Inches	Millimeters
(C)	.033	0.85
G	.012	0.30
X	.024	0.60
Y	.022	0.55
Z	.055	1.40

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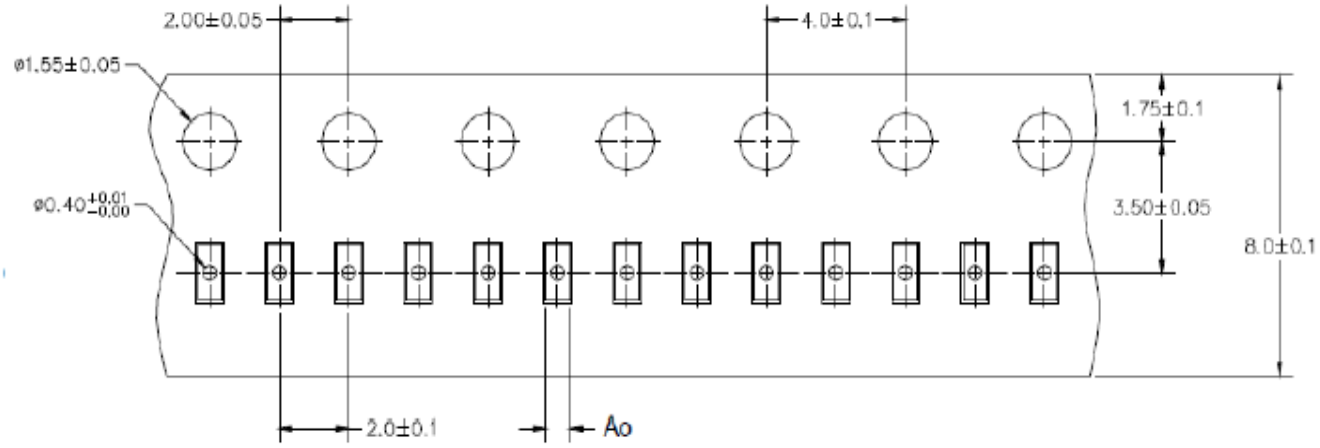
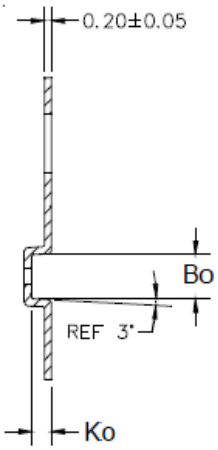
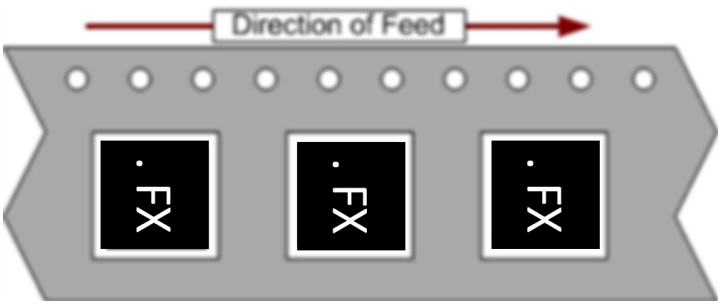
Tape & Reel information





A0	B0	K0
0.69 +/-0.10 mm	1.19 +/-0.10 mm	0.66 +/-0.10 mm



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Ordering Information

Part No.	Marking	Quantity	Packing
FSD3328D	FX	10,000pcs	7” Reel

History

Version	Date	File No.	Recording	Basis
A	18-May-2018	F11821L	New Create	Market
2.0	25-May-2021	F11821L	Update Version	System

FUTURE WAFER

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