4-Line ESD Protection Diode Array

Features

- IEC 61000-4-2 (ESD) ±30kV (air), ±30V (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 25A (8/20μs)
- Protects up to four I/O lines
- Low leakage current
- Low operating voltage: 3.3V
- Low clamping voltage

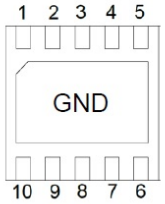
Applications

- RJ45 Connectors
- Analog Video
- 10/100/1000 Ethernet
- T1/E1 Secondary Protection
- T3/E3 Secondary Protection

Mechanical Characteristics

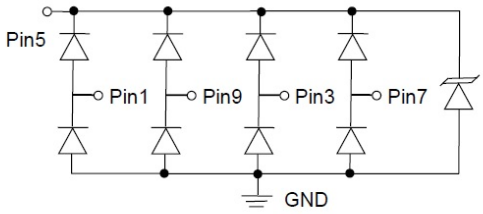
- Package: DFN2626-10L (2.6x2.6x0.55mm)
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity Level: Level 3
- RoHS Compliant.

Schematic & PIN Configuration



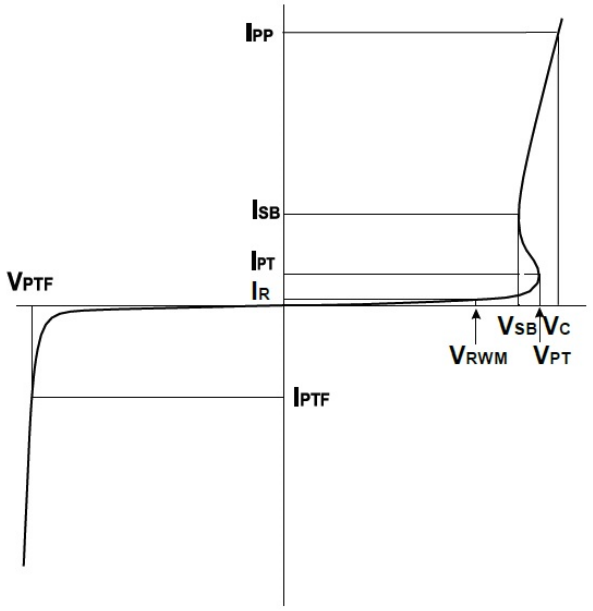
Pin	Identification
1,3,7,9	I/O Lines
2,4,6,8,10	NC
5	NC (Do not connect this pin to a DC supply)
Center Tab	Ground

Circuit Diagram



Absolute Maximum Ratings (T_A = 25℃ unless otherwise specified)			
Parameter	**Symbol**	**Value**	**Unit**
Peak Pulse Power (tp = 8/20μs)	P_{PP}	450	W
Peak Pulse Current (tp = 8/20μs)	I_{PP}	25	A
ESD per IEC 61000−4−2 (Air)	V_{ESD}	±30	KV
ESD per IEC 61000−4−2 (Contact)		±30	KV
Operating Temperature Range	T_J	-55 ~ 125	℃
Storage Temperature Range	T_{STG}	-55 ~ 150	℃

Electrical Parameters (T_A = 25℃)	
Symbol	Parameter
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{PT}	Punch-through Breakdown Voltage @ I_{PT}
V_{SB}	Snap-Back Voltage @ I_{SB}
I_{SB}	Snap-Back Current
I_{PT}	Test Current
V_{PTF}	Forward Punch-through Breakdown Voltage @ I_{PTF}
I_{PTF}	Forward Test Current



Electrical Characteristics (T_A = 25℃ unless otherwise specified)						
Parameter	**Symbol**	**Test Conditions**	**Min.**	**Typ.**	**Max.**	**Units**
Reverse Working Voltage	V_{RWM}				3.3	V
Punch-through Voltage	V_{PT}	I_{PT} = 5μA	3.5			V
Snap-Back Voltage	V_{SB}	I_{SB} = 50mA	2.8			V
Reverse leakage current	I_R	V_{RWM} = 3.3V			500	nA
Clamping Voltage	V_C	I_{PP} =1A,tp= 8/20μs,any I/O pin to GND			5.5	V
Clamping Voltage	V_C	I_{PP} =10A,tp= 8/20μs,any I/O pin to GND			9.5	V
Clamping Voltage	V_C	I_{PP} =25A,tp= 8/20μs,any I/O pin to GND			18	V
Junction capacitance	C_J	V_R =0V, f = 1MHz, between I/O pins		2.0		pF
Junction capacitance	C_J	V_R =0V, f = 1MHz, any I/O pin to GND		3.2	5.0	pF

Typical Performance Characteristics (T_A = 25℃ unless otherwise specified)

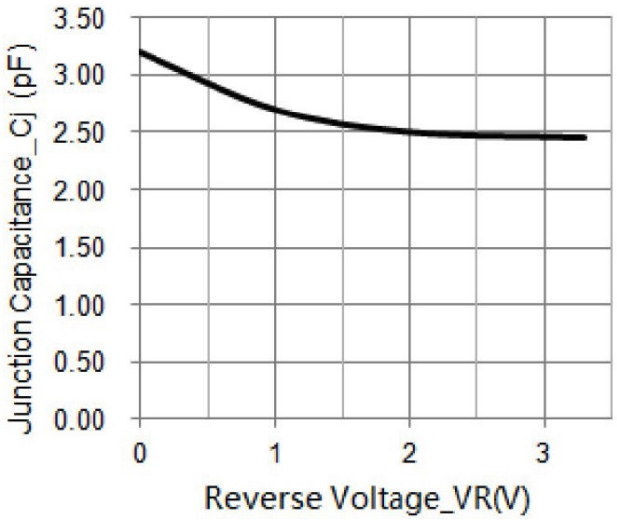


Fig 1. Junction Capacitance .vs. Reverse Voltage

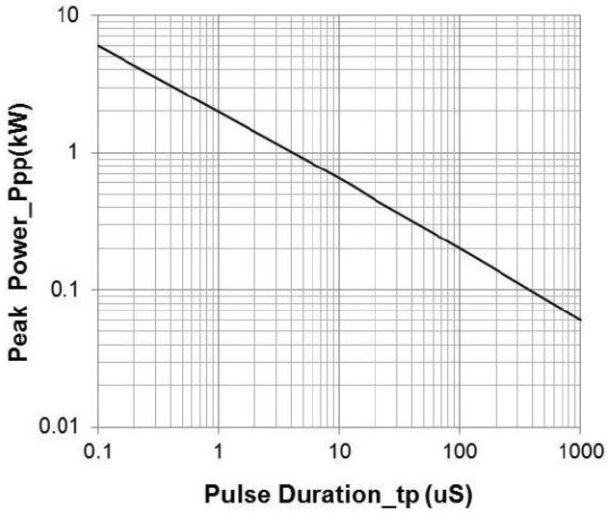


Fig 2. Peak Pulse Power vs. Pulse Time

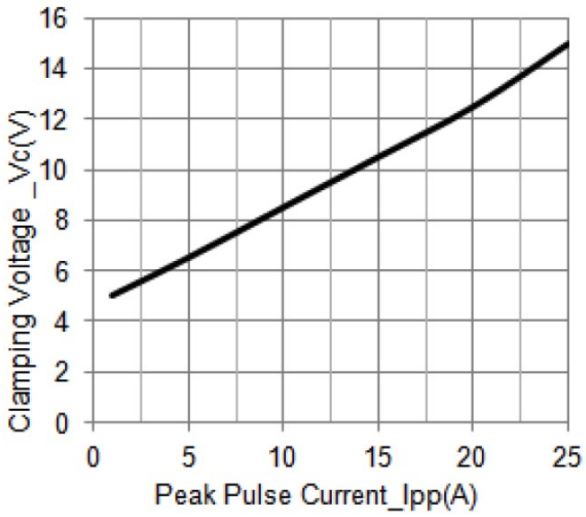


Fig 3. Clamping Voltage vs. Peak Pulse Current

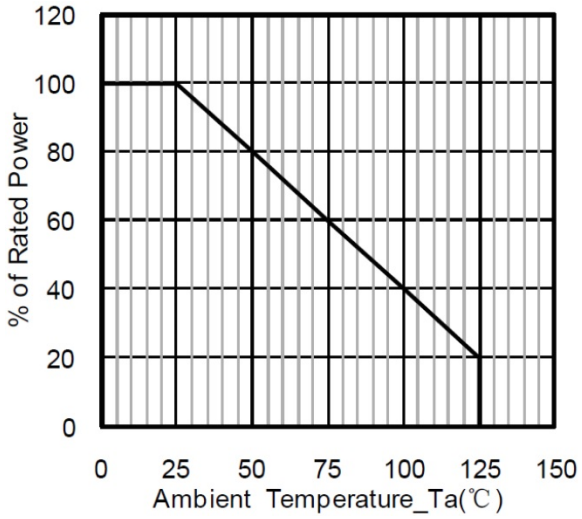


Fig 4. Power Derating Curve

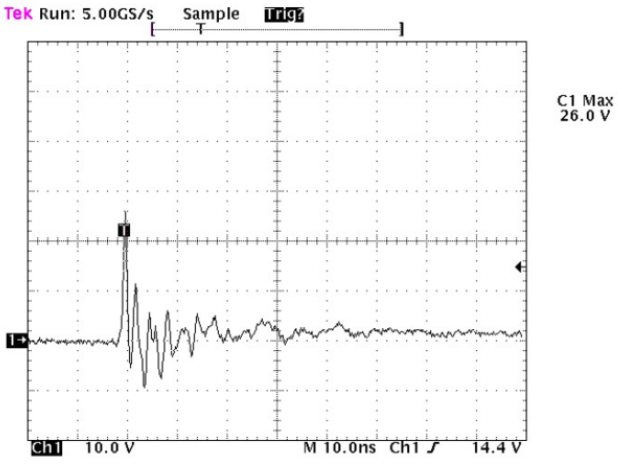


Fig 5. ESD Clamping Voltage
8KV Contact per IEC 61000-4-2

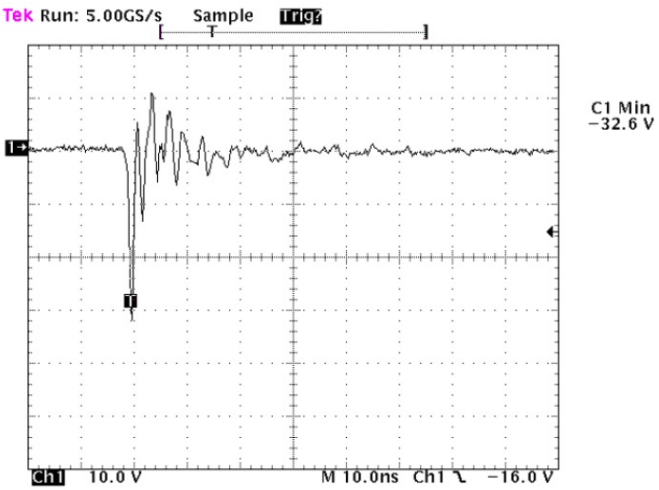
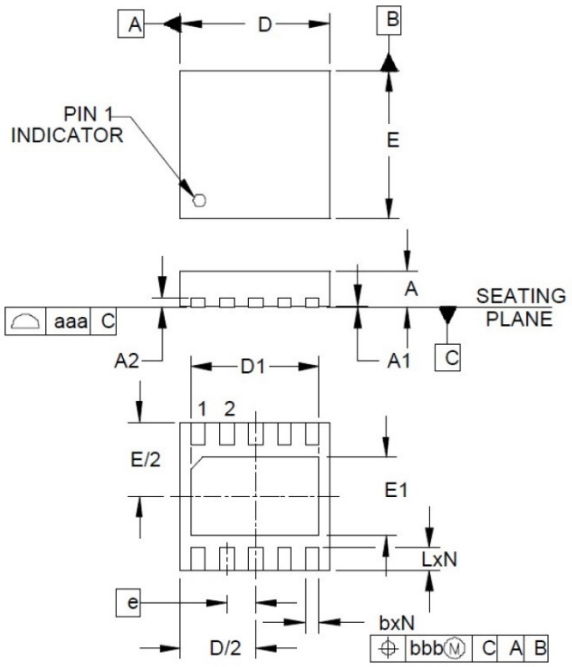


Fig 6. ESD Clamping Voltage
-8KV Contact per IEC 61000-4-2

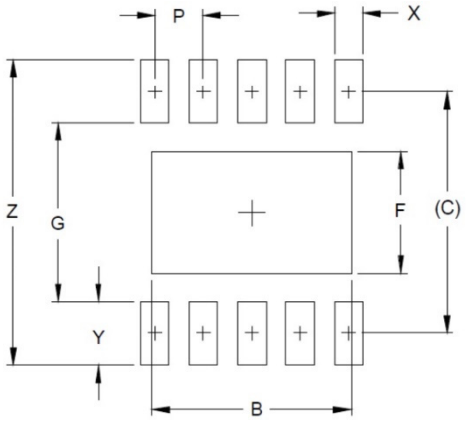
Package outline dimensions

Symbol	Dimensions in millimeters		
	Min	Nom	Max
A	0.50	0.55	0.60
A1	0.00	0.03	0.05
A2		(0.17)	
b	0.20	0.25	0.30
D	2.50	2.60	2.70
D1	2.00	2.15	2.25
E	2.50	2.60	2.70
E1	1.11	1.26	1.36
e		0.50 BSC	
L	0.30	0.35	0.40
aaa		0.08	
bbb		0.10	

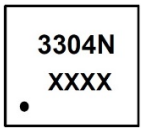


Suggested Land Pattern

Symbol	Dimensions in millimeters
B	2.05
C	2.50
F	1.26
G	1.85
P	0.50
X	0.30
Y	0.65
Z	3.15



Marking Code



Device Marking Code = 3304N
Data Code = XXXX

Ordering information

Part Number	Package	Base qty	Reel Size	Delivery mode
		(pcs)	(inch)	
SC3V3Y4UDB	DFN2626-10L	3,000	7	Tape and reel