

4-Line Ultra Low Capacitance TVS Diode Array

Features

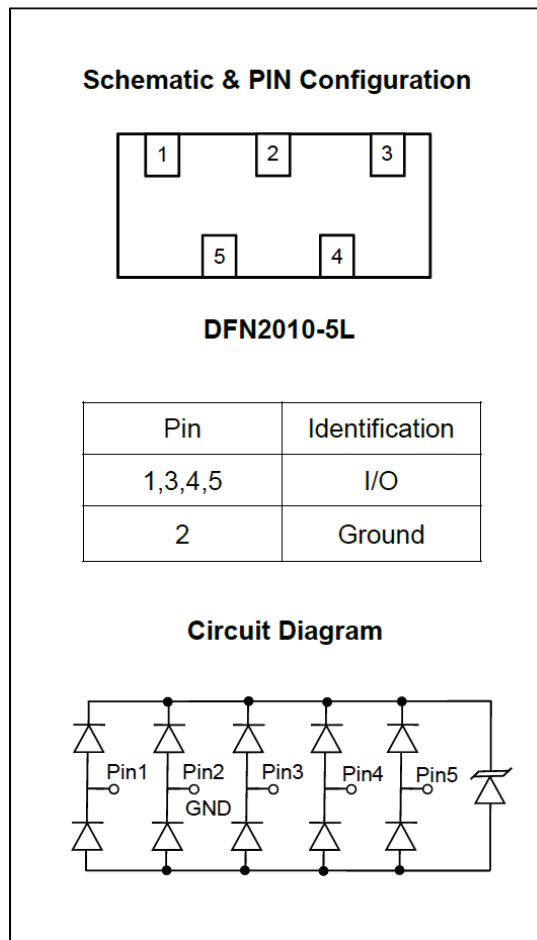
- IEC 61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 8\text{kV}$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 3A (8/20 μs)
- Up to 4 data lines protects
- Ultra low capacitance
- Operating voltage: 5V
- Low leakage current
- Ultra low clamping voltage

Applications

- Mobile Display Digital Interface (MDDI)
- Photodetector Protection
- Infiniband Transceiver Protection
- HBT Power Amplifier Protection
- FireWire Ports
- USB3.0/3.1, Type C

Mechanical Characteristics

- Package : DFN2010-5L, molded plastic.
- Epoxy : UL 94V-0 rate flame retardant.
- Terminals : solderable per MIL-STD-750, method 2026.
- RoHS Compliant.

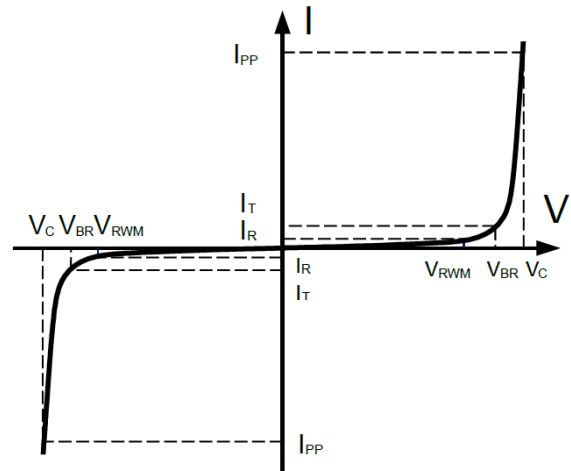


Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{PP}	30	W
Peak Pulse Current ($t_p = 8/20\mu\text{s}$)	I_{PP}	3	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 15	KV
ESD per IEC 61000-4-2 (Contact)		± 8	KV
Operating Temperature Range	T_J	-40 ~ 125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ 150	$^\circ\text{C}$

Electrical Parameters ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

Symbol	Parameter
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Reverse Stand-Off Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current



Electrical Characteristics ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Reverse Standoff Voltage	V_{RWM}	Any I/O pin to ground			5	V
Reverse breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$, any I/O pin to ground	6			V
Reverse leakage current	I_R	$V_{RWM} = 5\text{V}$, any I/O pin to ground			0.2	μA
Clamping Voltage	V_C	$I_{PP} = 3\text{A}$, $t_p = 8/20\mu\text{s}$, any I/O pin to ground		8	10	V
Junction capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, any I/O pin to ground		0.4	0.5	V
Junction capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, between I/O pin		0.2	0.3	pF

Typical Performance Characteristics ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

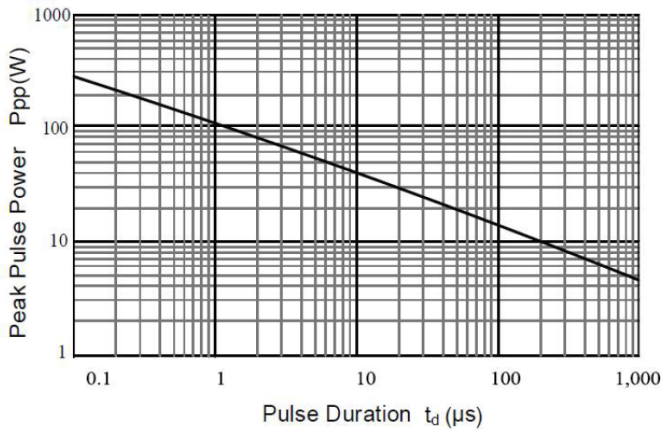


Fig 1. Peak Pulse Power vs. Pulse Time

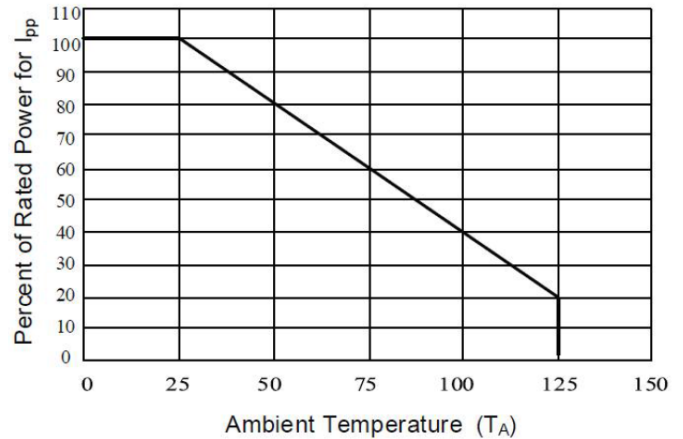


Fig 2. Power Derating Curve

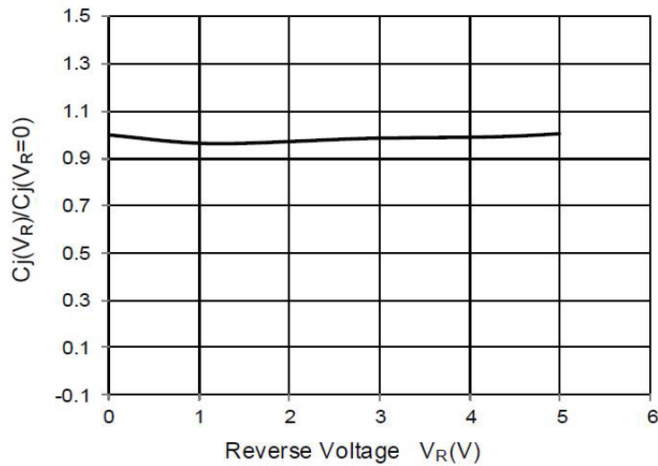


Fig 3. Junction Capacitance vs. Reverse Voltage

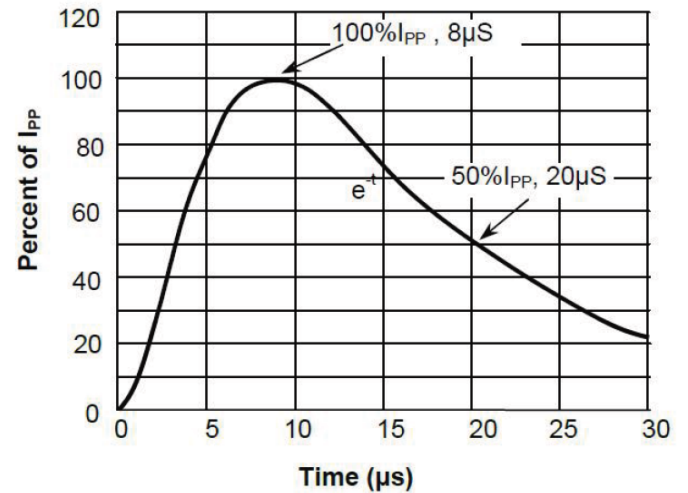


Fig 4. 8/20μs Pulse Waveform

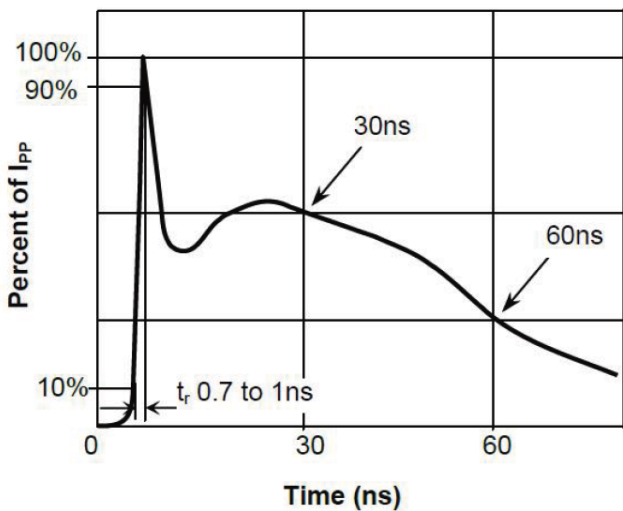


Fig 5. ESD(IEC 61000-4-2) Pulse Waveform

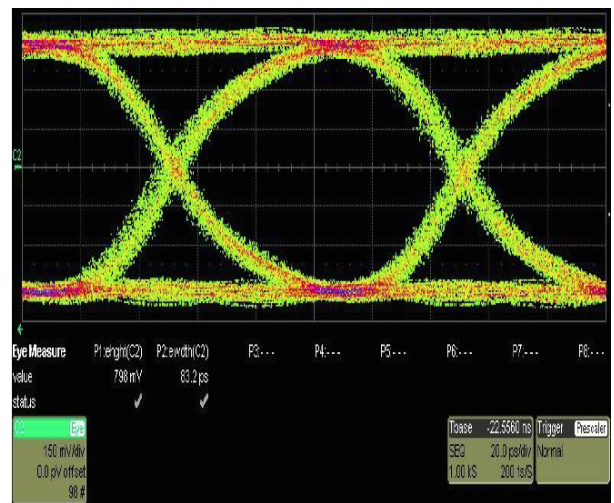


Fig 6. Eye Diagram-USB3.1 at 10Gbps per channel

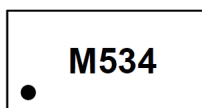
DFN2010-5L Package Outline Drawing

Symbol	Dimensions in millimeters		
	Min.	Nom.	Max.
A	0.45	0.50	0.55
A1	0.00	0.02	0.05
b	0.15	0.20	0.25
D	1.95	2.00	2.08
E	0.95	1.00	1.08
e	0.40 BSC		
e1	0.80 BSC		
L	0.25	0.30	0.35
N	5		
aaa	0.08		
bbb	0.10		

Suggested PAD Layout

Symbol	Dimensions in millimeters
C	0.85
G	0.25
P	0.40
P1	0.80
X	0.20
Y	0.60
Z	1.45

Marking Code



Ordering information

Part Number	Package	Base qty	Reel Size	Delivery mode
		(pcs)	(inch)	
SC05L4BDL	DFN2010-5L	3,000	7	Tape and reel