

SEDFN05V4
Ultra Low Capacitance TVS Arrays

Revision:A

Features

- Package design optimized for high speed lines
- Flow-Through design
- Protects four I/O lines
- Low capacitance: 0.3pF typical (I/O to I/O)
- Low clamping voltage
- Low operating voltage: 5V
- Solid-state silicon-avalanche technology

Applications

- High Definition Multi-Media Interface (HDMI).
- Digital Visual Interface (DVI)
- DisplayPort™ Interface
- MDDI Ports
- LVDS
- Serial ATA
- PCI Express

General Description

SEDFN05V4 are ultra low capacitance TVS arrays designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients)

Complies with the following standards

IEC61000-4-2

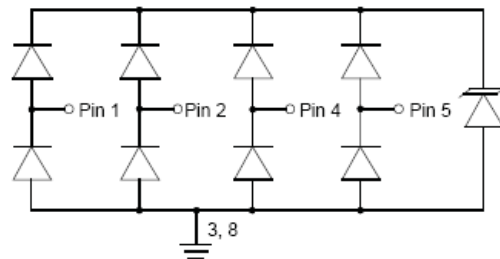
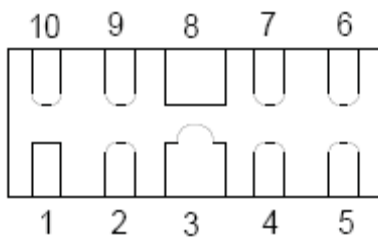
Level 4 15 kV (air discharge)

8 kV (contact discharge)

MIL STD 883E - Method 3015-7 Class 3

25 kV HBM (Human Body Model)

Functional diagram

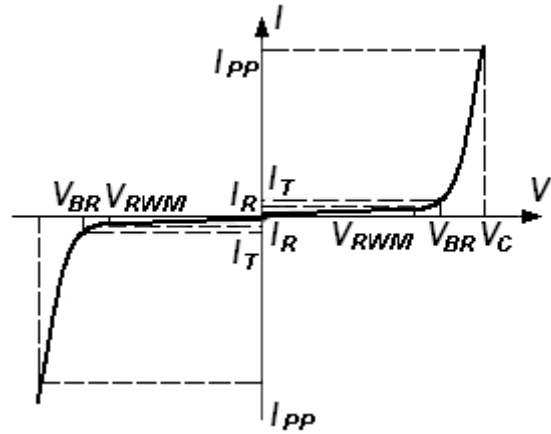


Absolute Maximum Ratings

Symbol	Parameter	Value	Units
P pk	Peak Pulse Power (tp = 8/20μs)	150	Watts
I PP	Peak Pulse Current (tp = 8/20μs)	5	A
V ESD	ESD per IEC 61000-4-2 (Air)	+/- 17	kV
	ESD per IEC 61000-4-2 (Contact)	+/- 12	
TJ	Operating Temperature	-55 to +125	°C
T STG	Storage Temperature	-55 to +150	°C

Electrical Parameter

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

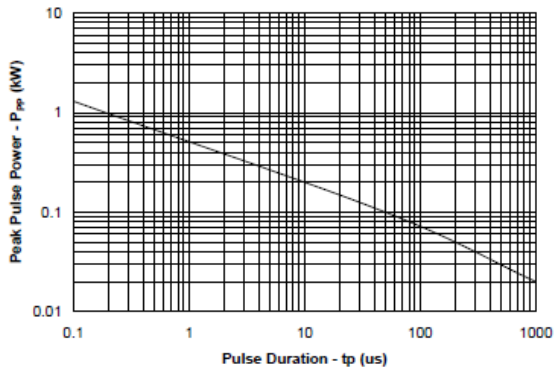


Electrical Characteristics (Tamb=25°C)

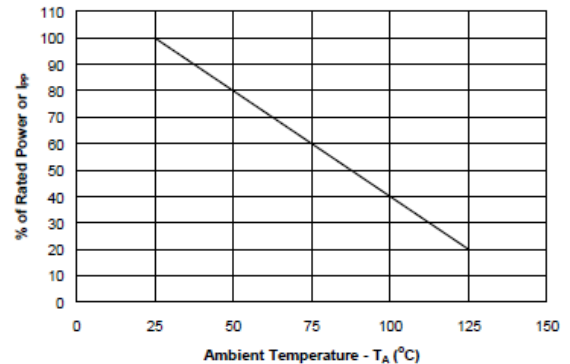
	V_{BR}	V_C	V_{RWM}	I_{RWM}	C Typ 0v bias
	Min.				
	V				
SEDFN05V4	6	15	5	1	0.30

Typical Characteristics

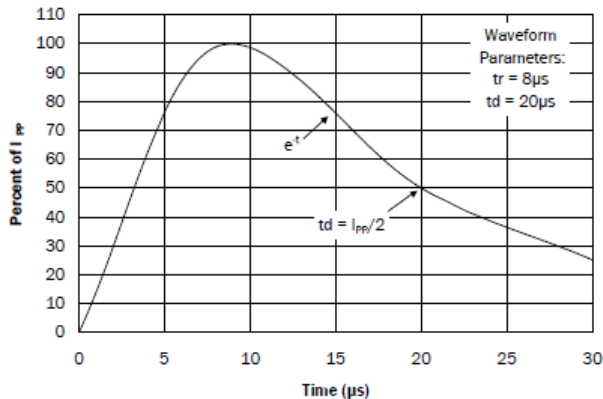
Non-Repetitive Peak Pulse Power vs. Pulse Time



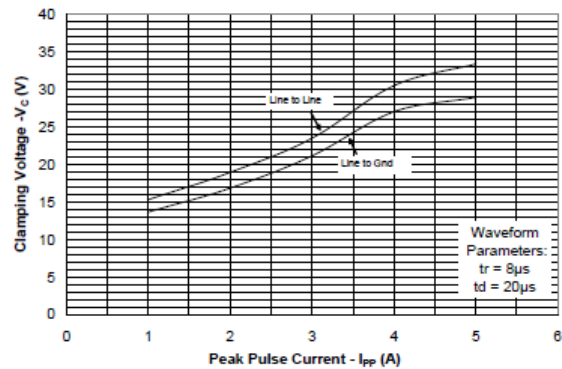
Power Derating Curve



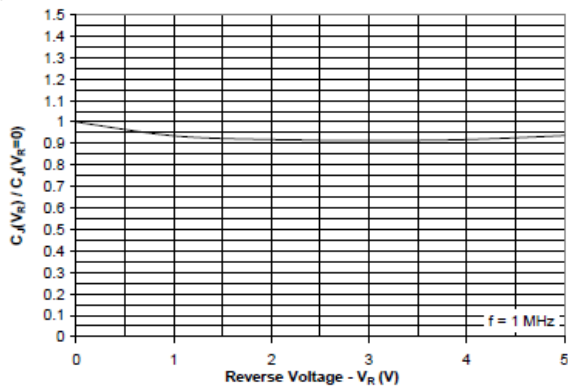
Pulse Waveform



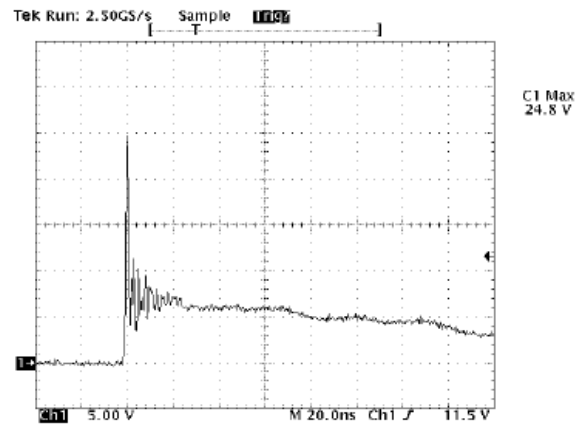
Clamping Voltage vs. Peak Pulse Current



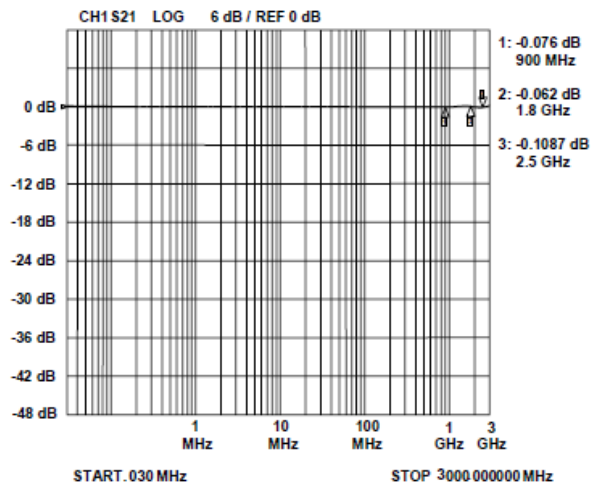
Normalized Capacitance vs. Reverse Voltage



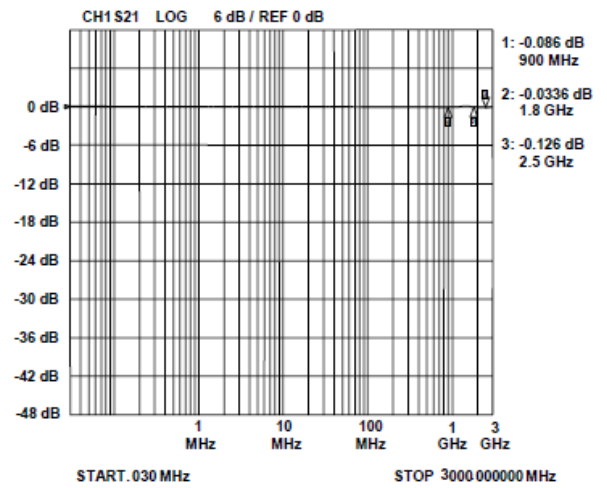
ESD Clamping for +8kV pulse per IEC 61000-4-2



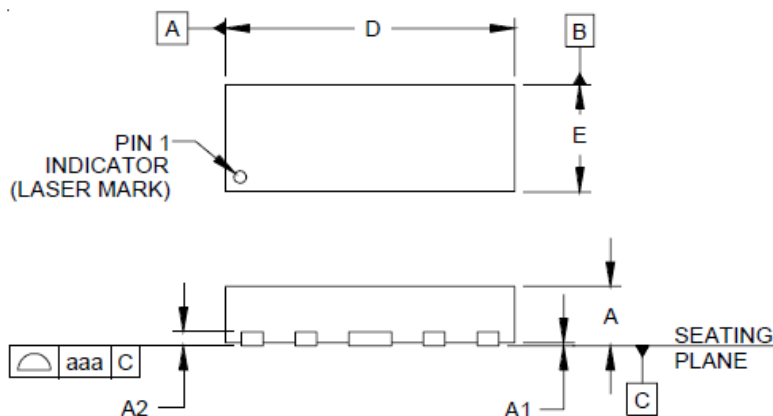
Insertion Loss S21 - I/O to I/O



Insertion Loss S21 - I/O to GND

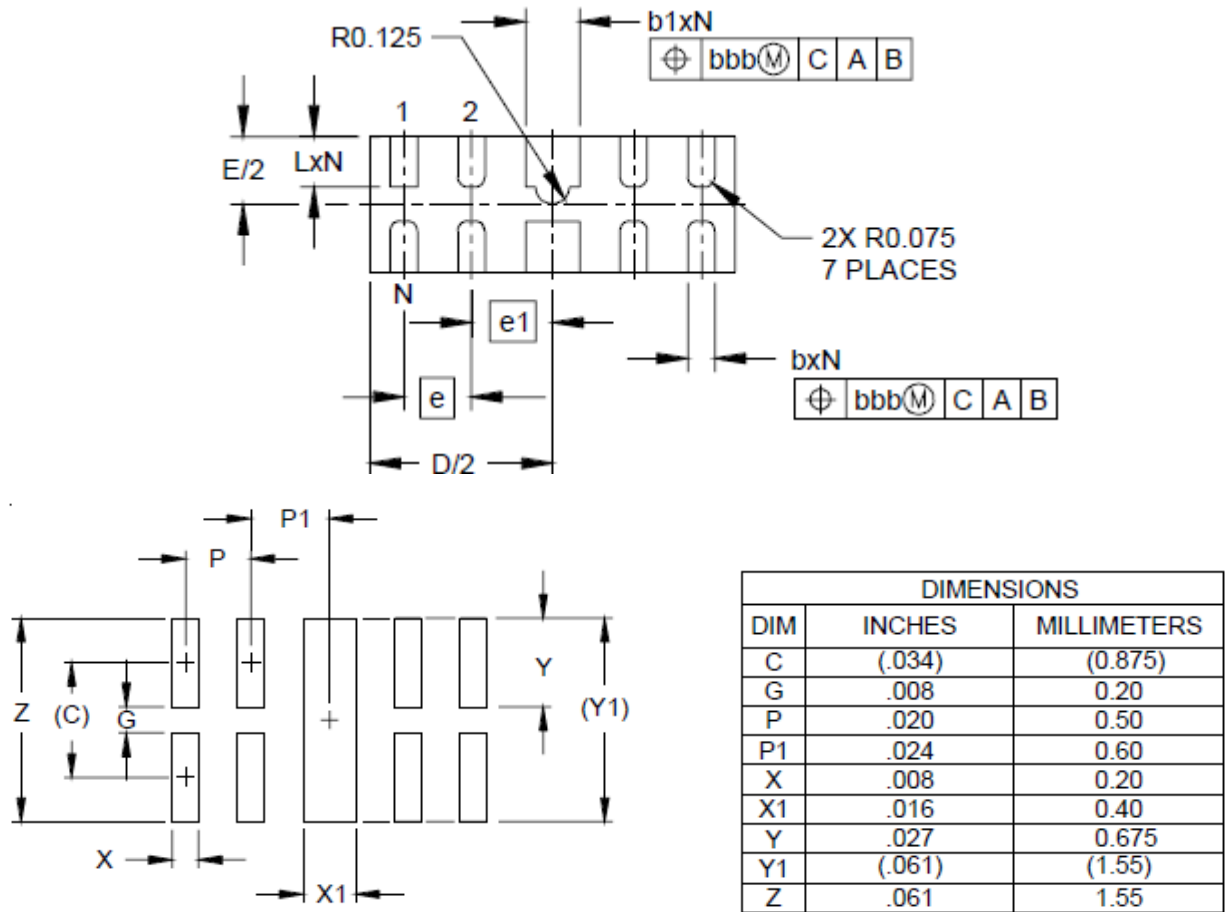


DFN-10 Mechanical Data



DIM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.020	.023	.026	0.50	0.58	0.65
A1	0.00	.001	.002	0.00	0.03	0.05
A2		(.005)			(0.13)	
b	.006	.008	.010	0.15	0.20	0.25
b1	.014	.016	.018	0.35	0.40	0.45
D	.102	.106	.110	2.60	2.70	2.80
E	.035	.039	.043	0.90	1.00	1.10
e	.020 BSC			0.50 BSC		
e1	.024 BSC			0.60 BSC		
L	.012	.015	.017	0.30	0.38	0.425
N	10			10		
aaa	.003			0.08		
bbb	.004			0.10		

SEDFN05V4



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