

**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**

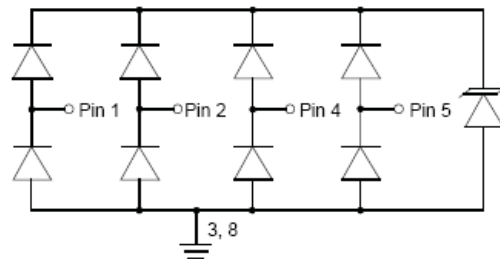
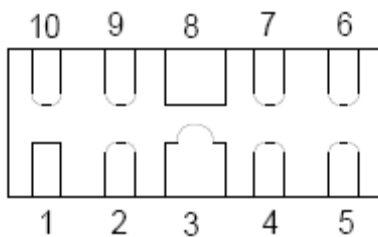
**Level 4 15 kV (air discharge)**

**8 kV (contact discharge)**

**MIL STD 883E - Method 3015-7 Class 3**

**25 kV HBM (Human Body Model)**

**Functional diagram**



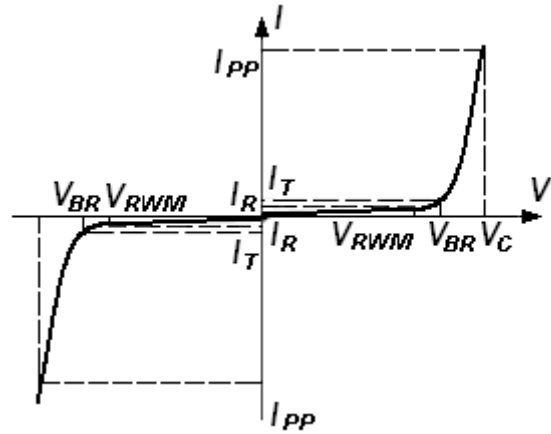
**Absolute Maximum Ratings**

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

# SEDFN05V4

## 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 @ $I_T$

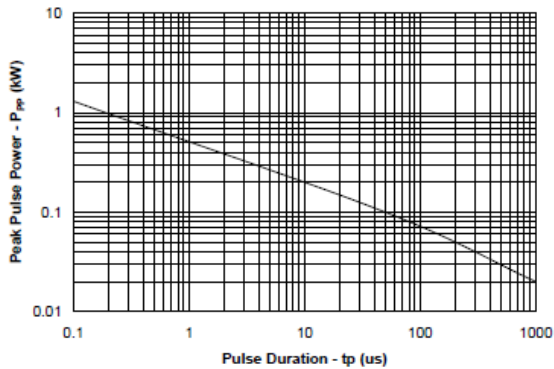


## Electrical Characteristics (Tamb=25°C)

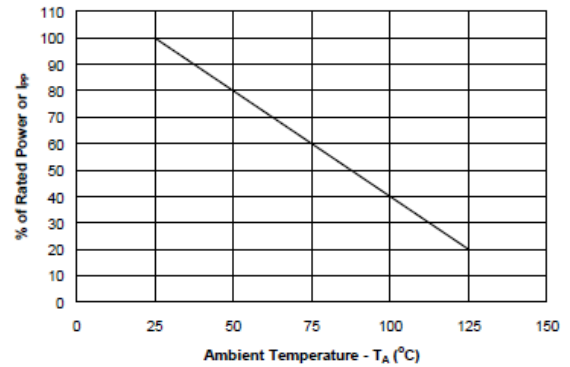
	$V_{BR}$	$V_C$	$V_{RWM}$	$I_{RWM}$	C Typ 0v bias
	Min.				
	V				
SEDFN05V4	6	15	5	1	0.30

## Typical Characteristics

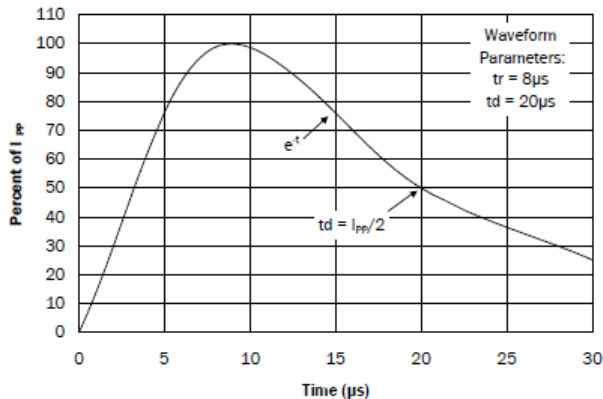
Non-Repetitive Peak Pulse Power vs. Pulse Time



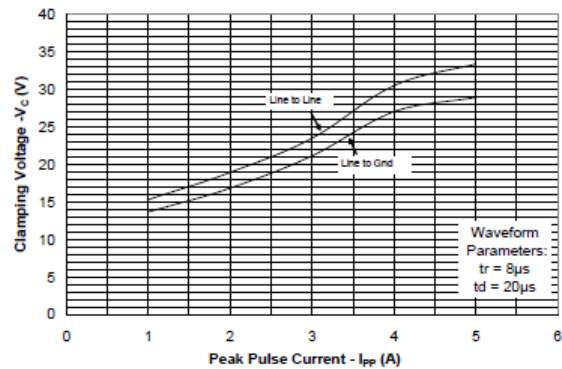
Power Derating Curve



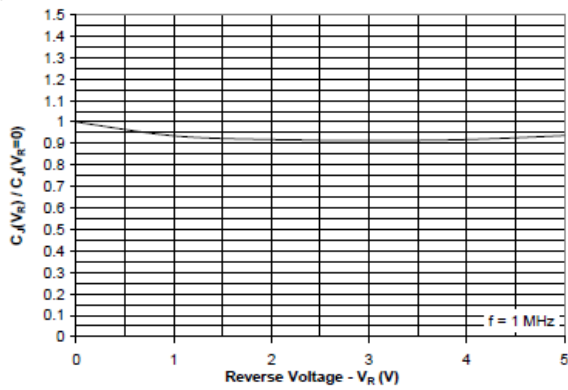
Pulse Waveform



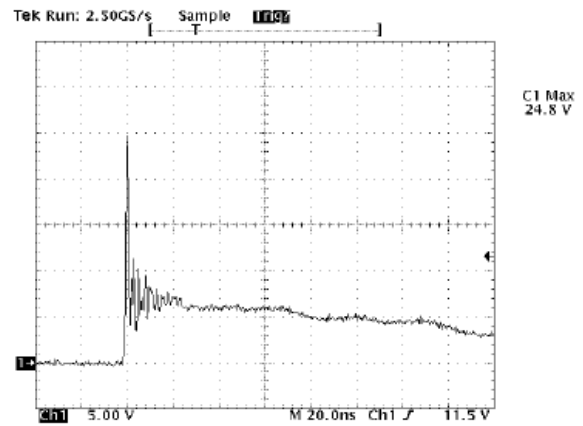
Clamping Voltage vs. Peak Pulse Current



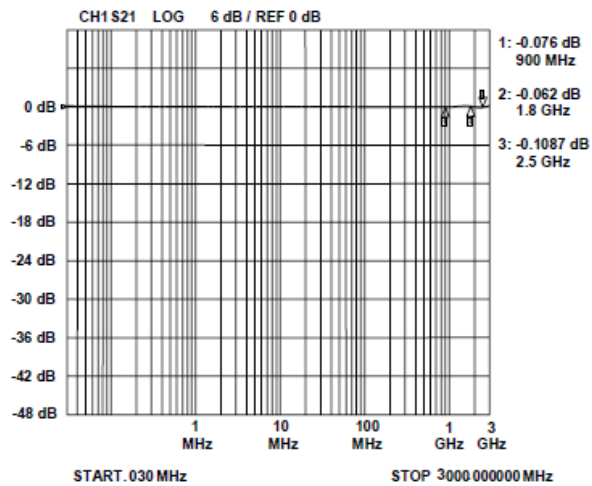
### Normalized Capacitance vs. Reverse Voltage



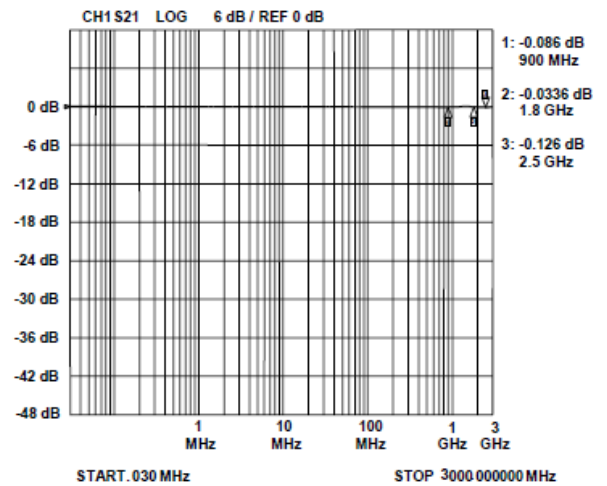
### ESD Clamping for +8kV pulse per IEC 61000-4-2



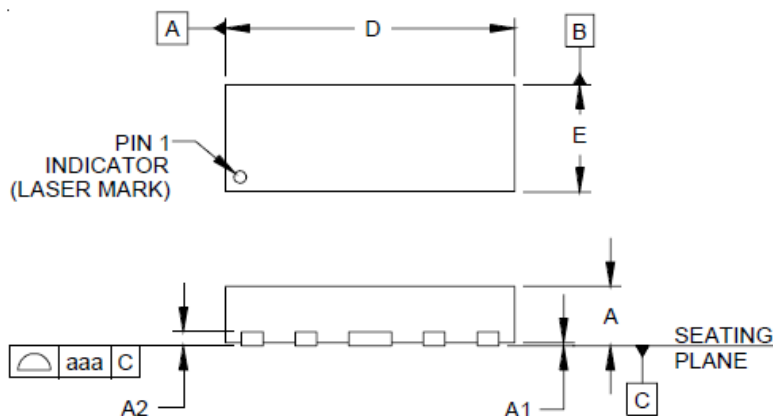
### Insertion Loss S21 - I/O to I/O



### Insertion Loss S21 - I/O to GND

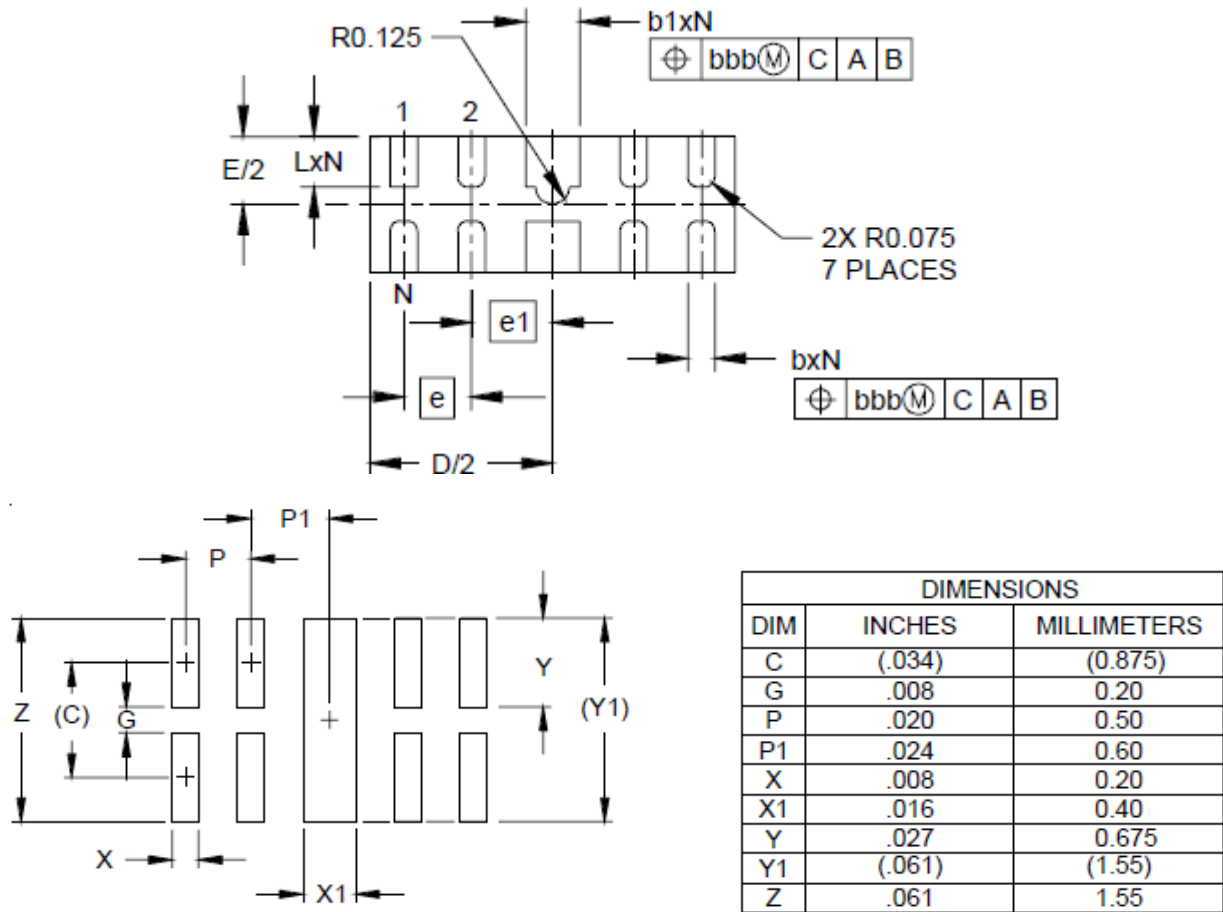


## DFN-10 Mechanical Data



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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## SHANGHAI SINO-IC MICROELECTRONICS CO., LTD

**Add:** Building 3, Room 3401-03, No.200 Zhangheng Road, ZhangJiang Hi-Tech Park, Pudong, Shanghai 201203, China

**Phone:** +86-21-33932402 33932403 33932405 33933508 33933608

**Fax:** +86-21-33932401

**Email:** [webmaster@sino-ic.com](mailto:webmaster@sino-ic.com)

**Website:** <http://www.sino-ic.com>