

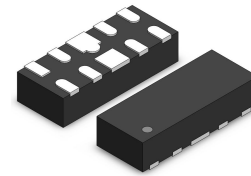
# Transient Voltage Suppressors for ESD Protection

## SE05NRD34GU

### Features

- ◆ Working voltage: 5.0V
- ◆ Low capacitance: 0.60pF (Typical)
- ◆ Low leakage current: 1.0 $\mu$ A @  $V_{RWM}$
- ◆ Low clamping voltage
- ◆ Response Time is < 1 ns

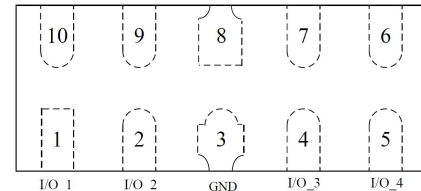
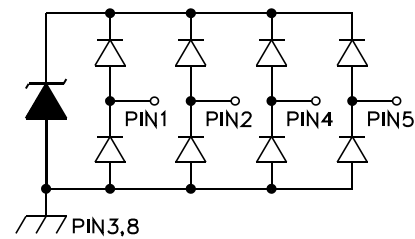
### DFN2510-10L



### Applications

- ◆ USB 3.0, USB 2.0
- ◆ HDMI 1.3/1.4, Display Port 1.3, eSATA
- ◆ Unified Display Interface (UDI)
- ◆ Digital Visual Interface (DVI)
- ◆ High Speed Serial Interfaces

### Pin Configuration



### Mechanical Characteristics

- ◆ DFN2510-10L Package
- ◆ Molding Compound Flammability Rating: UL 94V-0
- ◆ Quantity Per Reel : 3,000pcs
- ◆ Reel Size : 7 inch

### Absolute Maximum Rating

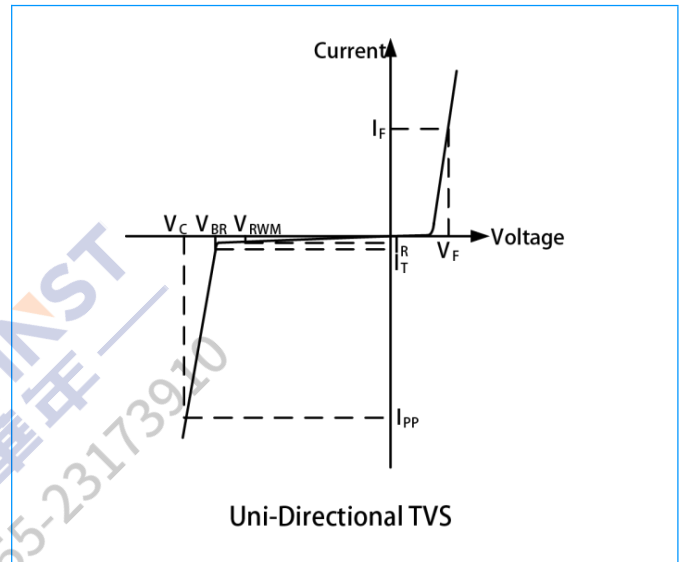
Symbol	Parameter	Value	Units
$T_{LST}$	Lead Soldering Temperature	260 (10sec)	$^{\circ}$ C
$T_{STG}$	Storage Temperature Range	-55 to +150	$^{\circ}$ C
$T_{OPT}$	Operating Temperature Range	-55 to +125	$^{\circ}$ C
$V_{ESD}$	ESD per IEC 61000-4-2(Air)	$\pm$ 20	KV
	ESD per IEC 61000-4-2 (Contact)	$\pm$ 15	

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#### I-V Curve Characteristics

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 @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$



#### Electrical Characteristics (@ $T_A=25^\circ\text{C}$ Unless Otherwise Specified )

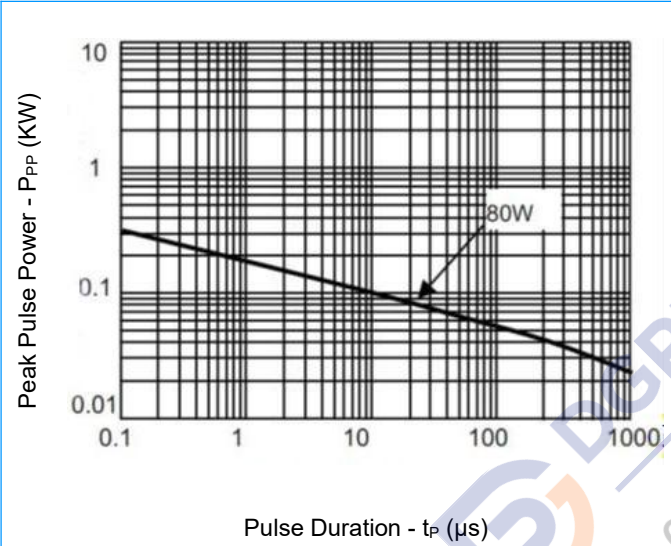
Symbol	Test Condition	Minimum	Typical	Maximum	Units
$V_{RWM}$	Any I/O pin to GND	--	--	5.0	V
$I_R$	$V_{RWM}=5\text{V}$ , $T=25^\circ\text{C}$ Any I/O pin to GND	--	--	1.0	$\mu\text{A}$
$V_{BR}$	$I_T = 1\text{mA}$ Any I/O pin to GND	6.0	--	--	V
$V_C$	$I_{PP}=1\text{A}$ , $t_p=8/20\mu\text{s}$ Any I/O pin to GND	--	10	--	V
$V_C$	$I_{PP}=4\text{A}$ , $t_p=8/20\mu\text{s}$ Any I/O pin to GND	--	13	--	V
$C_J$	$V_R=0\text{V}$ , $f=1\text{MHz}$ Between I/O and GND	--	0.60	--	pF
$C_J$	$V_R=0\text{V}$ , $f=1\text{MHz}$ Between I/O and I/O	--	0.40	--	pF

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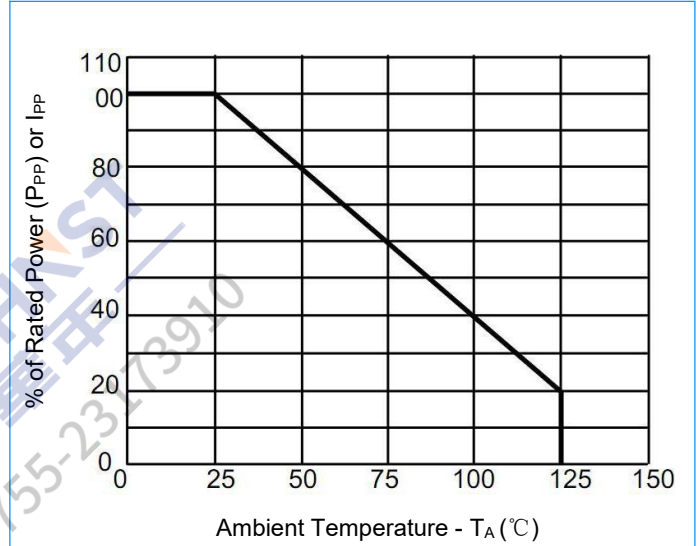
## SE05NRD34GU

### Electrical Characteristic Curves

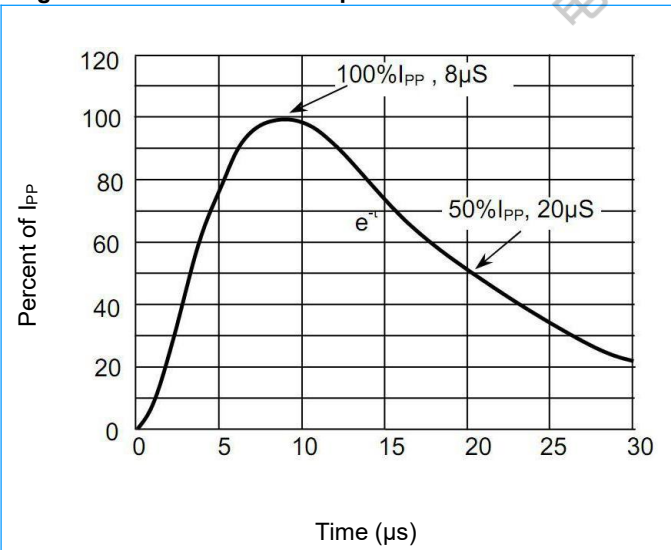
**Fig. 1 Peak Pulse Power Rating Curve**



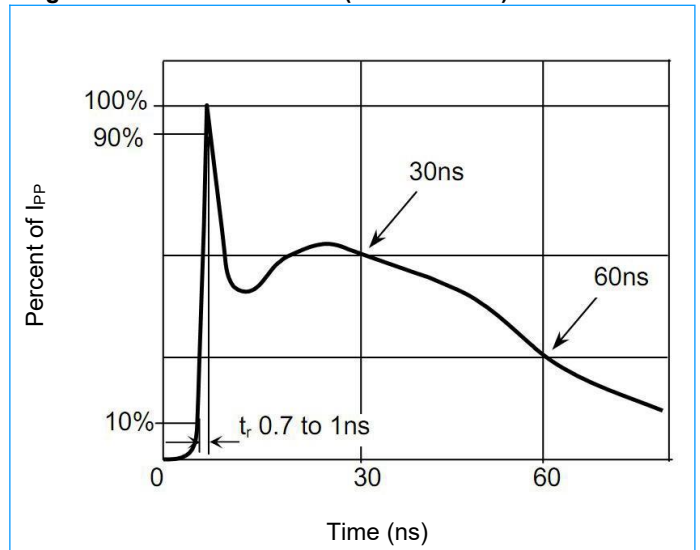
**Fig. 2 Pulse Derating Curve**



**Fig. 3 Pulse Waveform - 8/20μs**



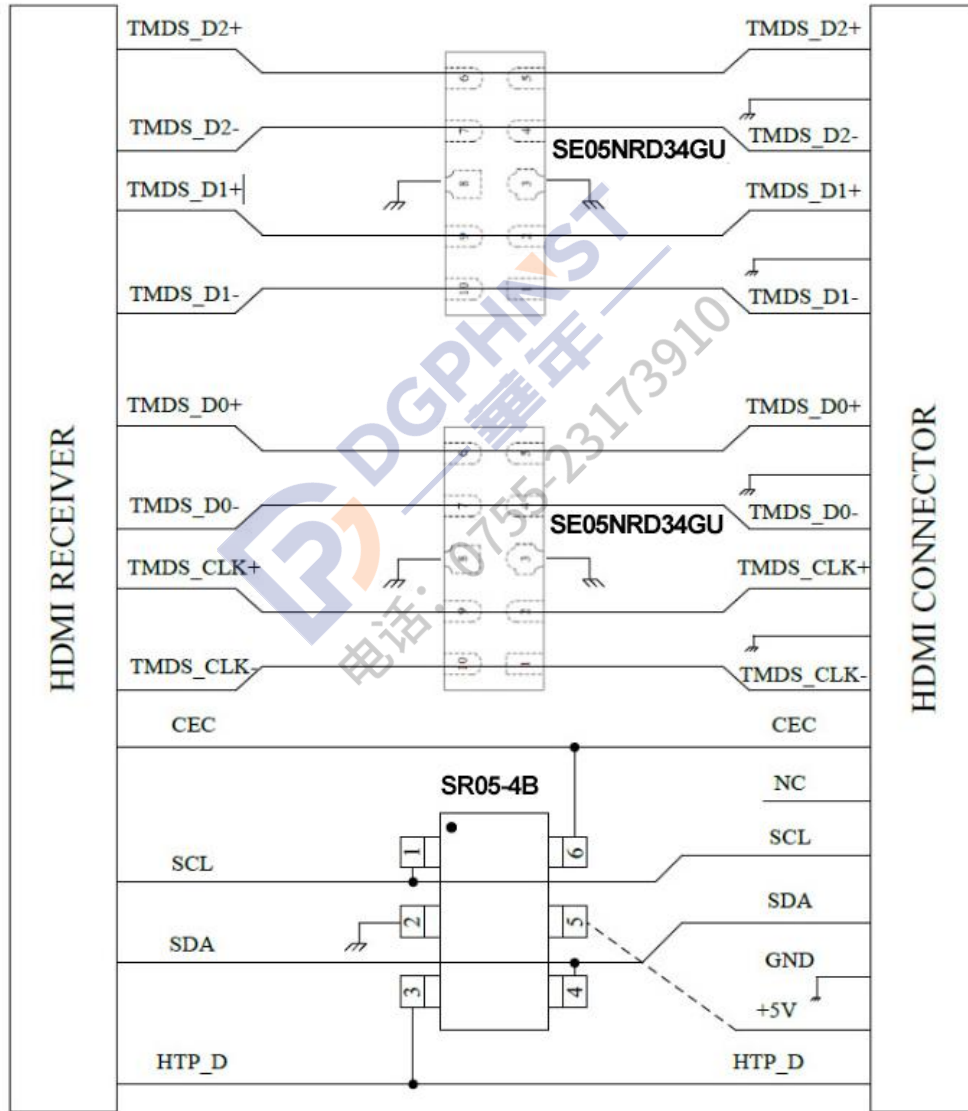
**Fig. 4 Pulse Waveform-ESD (IEC61000-4-2)**



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### Application Information

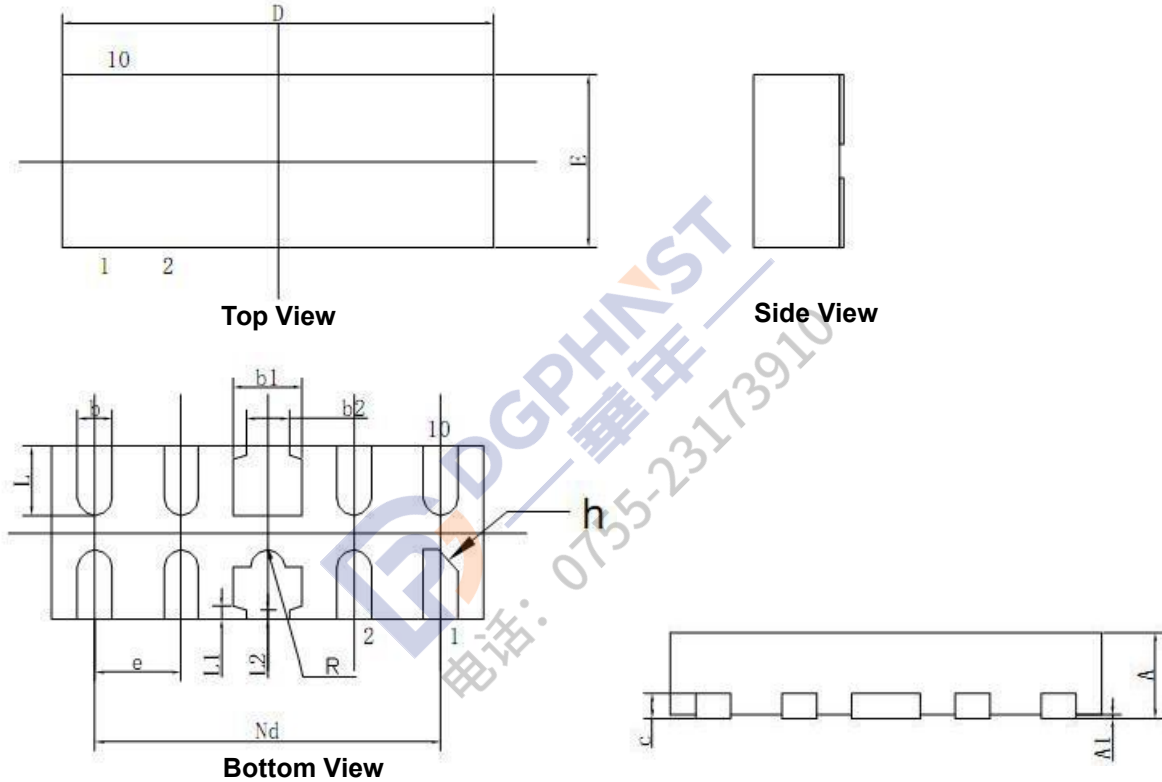


Layout Top View for HDMI Interface with SE05NRD34GU

## Transient Voltage Suppressors for ESD Protection

### SE05NRD34GU

#### DFN2510-10L Package Outline & Dimensions



Symbol	Dimensions In Millimeters		
	Min.	Nom.	Max.
<b>A</b>	0.45	0.50	0.55
<b>A1</b>	--	0.02	0.05
<b>b</b>	0.15	0.20	0.25
<b>b1</b>	0.35	0.40	0.45
<b>b2</b>	0.20	0.25	0.30
<b>c</b>	0.10	0.15	0.20
<b>D</b>	2.45	2.50	2.55
<b>e</b>	0.50 BSC		
<b>Nd</b>	2.00 BSC		
<b>E</b>	0.95	1.00	1.05
<b>L</b>	0.35	0.40	0.45
<b>L1</b>	0.075 REF		
<b>L2</b>	0.050 REF		
<b>h</b>	0.08	0.12	0.15
<b>R</b>	0.05	0.10	0.15

## Transient Voltage Suppressors for ESD Protection

SE05NRD34GU

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DGPHNS  
— 華年 —  
电话: 0755-23173910