

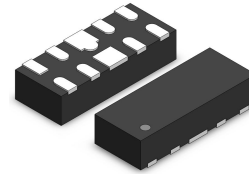
Transient Voltage Suppressors for ESD Protection

SE05NRD34GU

Features

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

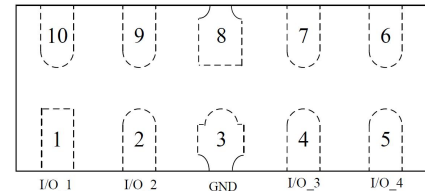
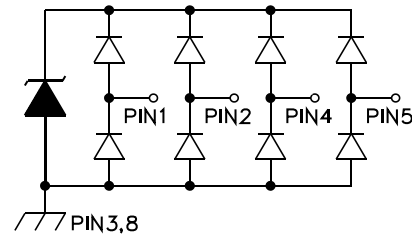
DFN2510-10L



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

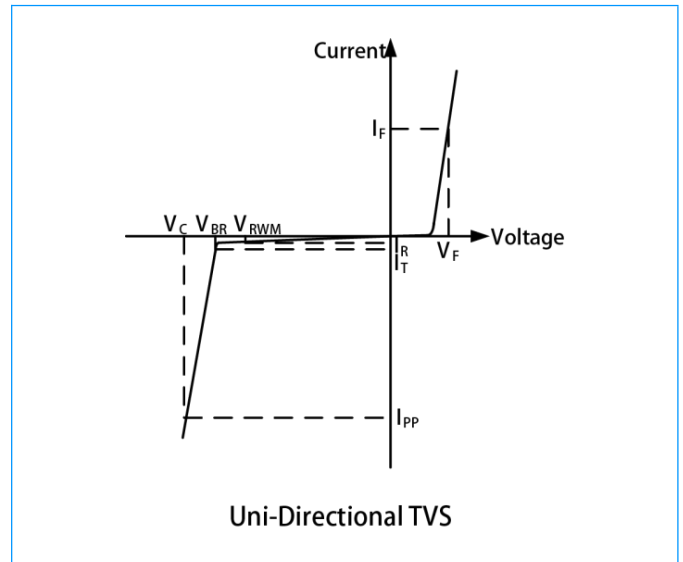
Symbol	Parameter	Value	Units
T_{LST}	Lead Soldering Temperature	260 (10sec)	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C
T_{OPT}	Operating Temperature Range	-55 to +125	°C
V_{ESD}	ESD per IEC 61000-4-2(Air) ESD per IEC 61000-4-2 (Contact)	±30 ±30	KV

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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	μA
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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Electrical Characteristic Curves

Fig. 1 Peak Pulse Power Rating Curve

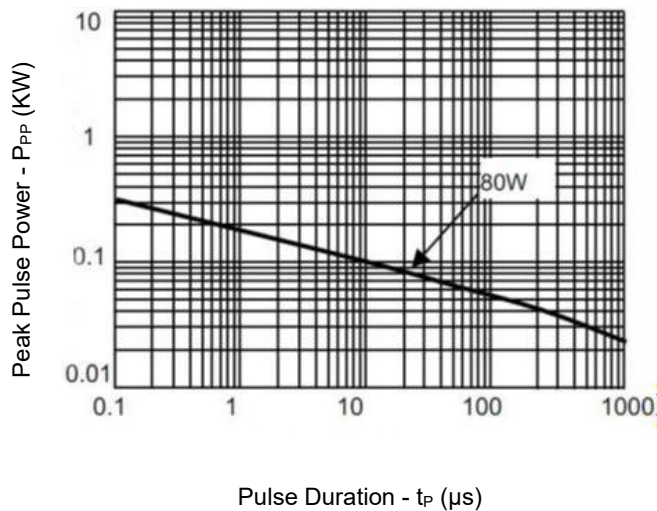


Fig. 2 Pulse Derating Curve

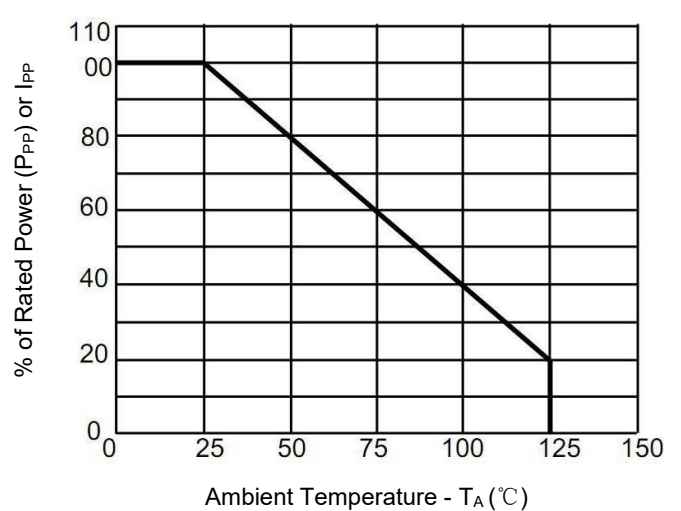


Fig. 3 Pulse Waveform - 8/20μs

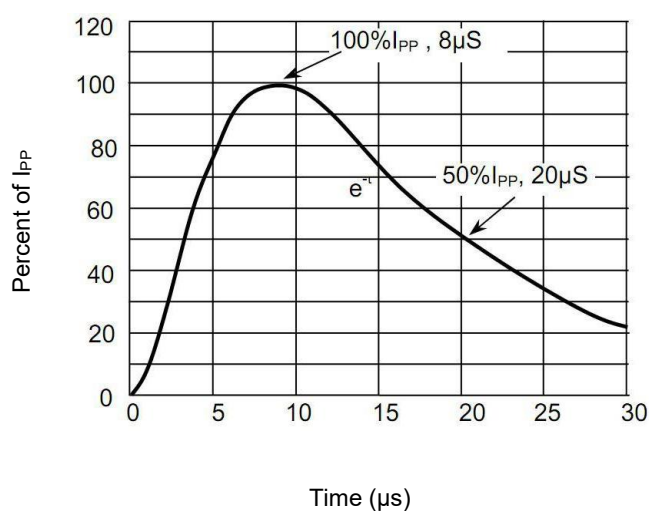
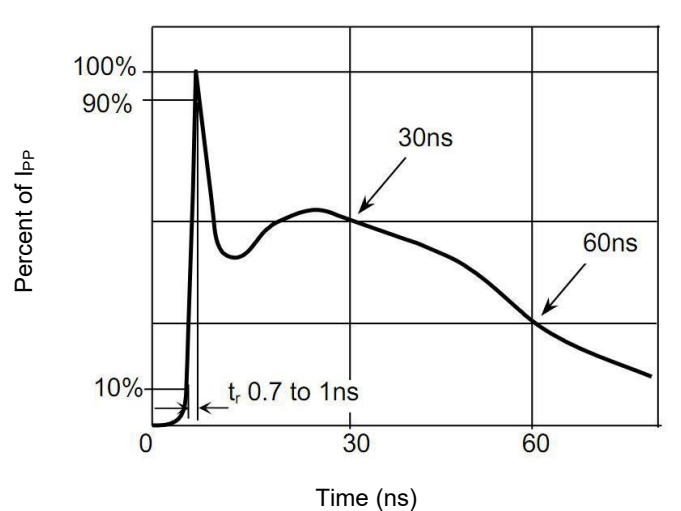


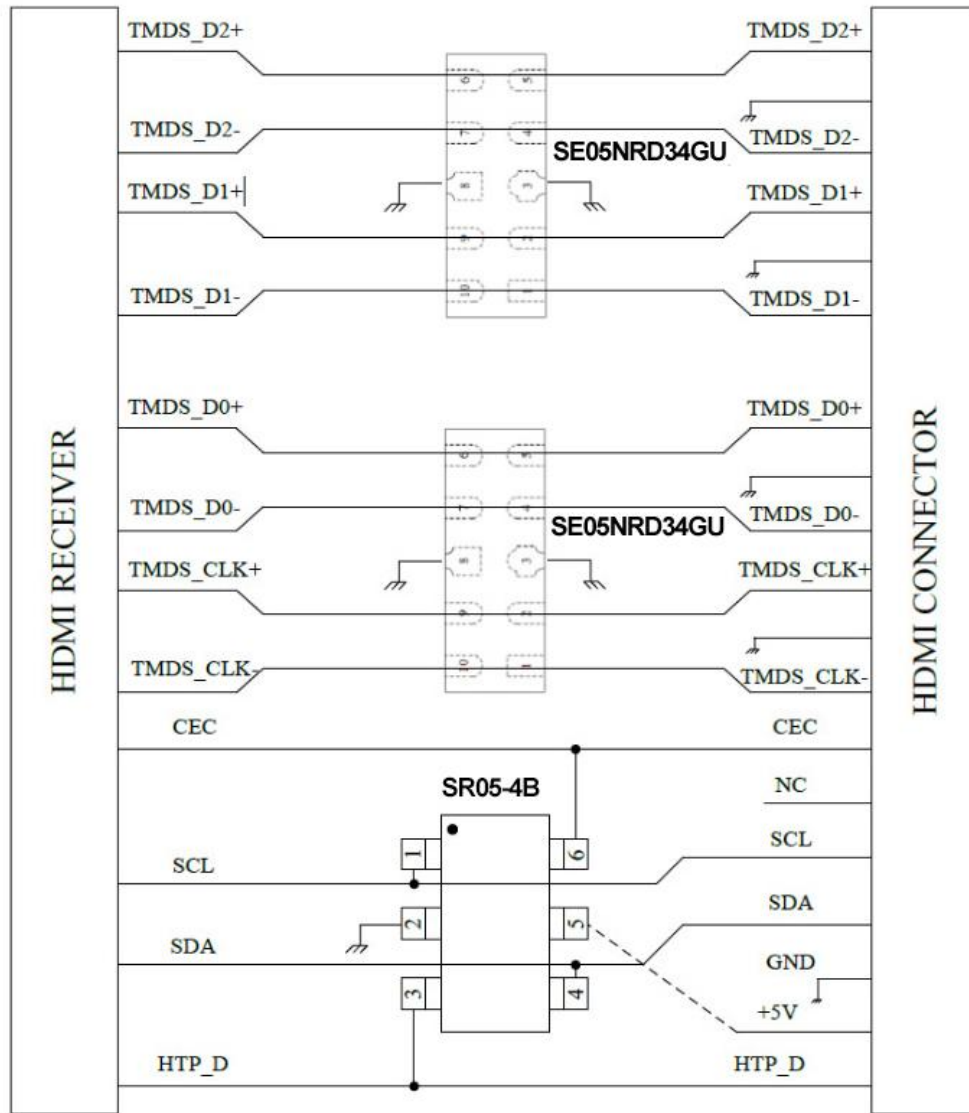
Fig. 4 Pulse Waveform-ESD (IEC61000-4-2)



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Application Information

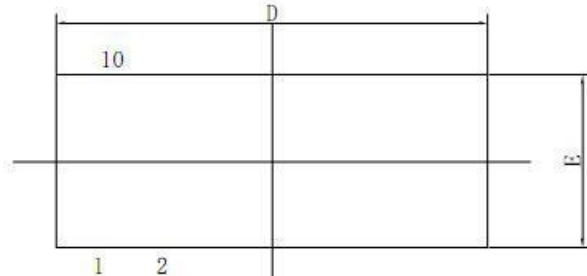


Layout Top View for HDMI Interface with SE05NRD34GU

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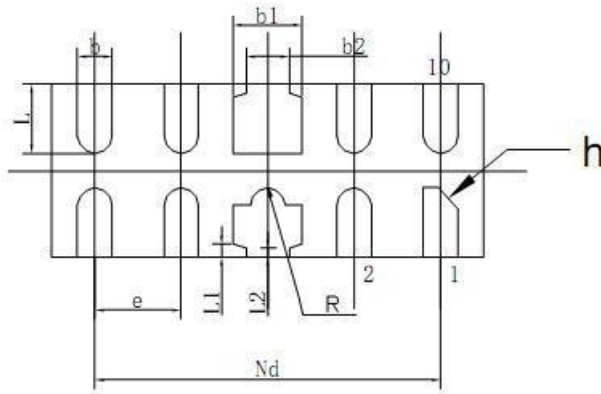
DFN2510-10L Package Outline & Dimensions



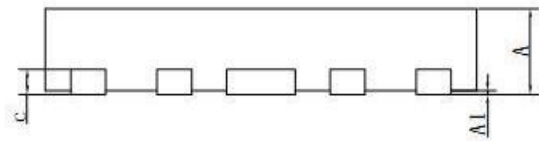
Top View



Side View



Bottom View



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

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