

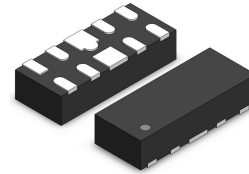
Transient Voltage Suppressors for ESD Protection

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

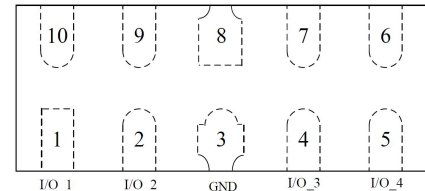
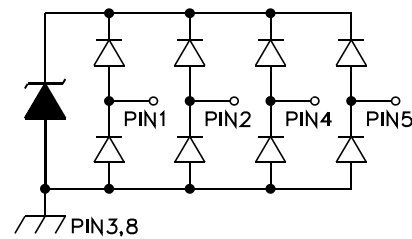
DFN2510-10L



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

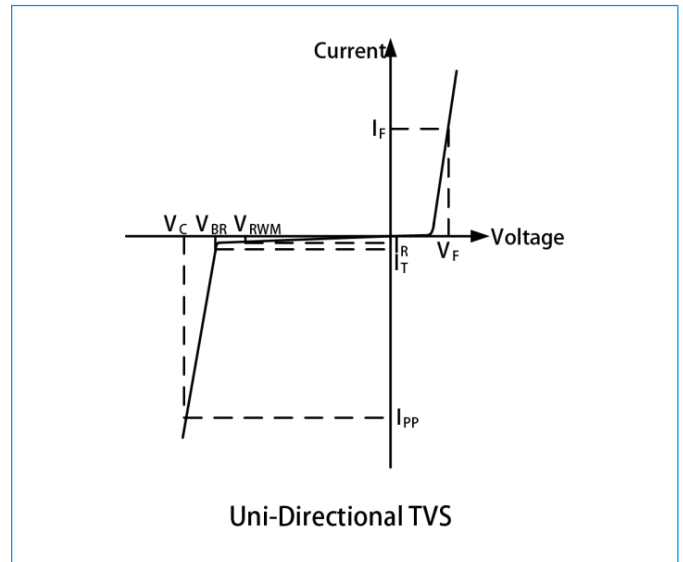
Symbol	Parameter	Value	Units
T_{LST}	Lead Soldering Temperature	260 (10sec)	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C
T_{OPT}	Operating Temperature Range	-55 to +125	°C
V_{ESD}	ESD per IEC 61000-4-2(Air) ESD per IEC 61000-4-2 (Contact)	±20 ±15	KV

Transient Voltage Suppressors for ESD Protection

SE05NRD34GU

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

Transient Voltage Suppressors for ESD Protection

SE05NRD34GU

Electrical Characteristic Curves

Fig. 1 Peak Pulse Power Rating Curve

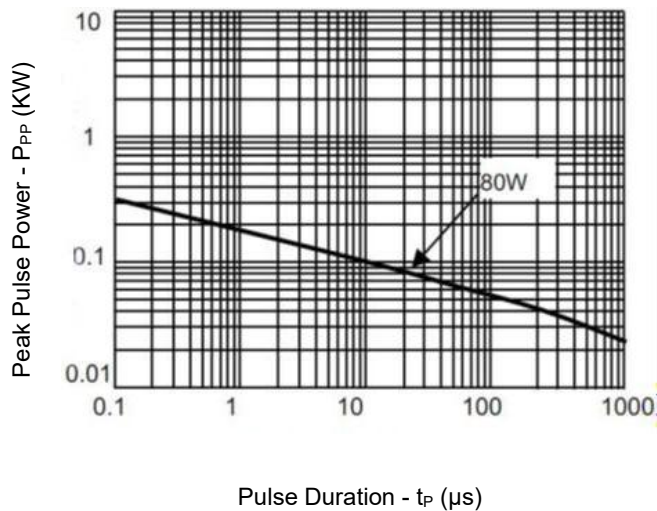


Fig. 2 Pulse Derating Curve

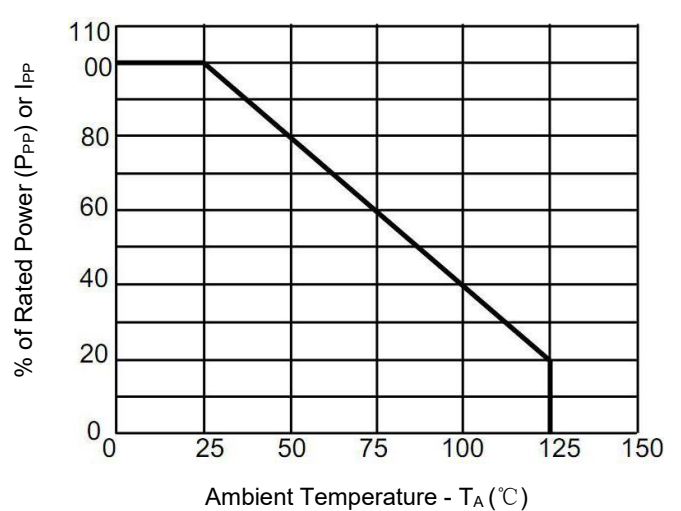


Fig. 3 Pulse Waveform - 8/20 μ s

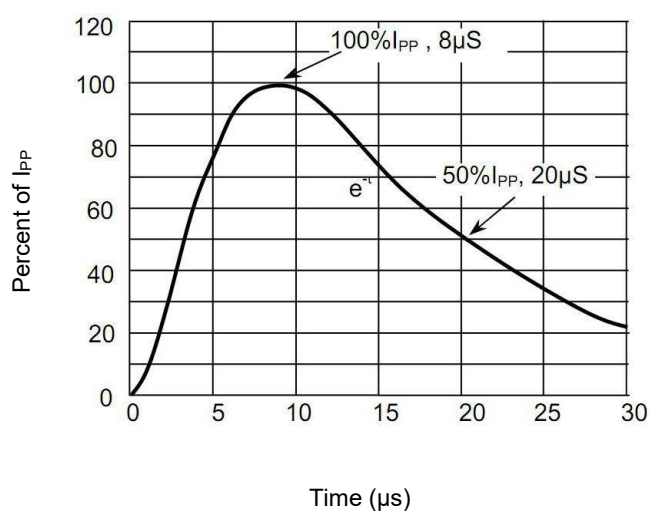
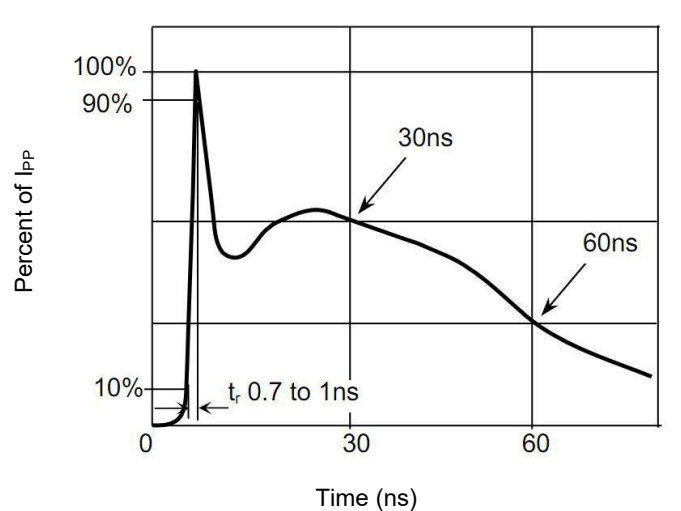


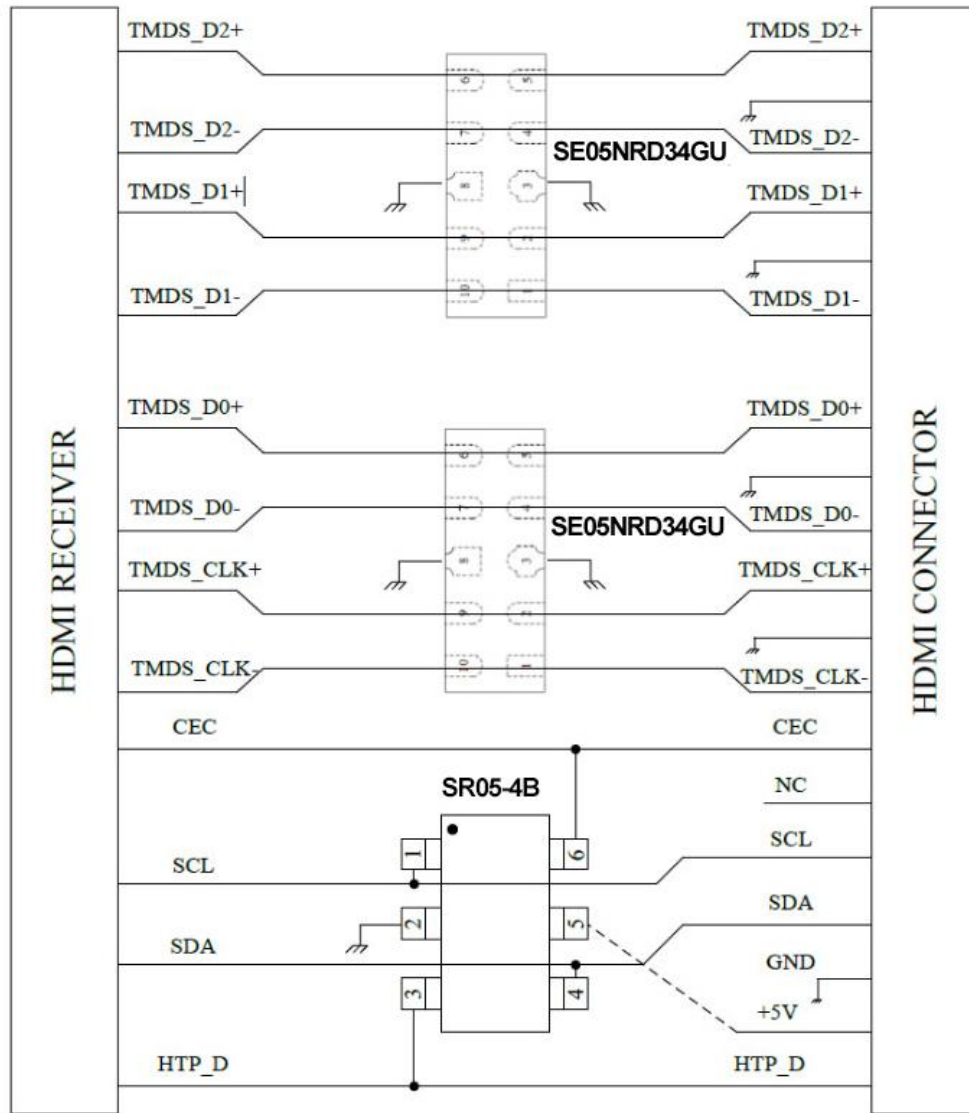
Fig. 4 Pulse Waveform-ESD (IEC61000-4-2)



Transient Voltage Suppressors for ESD Protection

SE05NRD34GU

Application Information

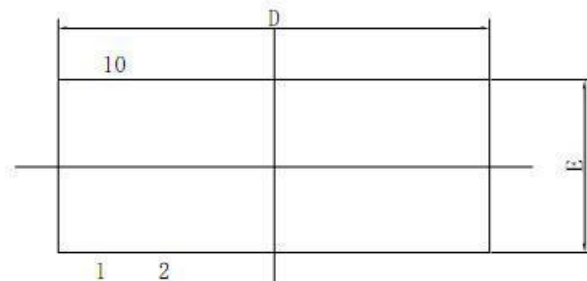


Layout Top View for HDMI Interface with SE05NRD34GU

Transient Voltage Suppressors for ESD Protection

SE05NRD34GU

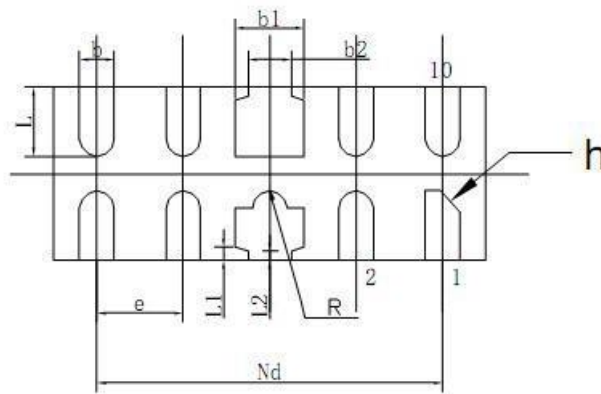
DFN2510-10L Package Outline & Dimensions



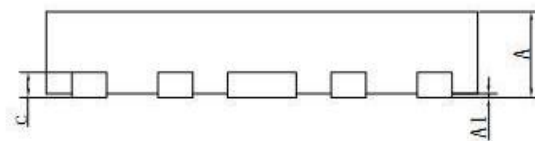
Top View



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

Transient Voltage Suppressors for ESD Protection

SE05NRD34GU

Warning



- ◆ SOCAY owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property.
- ◆ SOCAY reserves the right to make changes without further notice to any products herein.
- ◆ SOCAY makes no warranties, representations or warranties as to the fitness of its products for any particular purpose, and disclaims any liability.
- ◆ The parameters provided in the SOCAY datasheet specification may vary from application to application, and the actual performance may vary over time. All operating parameters must be verified by the customer's technical expert before application.
- ◆ Any and all responsibilities and liabilities are disclaimed if any item under this notice of warning is not complied with.