PRODUCT SPECIFICATION

DOCUMENT : ENS000115910				
DESCRIPTION	**DRAWN BY**	**DESIGNED BY**	**CHECKED BY**	**APPROVED BY**
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TVU3V3U4S-DFN2510-10LDG Engineering Specification

1. FEATURES

- ESD protection for high-speed data lines：
  IEC 61000-4-2 (ESD)：+/- 16KV (Contact/Air)
  IEC61000-4-5 (Surge)：6A (8/20us)
  IEC61000-4-4 (EFT):40A (5/50ns)
- Low Capacitance (I/O to GND)：0.45pF
- Operation Voltage：3.3V and below
- Protects four I/O lines
- Flow-Through design
- These Devices are Pb-Free Halogen Free/BFR Free and are RoHS compliant

2. APPLICATIONS

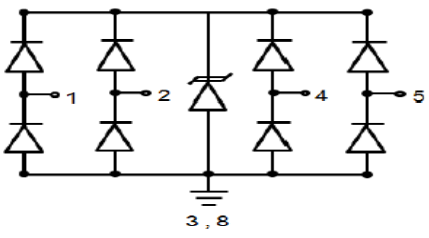
- USB 3.0
- Digital Visual Interface (DVI)
- DisplayPortTM
- SATA/eSATA Interface
- HDMI 1.3/1.4/2.0

3. Explanation of Part Number

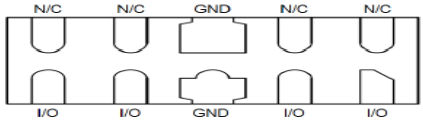
TV	U	3V3	U4S	DFN2510-	10L	DG
-1	-2	-3	-4	-5	-6	-7

(1) Product Type：TV=TVS Diode
(2) Capacitance Code
(3) Working Voltage: 3V3 = 3.3V
(4) Direction/Channel Code：U4S=Uni-Direction, 4 Channels,S=control code
(5) Package Size Cod
(6) Pin Code: 10L: 10Pins
(7) Inpaq Control Code

4.Circuit Diagram/ Pin Configuration and Schematic



Schematic



Pin Configuration

5. Maximum Ratings (Ta=25℃ unless otherwise noted)

Symbol	Rating	Value	Units
TJ	Operating Junction Temperature Range	-40 to 85	℃
TSTG	Storage Temperature Range	-55 to 150	℃
TSOL	Lead Soldering Temperature	260 (10 sec)	℃
IPP	Peak Pulse Current (8/20μs)	6	A
VESD	ESD Rating pre IEC 61000-4-2 (Contact)	+/- 16	kV
	ESD Rating pre IEC 61000-4-2 (Air)	+/- 16	kV

6. Electrical Characteristics (TJ=25 ℃, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
VRWM	Reverse Working Voltage	I/O Pin to GND	---	---	3.3	V
VBR	Breakdown Voltage	IBR = 1mA, I/O pin to GND	4.5	6.5	8.5	V
VF	Forward Voltage	IF = -15mA, I/O pin to GND	---	1	---	V
IR	Reverse Leakage Current	VRWM = 3.3V, I/O Pin to GND	---	---	1	μA
VC	Surge Clamping Voltage (8/20μs)	IPP = 5 A, I/O Pin to GND(positive) IPP = -5 A, I/O Pin to GND (negative)	 ---	6.2 3.6	7.4 5	V
	Clamping Voltage (tperiod=100ns, tr=1ns)	ITLP = 1 A, I/O Pin to GND(positive) ITLP = 16 A, I/O Pin to GND(positive)	 ---	5.3 9.2	 ---	V
RDYN	TLP Dynamic Resistance (tperiod=100ns, tr=1ns)	I/O Pin to GND (positive) I/O Pin to GND (negative)	 ---	0.26 0.31	 ---	Ω
CJ	Junction Capacitance	VR = 0V, f=1MHz between I/O Pins to GND VR = 1.65V, f=1MHz between I/O Pins to GND	 ---	0.44 0.45	 0.6	pF

7. Typical Characteristics

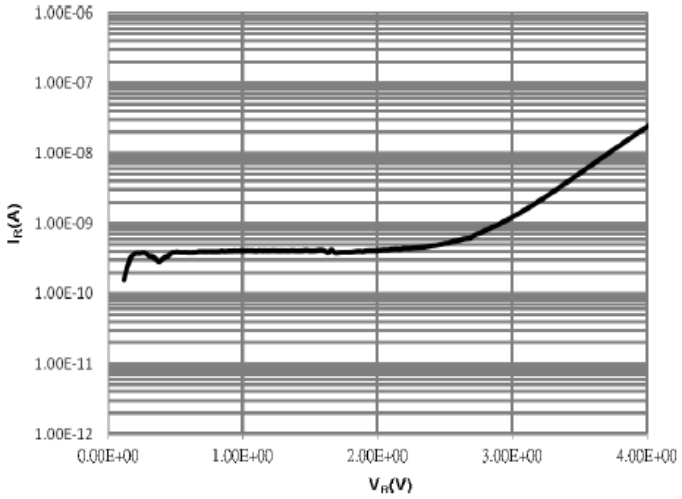


Fig.3 Reverse Leakage Current

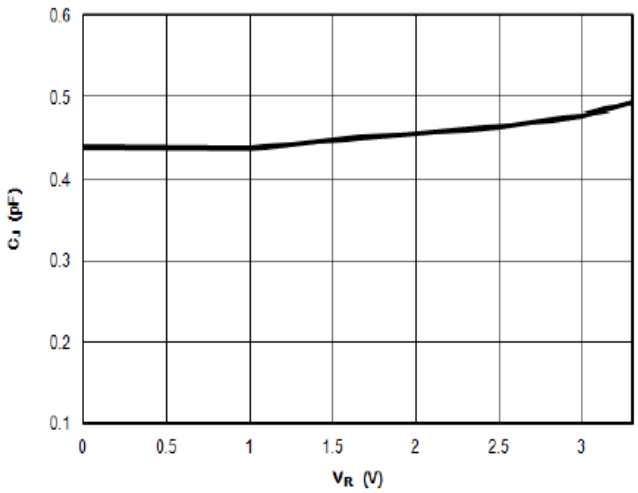


Fig.4 Junction Capacitance (I/O Pin to GND)

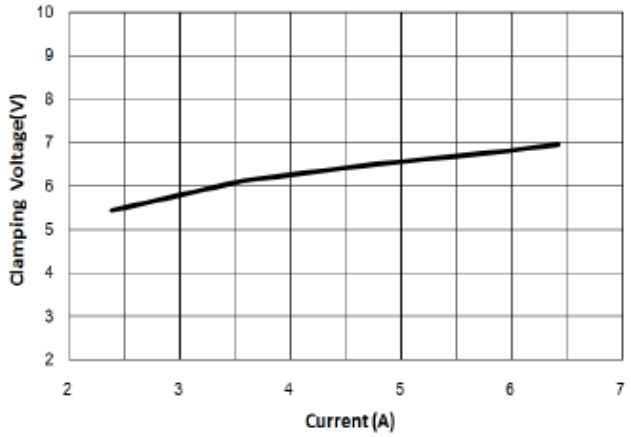


Fig.5 Positive Surge Clamping Voltage (8/20μs)

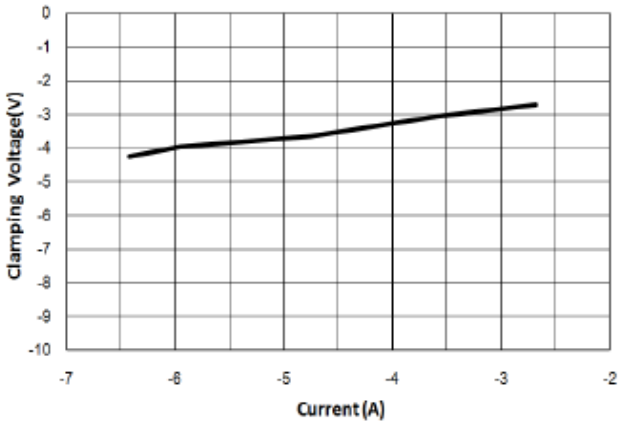


Fig.6 Negative Surge Clamping Voltage (8/20μs)

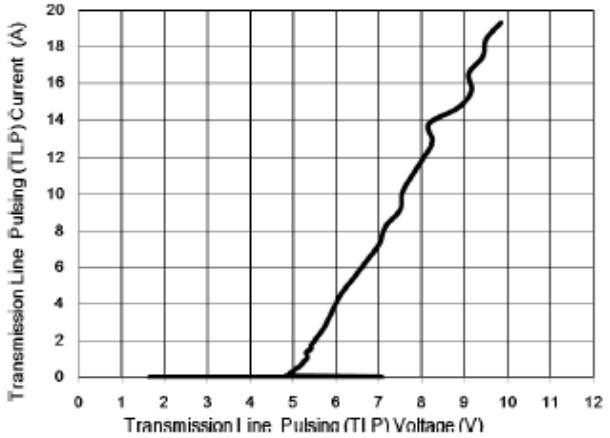


Fig.7 Positive Clamping Voltage (tperiod=100ns, tr=1ns)

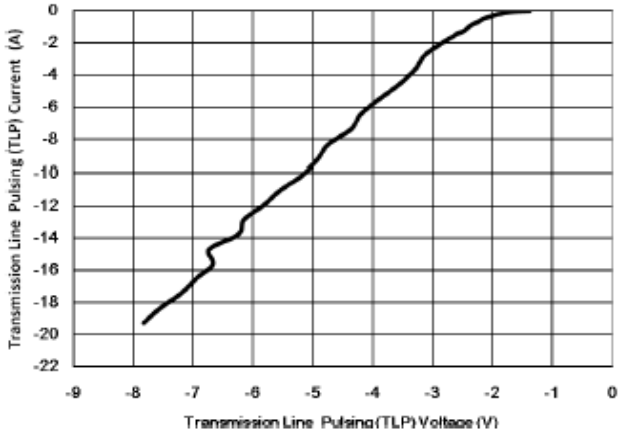
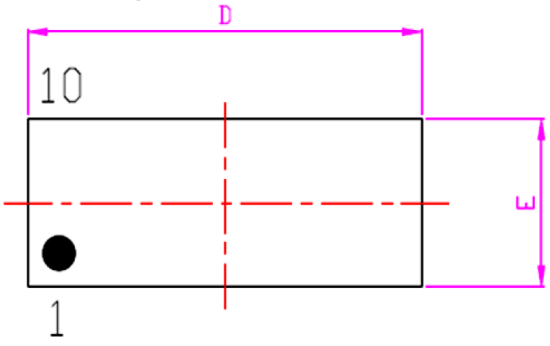
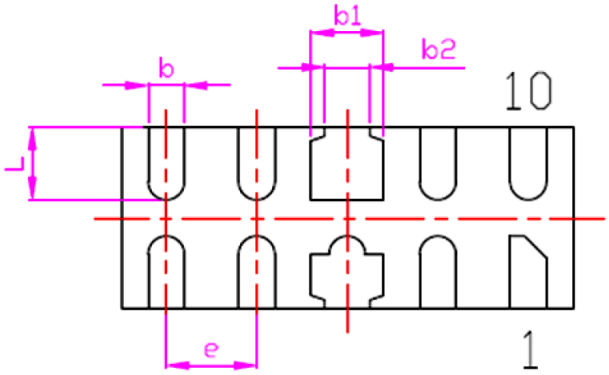


Fig.8 Negative Clamping Voltage (tperiod=100ns, tr=1ns)

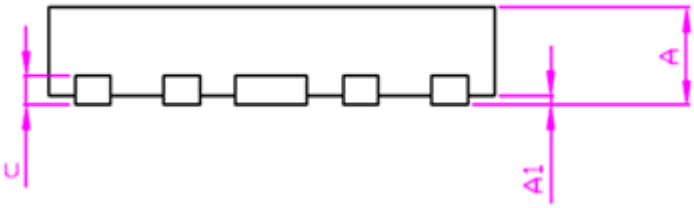
8. Package Dimensions



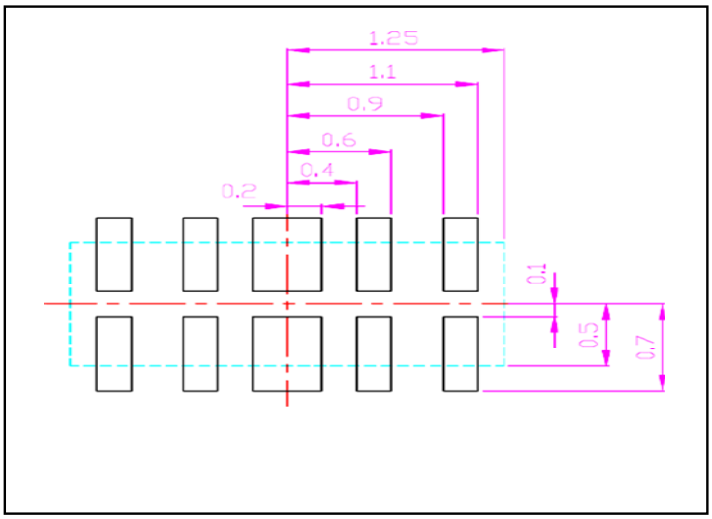
TOP VIEW



BOTTOM VIEW



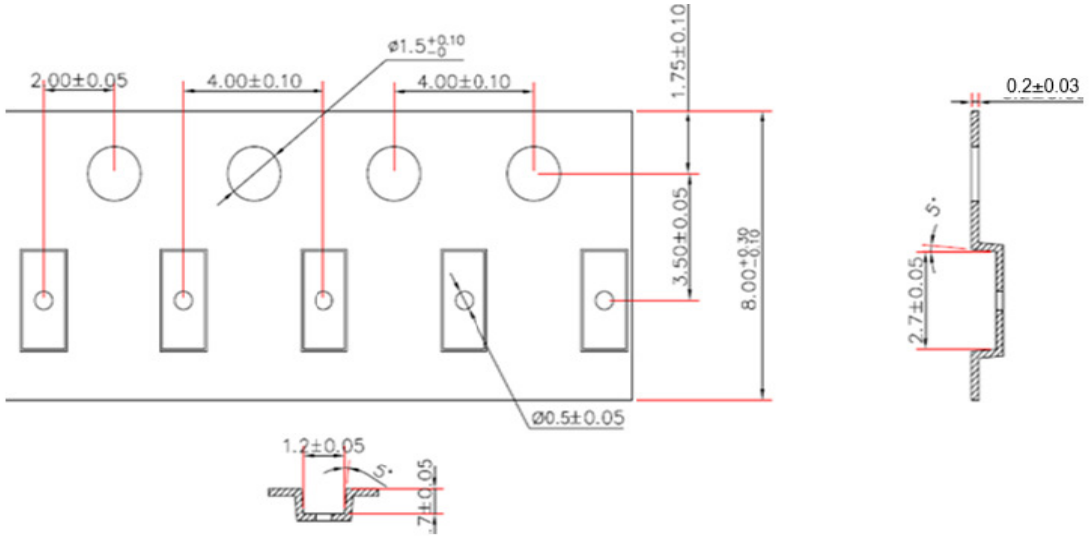
SIDE VIEW

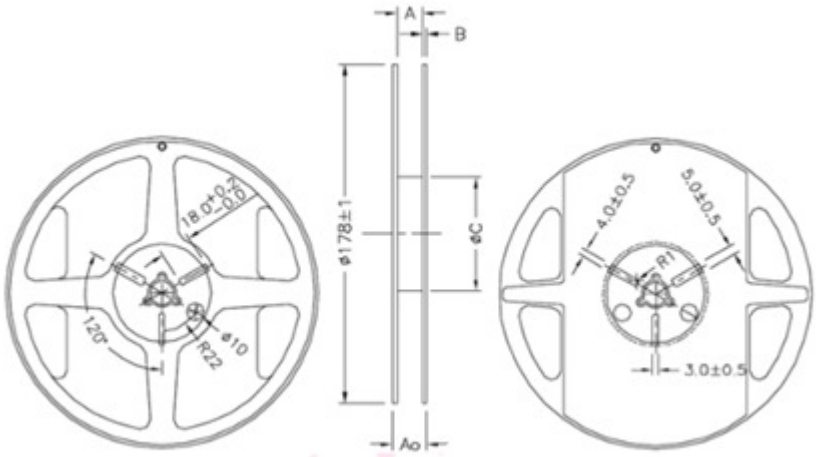


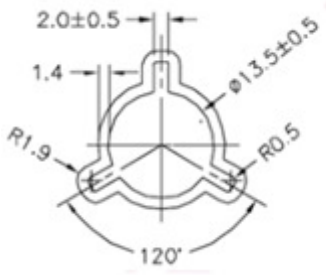
Symbol	Millimeters		
	Min.	Typ.	Max.
A	0.45	0.50	0.55
A1	0.00	0.02	0.05
b	0.15	0.20	0.25
b1	0.35	0.40	0.45
b2	0.13	0.25	0.30
c	0.10	0.15	0.20
D	2.40	2.50	2.60
e	--	0.50	--
E	0.90	1.00	1.10
L	0.30	0.40	0.50

9. Carrier Tape Drawing

Carrier Material : Plastic







Width of carrier tape	8	12	16
A±0.05	9.0	13.0	17.0
Ao±0.05	12.0	16.0	20.0
B	1.5	1.5	1.5
øC +1 -0	60	60	60

10. Order Information

U34=Device Code
YW=Data code

U34=Device Code
W=Data code

Part Number	Quantity	Packaging Option
TVU3V3U4S-DFN2510-10LDG	3,000	Tape & reel- 8mm tape/7”reel

11. MSL LEVEL

LEVEL 1