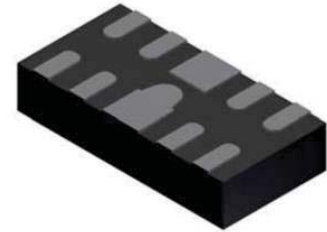


Features

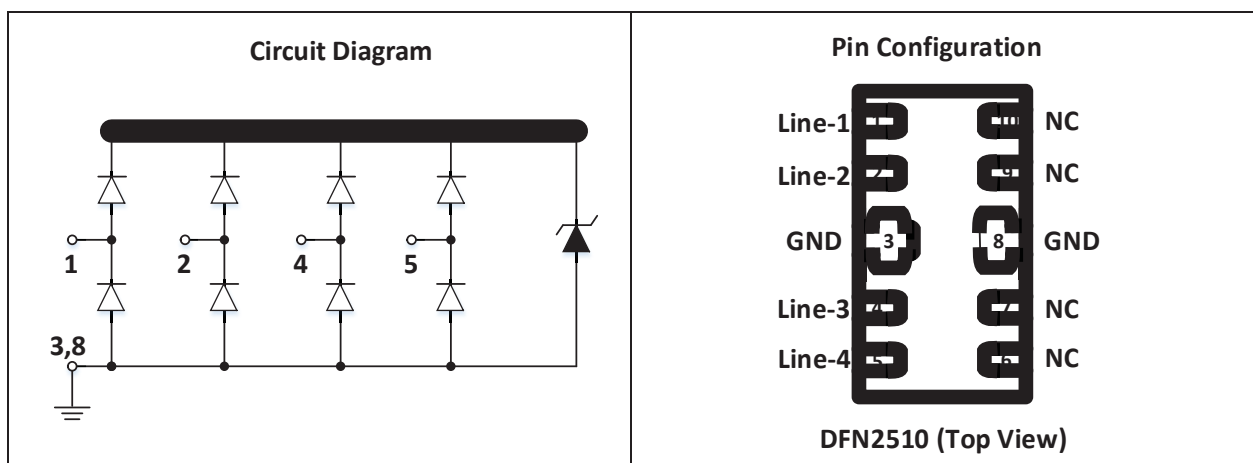
- ❖ 3A peak pulse current ($t_p=8/20\mu s$)
- ❖ Transient protection for high speed data lines to IEC 61000-4-2 (ESD) $\pm 15KV$ (Air), $\pm 8KV$ (Contact)
- ❖ Working voltage : 5V
- ❖ Protect four I/O lines
- ❖ Low capacitance : 0.8pF (typical any I/O pin to Ground)
- ❖ Fast turn-on and low clamping voltage
- ❖ Solid-state silicon-avalanche and active circuit triggering technology



DFN2510

Applications

- ❖ High Definition Multi-Media Interface (HDMI) 1.3 & 1.4 version
- ❖ Display Port interface
- ❖ SATA and eSATA interface
- ❖ USB 3.0
- ❖ Digital Visual Interface (DVI)
- ❖ USB 2.0 up to 480Mb/s
- ❖ IEEE 1394 up to 3.2 Gb/s
- ❖ Ethernet port : 10/100/1000 Mb/s
- ❖ Desktop and Notebooks PCs
- ❖ Consumer Electronics
- ❖ Set Top Box



Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$, RH=45%-75%, unless otherwise noted)

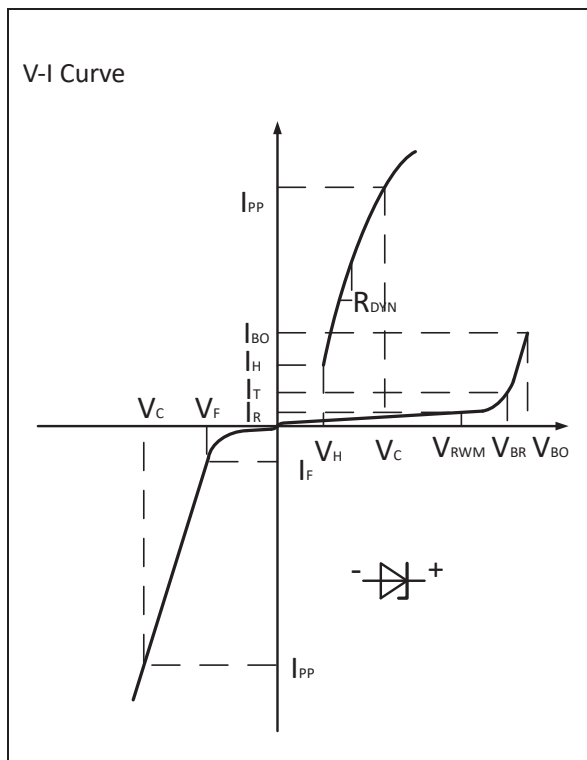
Parameter	Symbol	Value	Unit
Peak Pulse Current ($t_p=8/20\mu\text{s}$)	I_{PP}	3	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	15	KV
ESD per IEC 61000-4-2 (Contact)		8	
Lead Soldering Temperature	T_{SOL}	260 (10 sec.)	$^{\circ}\text{C}$
Operating temperature range	T_J	-55 to +125	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

Electronics Characteristics ($T_A=25^{\circ}\text{C}$, continued)

Symbol	Parameter	Conditons	Min.	Typ.	Max.	Units
V_{RWM}	Reverse Working Voltage	Any I/O to Ground			5.0	V
V_{BR}	Reverse Breakdown Voltage	$I_T=1\text{mA}$, Any I/O to Ground	6.0			V
I_R	Reverse Leakage Current	$V_{RWM}=5\text{V}$, Any I/O to Ground			1.0	μA
V_F	Diode Forward Voltage	$I_F=15\text{mA}$		0.9	1.1	V
V_C	Clamping Voltage	$I_{PP}=1\text{A}$, $t_p=8/20\mu\text{s}$, Any I/O to Ground		2.8		V
		$I_{PP}=3\text{A}$, $t_p=8/20\mu\text{s}$, Any I/O to Ground		3.8		V
		IEC 61000-4-2 +8KV ($I_{TLP}=16\text{A}$) Contact mode, Any I/O to Ground		9.4		V
C_J	Junction Capacitance	$V_R=0\text{V}$, $f=1\text{MHz}$, Any I/O to Ground		0.8	0.9	pF
		$V_R=0\text{V}$, $f=1\text{MHz}$, between I/O pins		0.4	0.45	pF

Electrical Characteristics

Symbol	Parameter
V_{RWM}	Reverse Standoff Voltage
I_R	Max Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
V_{BO}	Break Over Voltage
I_{BO}	Break Over Current
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Max Peak Pulse Current
R_{DYN}	Dynamic Resistance
V_H	Holding Voltage
I_H	Holding Current
V_F	Diode Forward Voltage
I_F	Diode Forward Current



Typical Characteristics

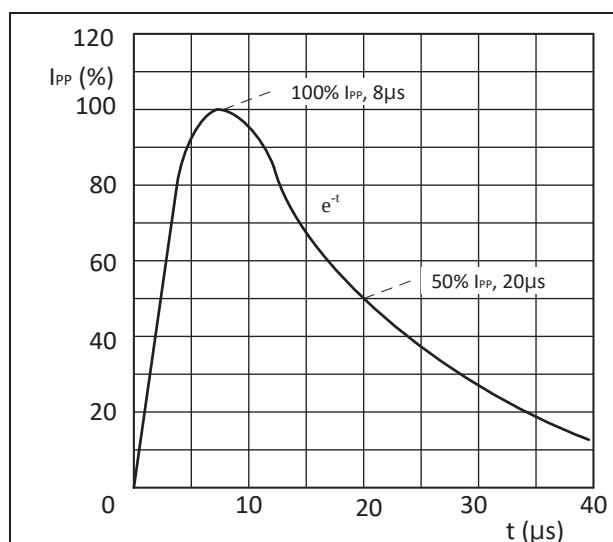


Fig. 1. 8/20 μ s pulse waveform according to IEC 61000-4-5 and IEC 61643-321

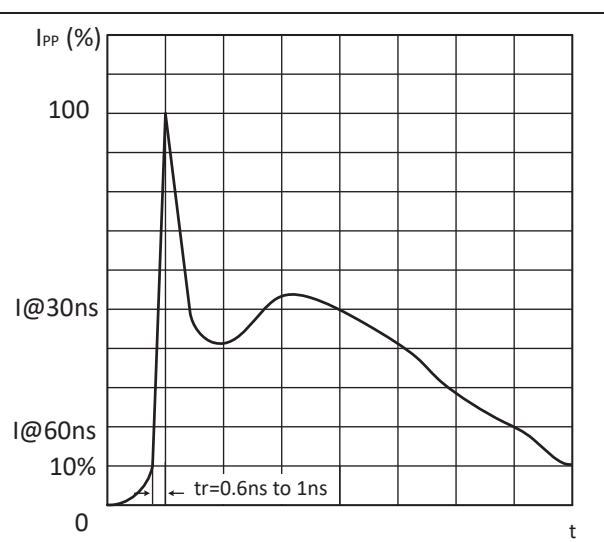


Fig. 2. ESD pulse waveform according to IEC 61000-4-2

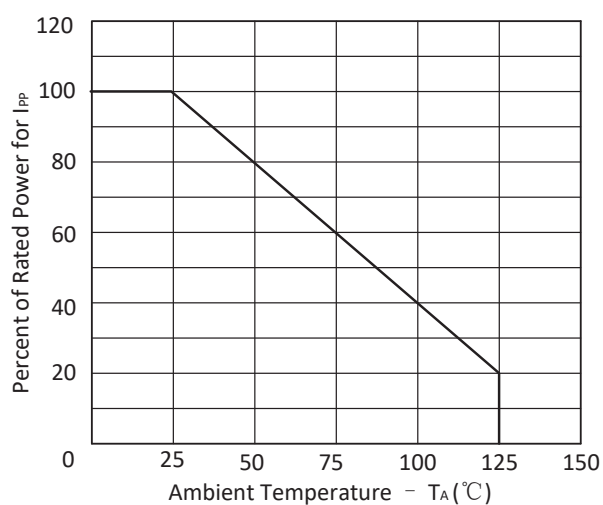


Fig. 3. Power Derating Curve

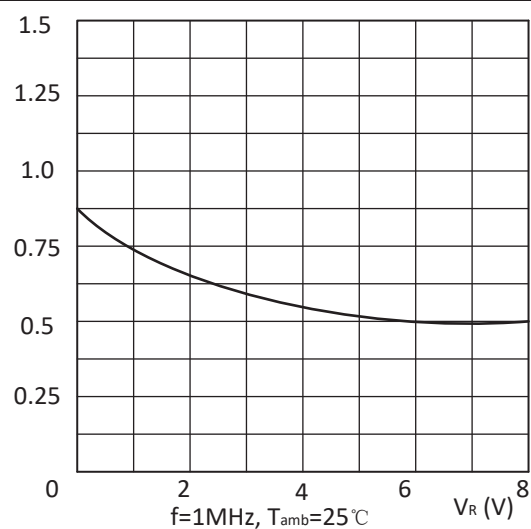


Fig. 4. Junction Capacitance vs V_R

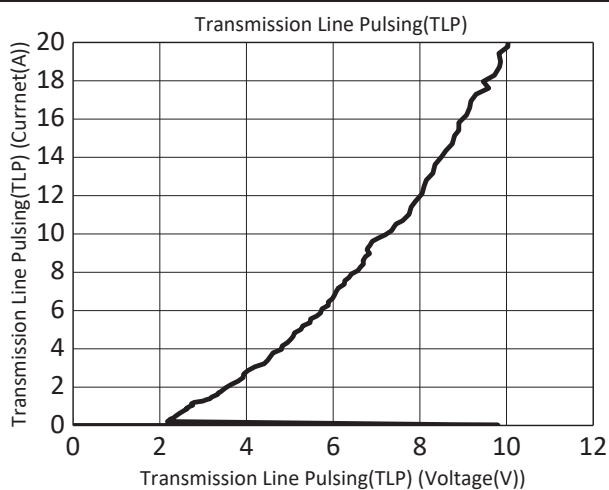


Fig.5. Transmission Line Pulsing(TLP) Measurement
($T_r=200ps$, $T_p=100ns$)

Soldering Parameters

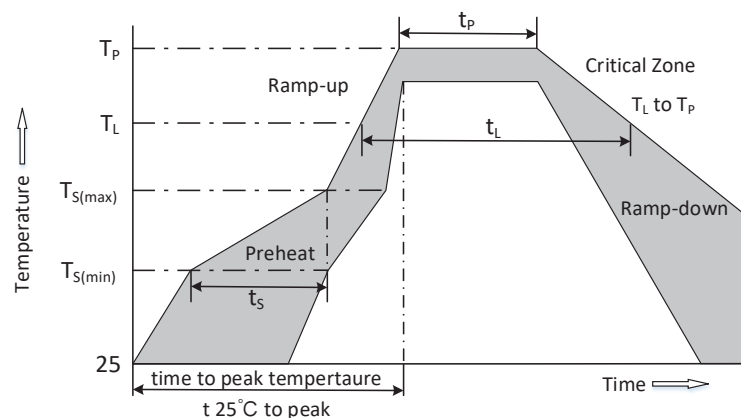
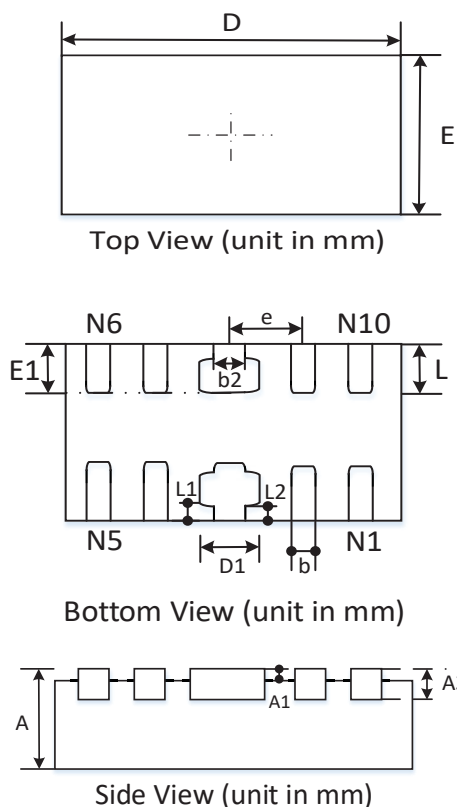


Fig.6. Reflow Condition

Reflow Condition		Pb-Free assembly (See Fig.6)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L) (Liquidus)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C

Package Mechanical Data



Symbol	Millimeters		Inches	
	min	max	min	max
A	0.40	0.55	0.016	0.022
A1	0.00	0.05	0.000	0.002
A3	0.152 REF		0.006 BSC	
D	2.45	2.55	0.096	0.100
E	0.95	1.05	0.037	0.041
D1	0.35	0.45	0.014	0.018
E1	0.35	0.45	0.014	0.018
b	0.15	0.25	0.006	0.010
e	0.05 BSC		0.019 BSC	
L1	0.075 REF		0.0029 REF	
L2	0.05 REF		0.0019 REF	
b2	0.20	0.30	0.0079	0.012
L	0.35	0.45	0.014	0.018

Marking Information



Ordering Information

Device	Package	Quantity	Delivery Mode	Reel Size
YZPST-ESD5V0U4UCL	DFN2510	3000/Reel	Tape and Reel	7 inch

Revision History

Revision	Modification Description
Revision 2020/01/03	Preliminary Release.