

## $V_{WM} = 5V, 0.8pF$ ESD Protection Array

### FEATURES

- Meet IEC61000-4-2(ESD)  $\pm 17kV$ (air) ,  $\pm 12kV$ (contact)
- Working Voltage: 5V
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

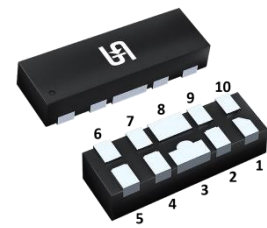
### APPLICATIONS

- USB 2.0 / 3.0 / 3.1
- High definition Multi-Media Interface(HDMI 1.3 / 1.4 / 2.0)

### MECHANICAL DATA

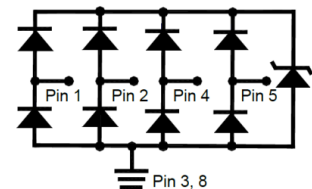
- Case: 2510P10
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 3.59mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$P_{PPSM}$	95	W
$I_{PP}$	5	A
$V_{WM}$	5	V
$V_{(BR)}$ at $I_R = 1mA$	6	V
$V_C$ at $I_{PP} = 5A$	19	V
Package	2510P10	
Configuration	Array	



**2510P10**

1. I/O 2. I/O 3. GND 4. I/O 5. I/O  
6. NC 7. NC 8. GND 9. NC 10. NC



### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ C$ unless otherwise noted)

PARAMETER	SYMBOL	TESD5V0V4UA	UNIT
Marking code on the device		24A	
Rated random recurring peak Impulse power dissipation ( $t_p = 8/20\mu s$ waveform)	$P_{PPSM}$	95	W
Peak impulse current ( $t_p = 8/20\mu s$ waveform)	$I_{PP}$	5	A
ESD per IEC 61000-4-2 (Air)	$V_{ESD}$	$\pm 17$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 12$	
Junction temperature range	$T_J$	-55 to +125	$^\circ C$
Storage temperature range	$T_{STG}$	-55 to +125	$^\circ C$

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Forward voltage per diode <sup>(1)</sup>	$I_R = 1\text{mA}$	$V_{(BR)}$	6	-	-	V
Rated working standoff voltage		$V_{WM}$	-	-	5	V
Reverse current <sup>(1)</sup>	$V_R = 5\text{V}$ (any I/O pin to Ground)	$I_R$	-	-	1	$\mu\text{A}$
Clamping voltage <sup>(2)</sup>	$I_{PP} = 1\text{A}$ (any I/O pin to Ground)	$V_C$	-	-	15	V
	$I_{PP} = 5\text{A}$ (any I/O pin to Ground)		-	-	19	V
Junction capacitance	1MHz, $V_R = 0\text{V}$ (any I/O pin to Ground)	$C_J$	-	-	0.8	pF
	1MHz, $V_R = 0\text{V}$ (between I/O pins)		-	-	0.4	pF

**Notes:**

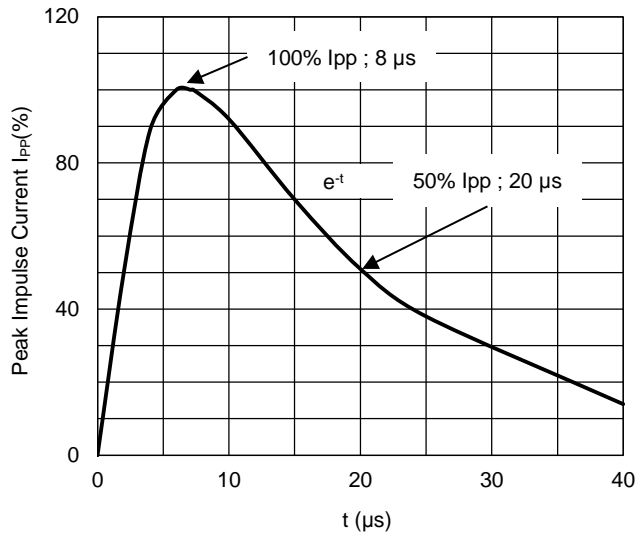
1. Pulse test with  $PW = 30\text{ms}$
2.  $t_p = 8/20\mu\text{s}$  waveform

<b>ORDERING INFORMATION</b>		
ORDERING CODE	PACKAGE	PACKING
TESD5V0V4UA RDG	2510P10	3K / 7" Reel

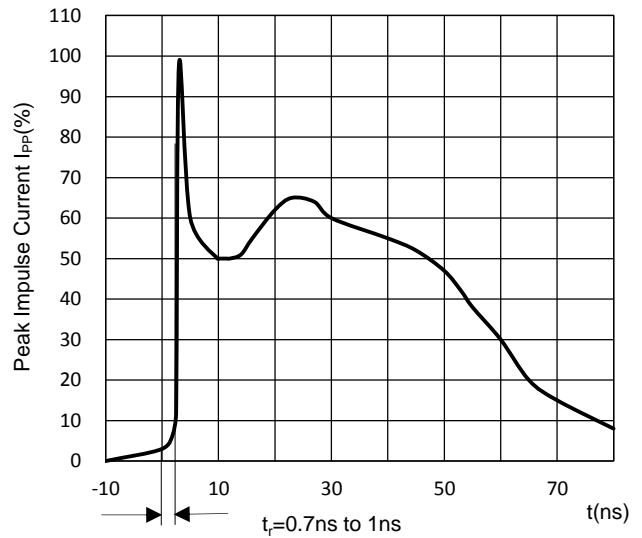
## CHARACTERISTICS CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

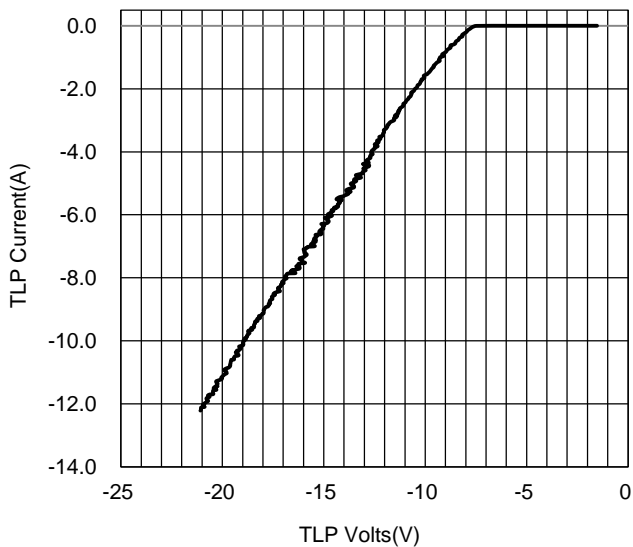
**Fig.1 8/20 $\mu\text{s}$  pulse waveform according to IEC 61000-4-5**



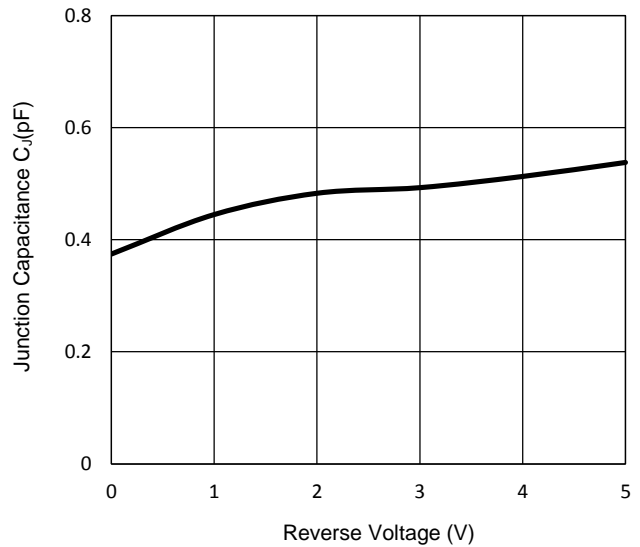
**Fig.2 ESD pulse waveform according to IEC 6100-4-2**



**Fig.3 TLP I-V Curve**



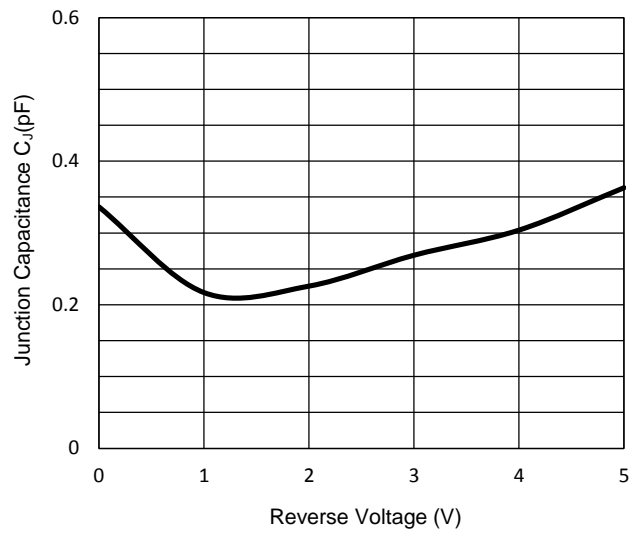
**Fig.4 Typical Junction Capacitance (any I/O pin to Ground)**



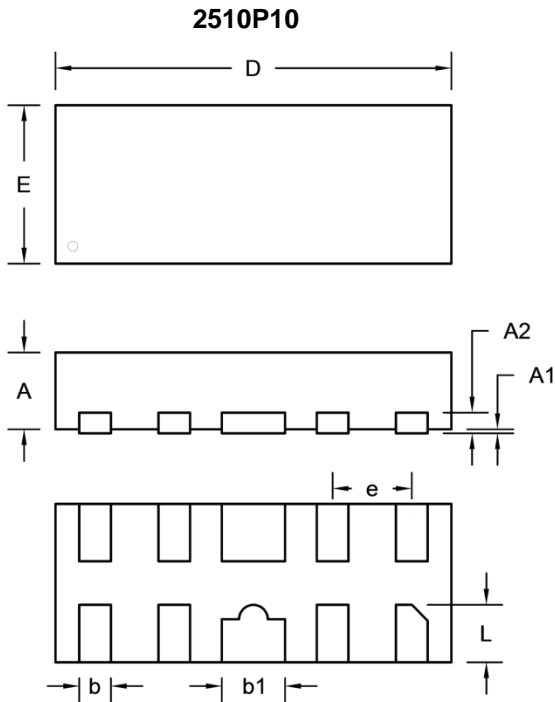
## CHARACTERISTICS CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.5 Typical Junction Capacitance**  
(between I/O pins )

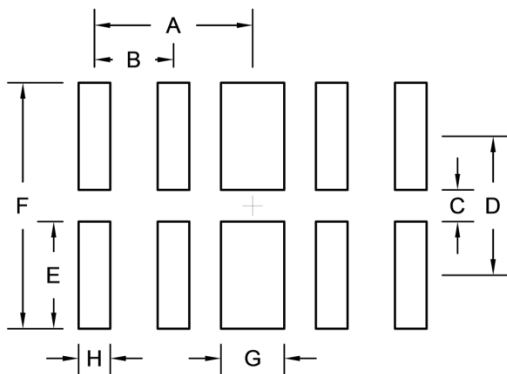


## PACKAGE OUTLINE DIMENSIONS



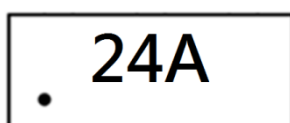
DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.46	0.51	0.018	0.020
A1	0.00	0.05	0.000	0.002
A2	0.13		0.005	
b	0.15	0.25	0.006	0.010
b1	0.35	0.45	0.014	0.018
D	2.40	2.60	0.094	0.102
E	0.90	1.10	0.035	0.043
e	0.50		0.020	
L	0.30	0.425	0.012	0.017

## SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.000	0.039
B	0.500	0.020
C	0.200	0.008
D	0.875	0.034
E	0.675	0.027
F	1.550	0.061
G	0.400	0.016
H	0.200	0.008

## MARKING DIAGRAM



24A = Marking Code

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