

$V_{WM} = 5V, 0.8pF$ 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

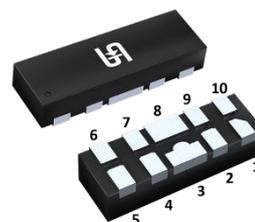
APPLICATIONS

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

MECHANICAL DATA

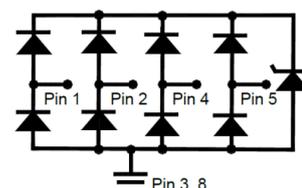
- Case: 2510P10
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 3.59mg (approximately)

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 (tp = 8/20 μs waveform)	P_{PPSM}	95	W
Peak impulse current (tp = 8/20 μs waveform)	I_{PP}	5	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 17	kV
ESD per IEC 61000-4-2 (Contact)		± 12	
Junction temperature range	T_J	-55 to +125	$^\circ C$
Storage temperature range	T_{STG}	-55 to +125	$^\circ C$

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_R = 1\text{mA}$	$V_{(BR)}$	6	-	-	V
Rated working standoff voltage		V_{WM}	-	-	5	V
Reverse current ⁽¹⁾	$V_R = 5\text{V}$ (any I/O pin to Ground)	I_R	-	-	1	μA
Clamping voltage ⁽²⁾	$I_{PP} = 1\text{A}$ (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

ORDERING INFORMATION		
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 μs pulse waveform according to IEC 61000-4-5

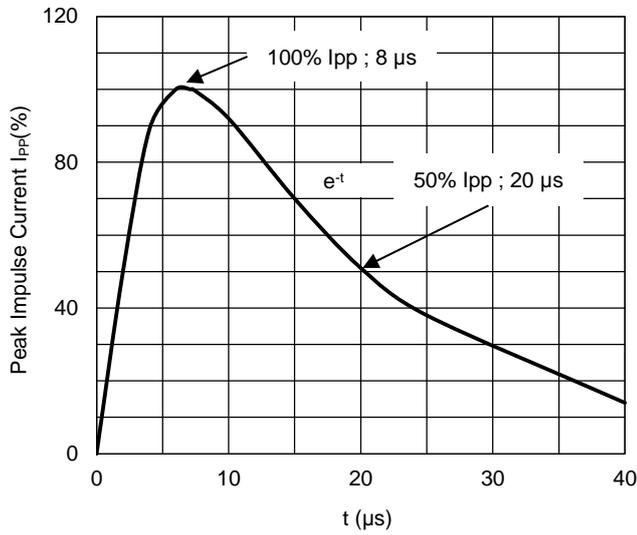


Fig.2 ESD pulse waveform according to IEC 6100-4-2

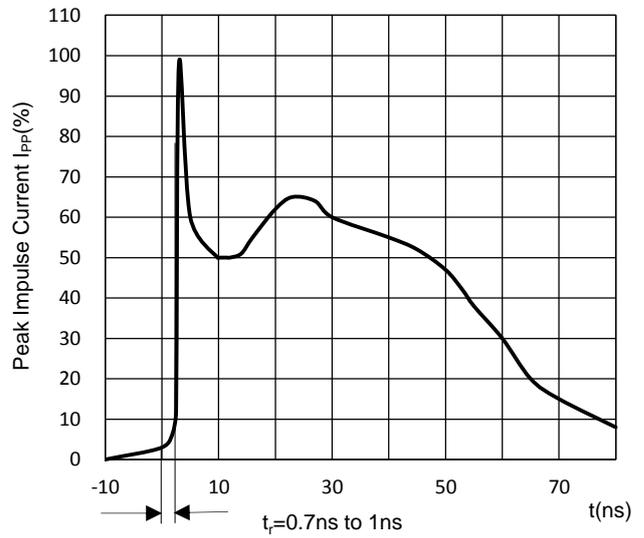


Fig.3 TLP I-V Curve

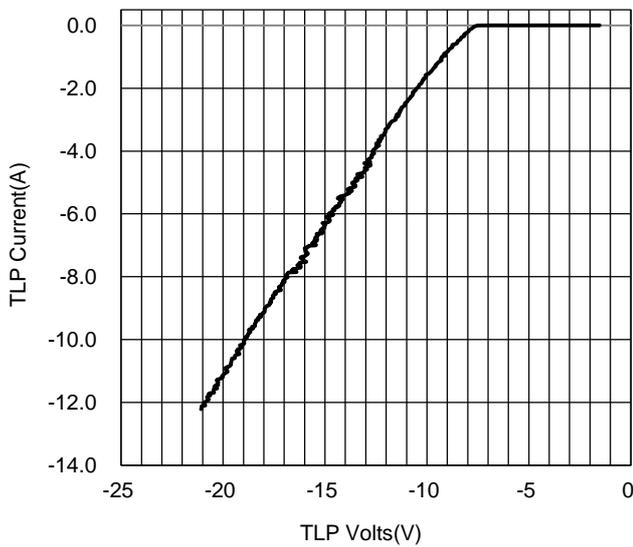
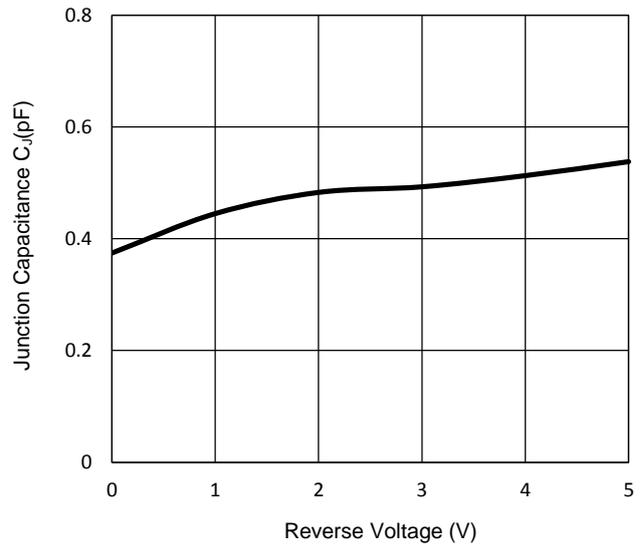


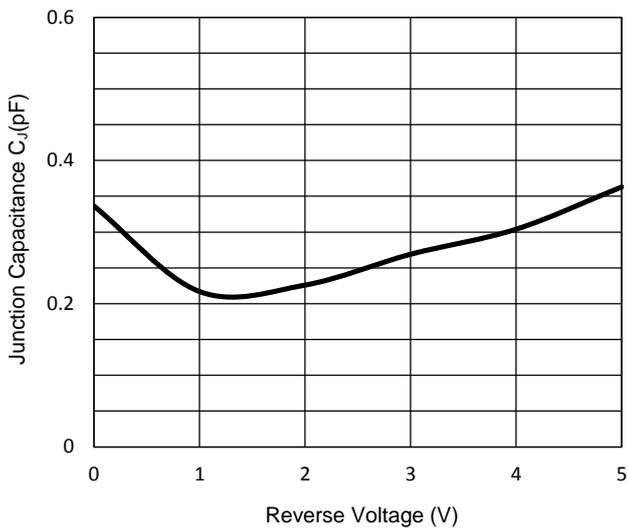
Fig.4 Typical Junction Capacitance (any I/O pin to Ground)



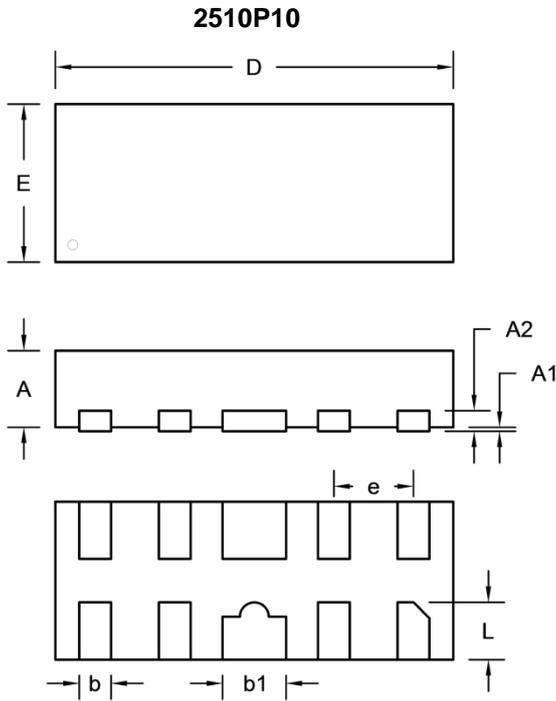
CHARACTERISTICS CURVES

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

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

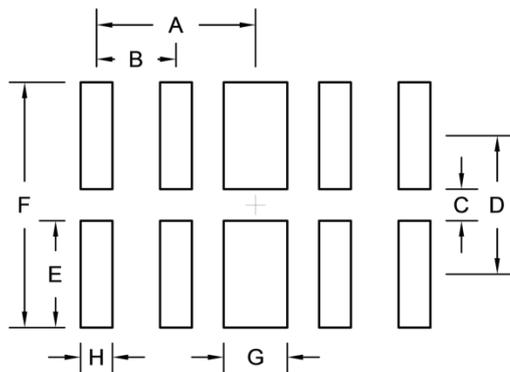


PACKAGE OUTLINE DIMENSIONS



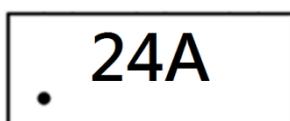
DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.46	0.51	0.018	0.020
A1	0.00	0.05	0.000	0.002
A2	0.13		0.005	
b	0.15	0.25	0.006	0.010
b1	0.35	0.45	0.014	0.018
D	2.40	2.60	0.094	0.102
E	0.90	1.10	0.035	0.043
e	0.50		0.020	
L	0.30	0.425	0.012	0.017

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

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Purchasers are solely responsible for the choice, selection, and use of TSC products and TSC assumes no liability for application assistance or the design of Purchasers' products.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.