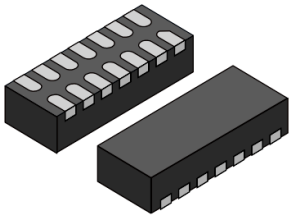
Description

The CSL05U6U is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time. The CSL05U6U is suited for using in USB3.0， HDMI high speed data ports.



Features

- IEC 61000-4-2 (ESD)
  - ±20kV Contact Discharge
  - ±25kV Air Discharge
- IEC 61000-4-5 (Lightning)
  - 4A (8/20us)
- IEC 61000-4-4 EFT Protection
  - 40A (5/50ns)
- Halogen free and RoHS compliant
- Protects 6 channels I/O line
- Transient protection for high-speed data lines
- Low clamping voltage
- Low leakage current

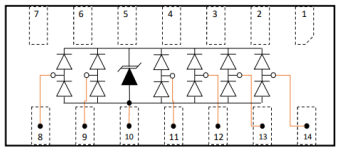
Mechanical Characteristics

- DFN3514P14
- ROHS/ Compliant
- Halogen free
- Molding compound flammability rating：UL 94V-0
- Marking：Part number
- Packing: Tape and Reel per EIA 481

Applications

- Microprocessor based equipment
- Personal Digital Assistants
- Notebooks / Desktops / Servers
- LCD/TV
- Digital cameras
- External storages

Pin Configuration

Pin	Name	Description	Outline	Circuit Diagram
5,10	Gnd			
7,8 6,9 4,11 3,12 2,13 1,14	IO	Protect IO		

Ordering Information

Part Number	Package	Marking	Packing	Reel Size
CSL05U6U	DFN3514P14	0526P	3000/Tape & Reel	7 inch

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25℃	P_{pk}	-	60	W
Peak pulse current (tp=8/20us)@25℃	I_{PP}		4	A
ESD (IEC61000-4-2 air discharge) @25℃	V_{ESD}	-	±25	kV
ESD (IEC61000-4-2 contact discharge) @25℃	V_{ESD}	-	±20	kV
Junction temperature	T_J	-	125	℃
Operating temperature	T_{OP}	-55	125	℃
Storage temperature	T_{STG}	-55	150	℃
Lead temperature	T_L	-	260	℃

Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	IT=1mA	6			V
Reverse Leakage Current	I_R	V_{RWM}=5V			0.1	uA
Clamping Voltage	V_C	I_{PP}=1A; tp=8/20us		8.0		V
Clamping Voltage	V_C	I_{PP}=4A; tp=8/20us		12	14	V
TLP Clamping Voltage	V_C	I_{PL}=3A; tp=0.2/100ns		10		V
TLP Clamping Voltage	V_C	I_{PL}=20A; tp=0.2/100ns		21.5		V
Dynamic resistance	Rdyn	TLP, I/O to Gnd		0.68		Ω
Junction Capacitance	C_J	I/O to GND; VR=0V; f=1MHz		0.45	0.8	pF
Junction Capacitance	C_J	I/O to IO; VR=0V; f=1MHz		0.25	0.4	pF

Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

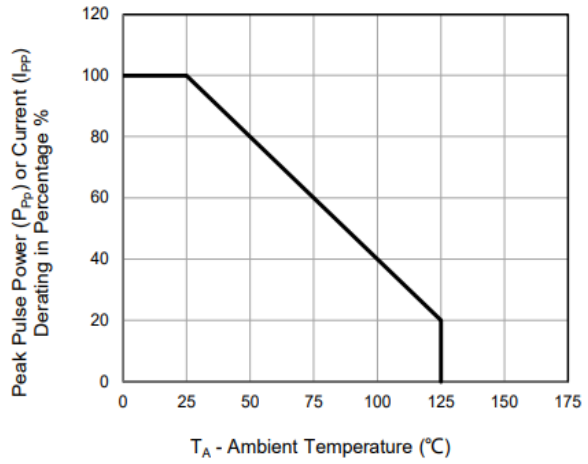


Figure1. Peak pulse power derating curve

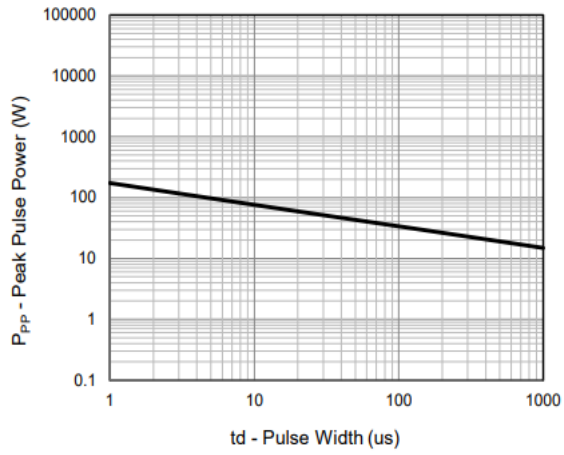


Figure2. Peak Pulse Power vs. Pulse Time

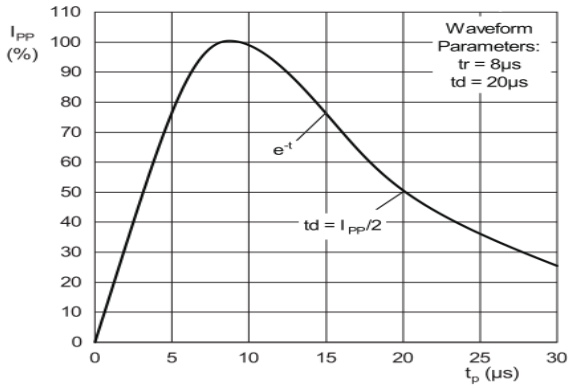


Figure3. Pulse Waveform

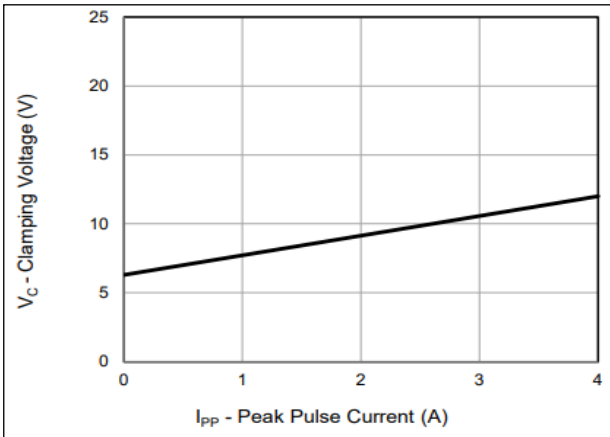


Figure4. Clamp voltage Vs. current

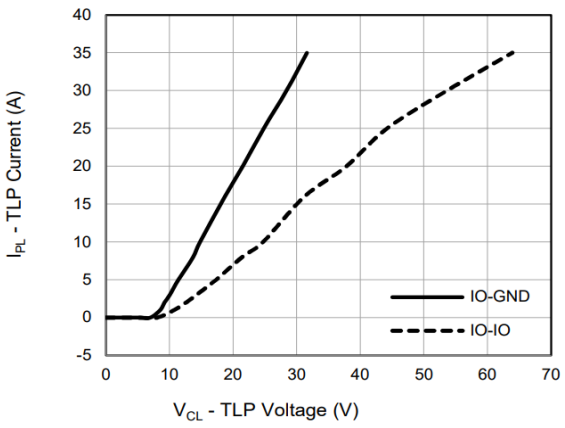
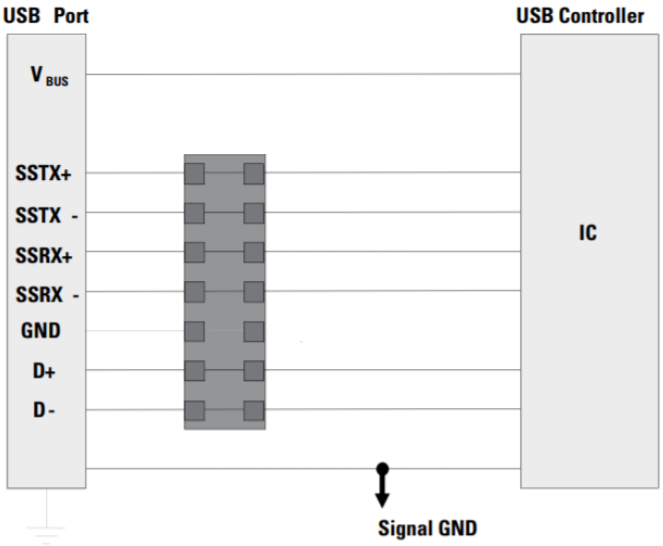


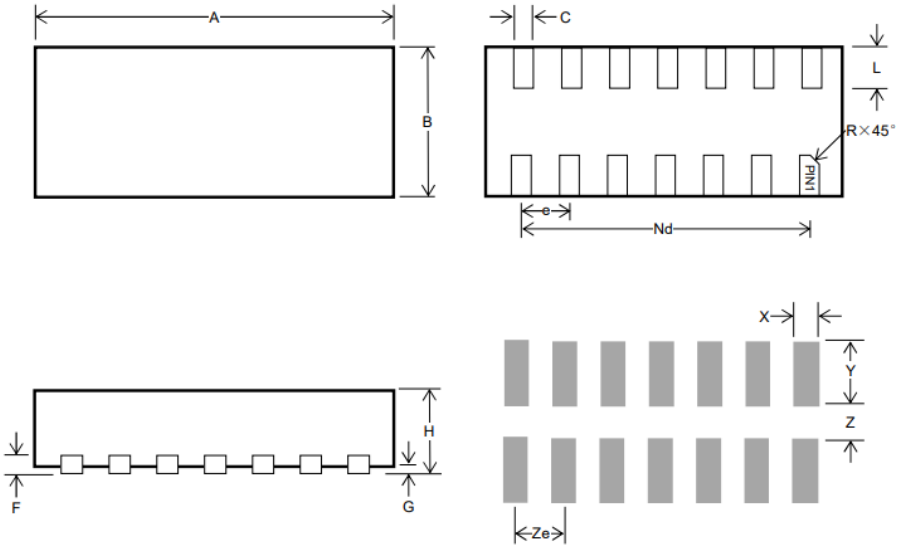
Figure5.Transmission Line Pulsing(TLP)

Applications Information

Typical USB3.0 Application



Package Outline Drawing



DFN3514P14			
SYMBOL	Millimeters		
	MIN	NOM	MAX
A	3.4	3.5	3.6
B	1.25	1.35	1.45
C	0.15	0.2	0.25
F		0.203	
G	0	0.02	0.05
H	0.45	0.5	0.55
L	0.25	0.3	0.35
e		0.5	
R		0.1	
X		0.3	
Y		0.5	
Z		0.65	
Ze		0.5	

Recommended Land Pattern

See above shape and dimension

Revision history of Specification

Version	Change Items	Effective Date
1.0	Initial Release	13-Aug-2021

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