

Descriptio

The CSL05D4UB is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time. The CSL05D4UB suited for use in USB 2.0, Firewire, DVI, and Gigabit Ethernet Interfaces.



Mechanical Characteristics

- ◆SOT-23-6L
- ◆ROHS/ Compliant
- ◆Halogen free
- ◆Molding compound flammability rating: UL 94V-0
- ◆Marking: Part number
- ◆Packing: Tape and Reel per EIA 481

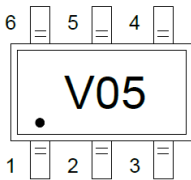
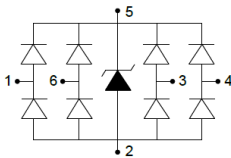
Features

- ◆IEC 61000-4-2 (ESD)
 - ±20kV Contact Discharge
 - ±20kV Air Discharge
- ◆IEC 61000-4-5 (Lightning)
 - 5.5A (8/20μs)
- ◆IEC 61000-4-4 EFT Protection
 - 40A (5/50ns)
- ◆Protects 4 I/O lines and one Vcc line
- ◆Low clamping voltage
- ◆Low leakage current

Applications

- ◆Projection TV & Monitors
- ◆Digital Visual Interface (DVI)
- ◆USB 2.0
- ◆Set-top box
- ◆IEEE 1394 Firewire Ports
- ◆Notebooks & Handhelds
- ◆Flat Panel Displays
- ◆PCI Express

Pin Configuration

Pin	Name	Description	Outline	Circuit Diagram
1	IO1	Connect to I/O		
2	GND	Connect to GND		
3	IO2	Connect to I/O		
4	IO3	Connect to I/O		
5	Vcc	Connect to Vcc		
6	IO4	Connect to I/O		

Ordering Information

Part Number	Package	Marking	Packing	Reel Size
CSL05D4UB	SOT-23-6L	.V05	3000/Tape & Reel	7 inch

Table-1 Ordering information

Absolute Maximum Rating (TA=25°C unless otherwise noted)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25°C	P _{pk}	-	80	W
Peak pulse current (tp=8/20us)@25°C	I _{PP}	-	5.5	A
ESD (IEC61000-4-2 air discharge) @25°C	V _{ESD}	-	±20	kV
ESD (IEC61000-4-2 contact discharge) @25°C	V _{ESD}	-	±20	kV
Junction temperature	T _J	-	125	°C
Operating temperature	T _{OP}	-40	125	°C
Storage temperature	T _{STG}	-55	150	°C
Lead temperature	T _L	-	260	°C

Table-3 Absolute Maximum rating

Electrical Characteristics (Ta = 25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V _{RWM}				5	V
Reverse Breakdown Voltage	V _{BR}	I _T =1mA	6			V
Reverse Leakage Current	I _R	V _{RWM} =5V			1	μA
Clamping Voltage	V _C	I _{PP} =1A; tp=8/20μs		10		V
Clamping Voltage	V _C	I _{PP} =5.5A; tp=8/20μs		16		V
Junction Capacitance	C _J	I/O to GND; V _R =0V; f=1MHz		0.8		pF
Junction Capacitance	C _J	I/O to IO; V _R =0V; f=1MHz		0.4		pF

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

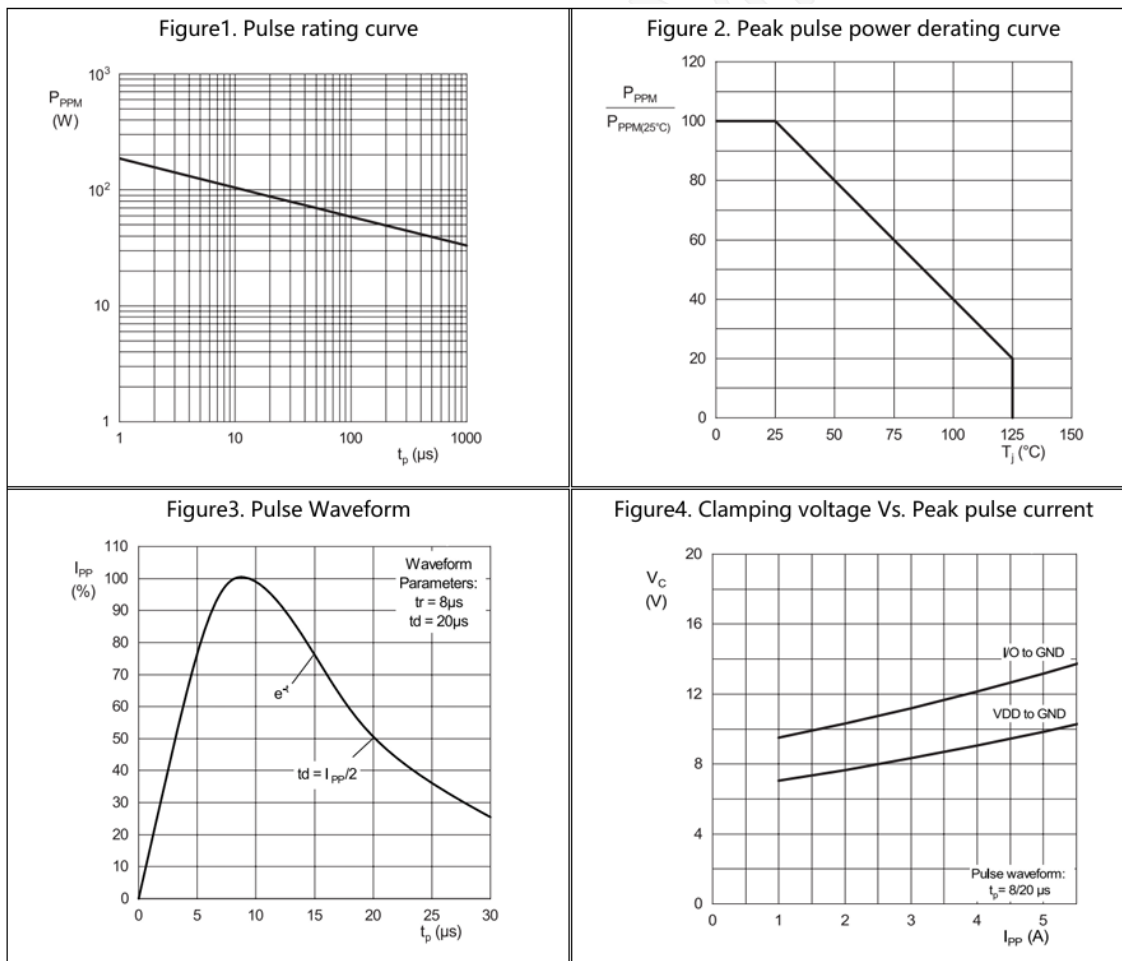


Figure5. Capacitance vs Reverse voltage

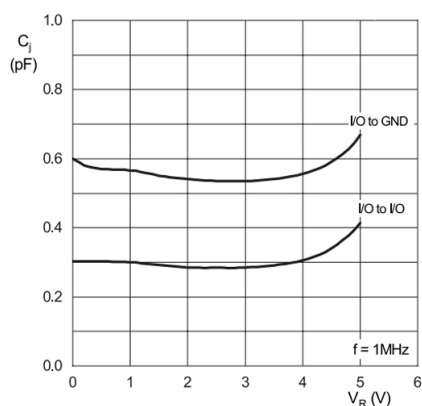
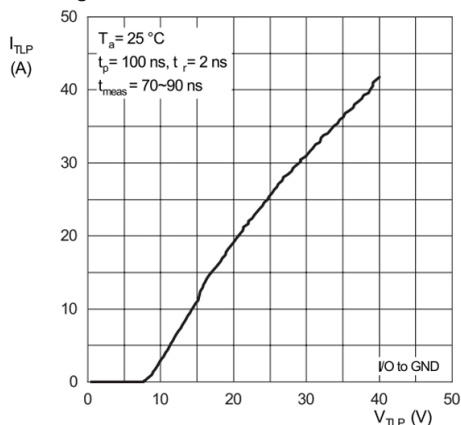
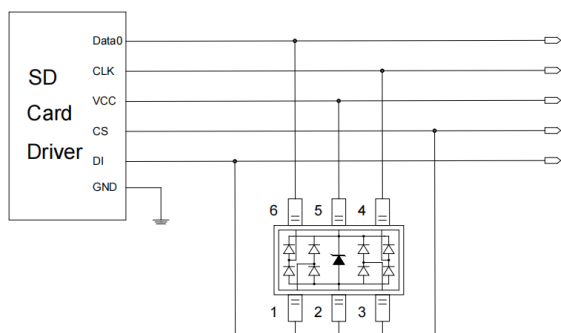


Figure6. TLP I-V Curve (I/O to GND)

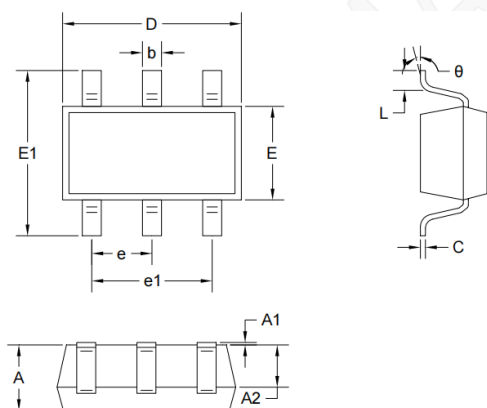


Applications Information

Typical Interface application

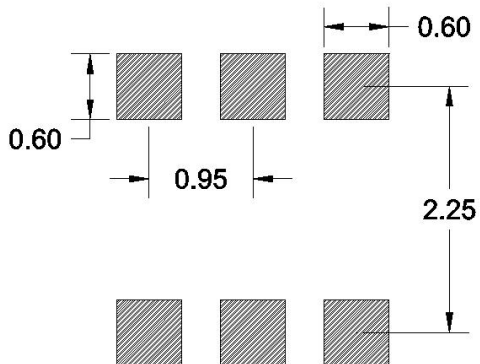


Package Outline Drawing



Dimensions in Millimeters							
Symbol		A	A1	A2	b	c	D
Spec	Min	1.050	0.000	1.050	0.300	0.100	2.820
	Max	1.250	0.100	1.150	0.500	0.200	3.020
Symbol		E	E1	e	e1	L	θ
Spec	Min	1.500	2.650	0.950BSC	1.800	0.300	0°
	Max	1.700	2.950		2.000	0.600	8°

Recommended Land Pattern



Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference only