

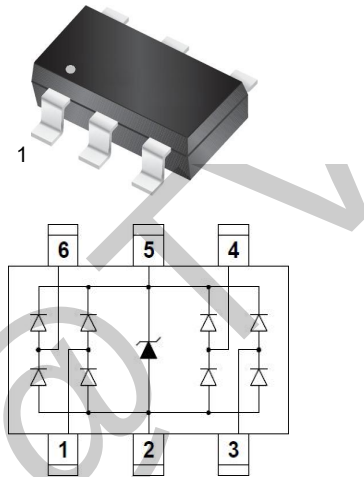
Features

- Ultra low capacitance: 0.35pF typical (I/O to I/O)
- Ultra low leakage current at μA level
- Low operating voltage: 5V
- Low clamping voltage
- Protects up to 4 data lines and 1 power line
- IEC 61000-4-2 air $\pm 30\text{kV}$ / contact $\pm 25\text{kV}$ compliant
- IEC 61000-4-4 40A (5/50ns) and IEC 61000-4-5 60W compliant
- RoHS compliant

Mechanical Data

- Package: SOT23-6
- Lead finish: Matte Tin
- UL flammability classification rating: 94V-0
- Case material: Green molding compound
- Moisture sensitivity: Level 3 per J-STD-020
- Terminal connections and marking: See diagram

SOT-23-6L



Applications

- USB 2.0 and USB 3.0 ports
- USB OTG
- Digital video interface (DVI)
- Monitor and flat panel displays
- PCI Express and Serial SATA ports
- Gigabit Ethernet
- IEEE 1394 FireWire ports
- Consumer products such as STB, DVD, DSC and DVC

Absolute Maximum Ratings

Ratings at 25 °C, ambient temperature unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Pulse Power ($T_P=8/20\mu\text{s}$)	P_{PP}	60	W
ESD contact/air discharge (IEC-61000-4-2)	V_{ESD}	$\pm 25\text{kV}/\pm 30\text{kV}$	kV
Peak Pulse Current ($T_P = 8/20\mu\text{s}$)	I_{PP}	4	A
Junction Temperature	T_J	-55 to +125	°C
Storage temperature	T_{STG}	-55 to +150	°C

Electrical Characteristics

(T_A = 25 °C unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Reverse stand-off Voltage	V _{RWM}		-	-	5	V
Holding Voltage	V _{BR}	I _T =1mA	6	-	-	V
Reverse Leakage Current	I _R	V _{RWM} = 5V	-	-	5	uA
Clamping Voltage	V _C	I _{PP} = 1A (8 × 20μs pulse)	-	10	-	V
Clamping Voltage(TLP)	V _C	I _{PP} = 4A (8 × 20μs pulse)	-	12	15	V
Junction Capacitance	C _J	V _R =0V, f=1MHz	-	0.35	-	pF
Junction Capacitance	C _J	V _R =0V, f=1MHz	-	1	-	pF

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

Figure 1: Peak Pulse Power vs. Pulse Time

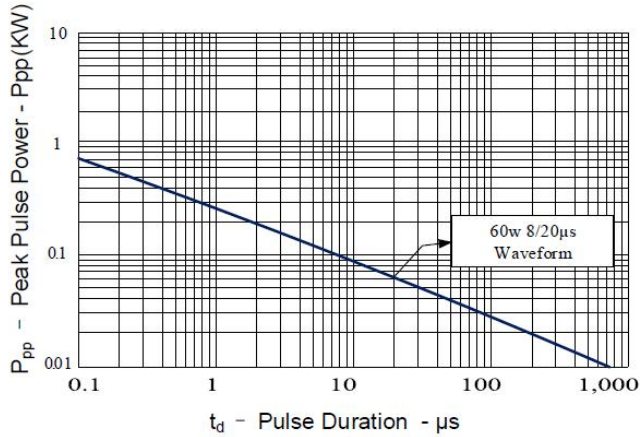


Figure 2: Power Derating Curve

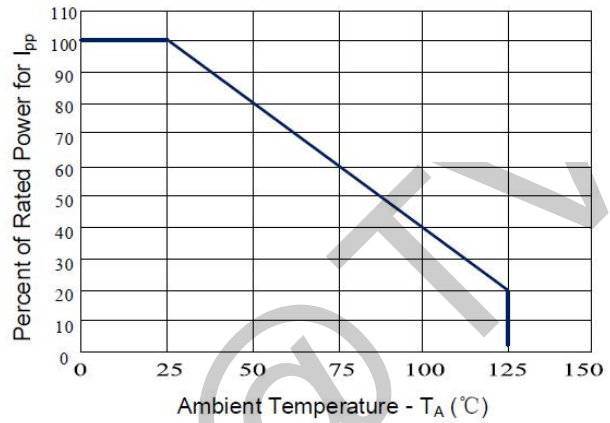


Figure 3: Pulse Waveform

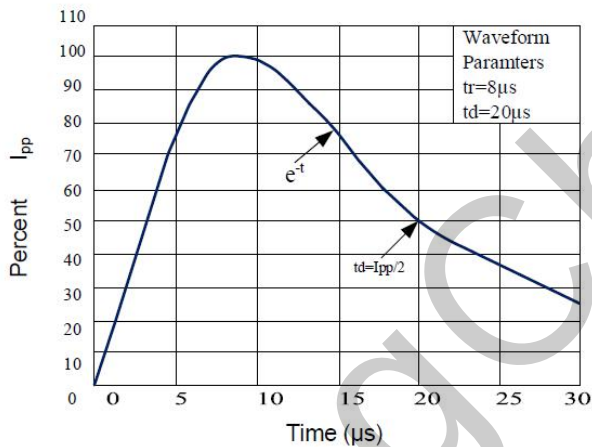


Figure 4: Clamping Voltage vs. Peak Pulse Current

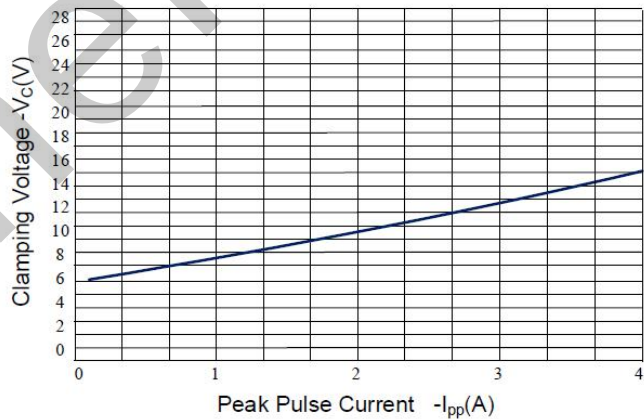


Figure 5: Capacitance vs. Reverse Voltage

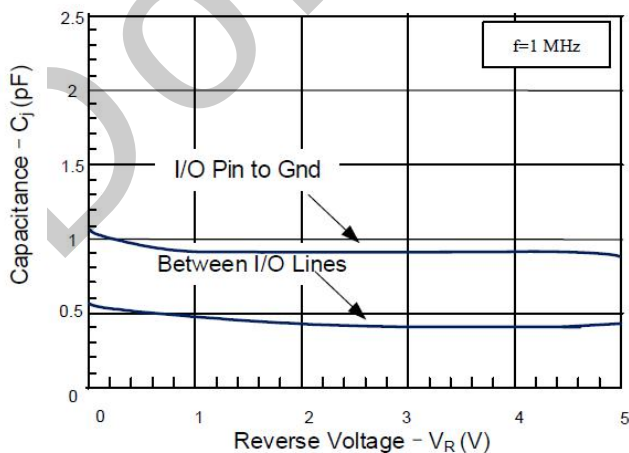
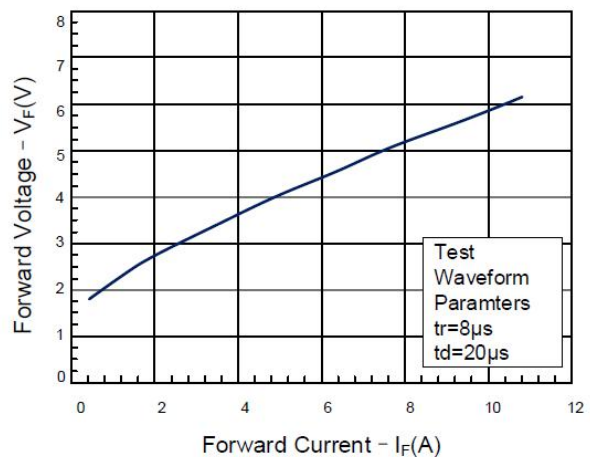
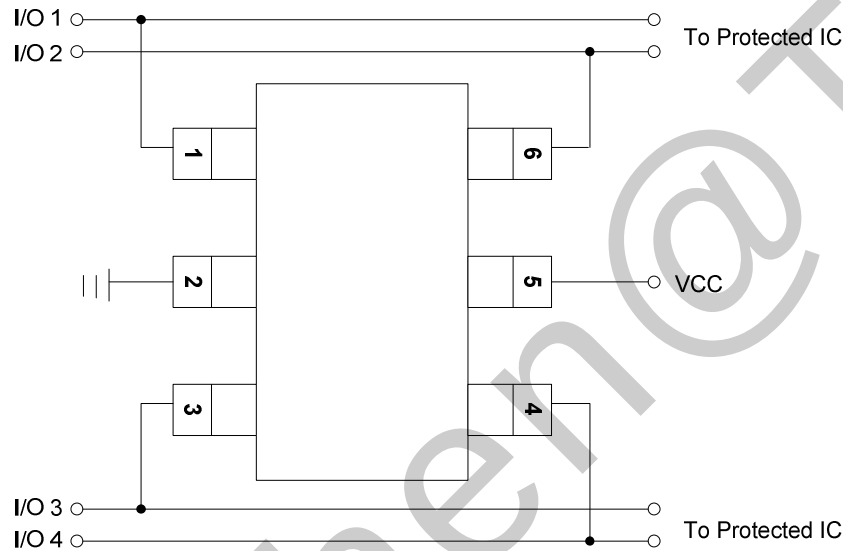


Figure 6: Forward Voltage vs. Forward Current

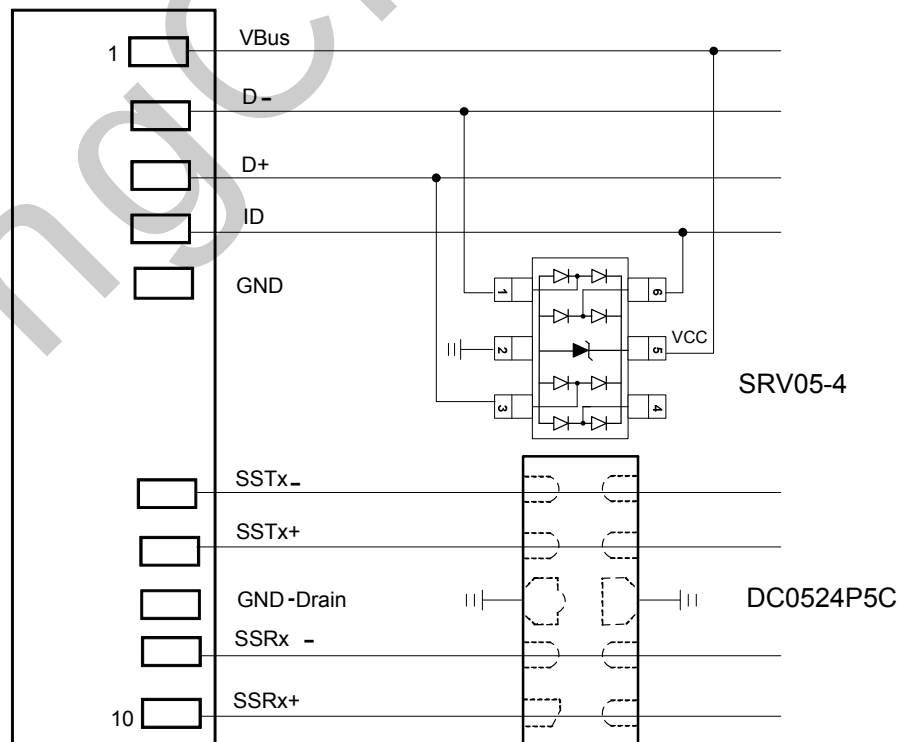


Typical Application

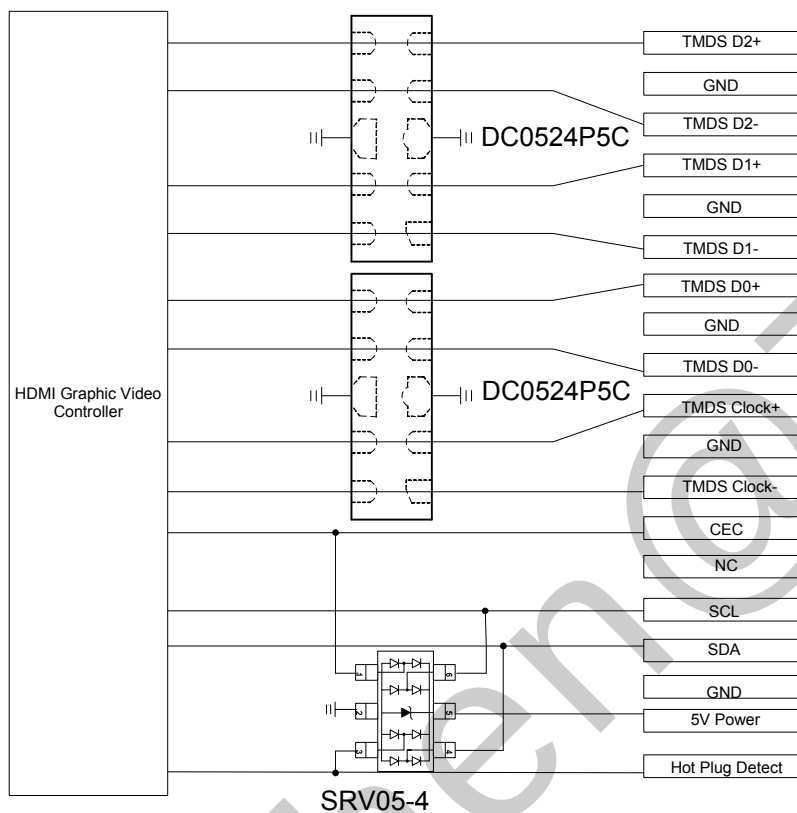
The SRV05-4 is designed to protect four data lines from transient over-voltages by clamping them to fixed reference. When the voltage on the protected line exceeds the reference voltage (plus diode V_F) the steering diodes are forward biased, conducting the transient current away from the sensitive circuitry. Data lines are connected at pins 1, 3, 4 and 6. The negative reference (REF1) is connected at pin 2. This pin should be connected directly to a ground plane on the board for best results. The path length is kept as short as possible to minimize parasitic inductance. The positive reference (REF2) is connected at pin 5.



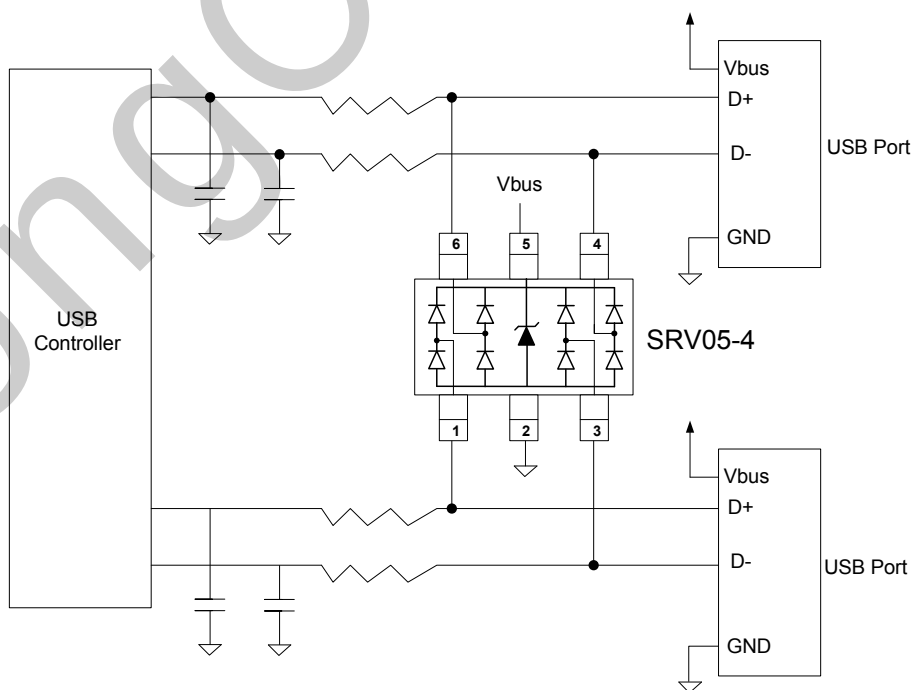
USB 3.0 Port Application



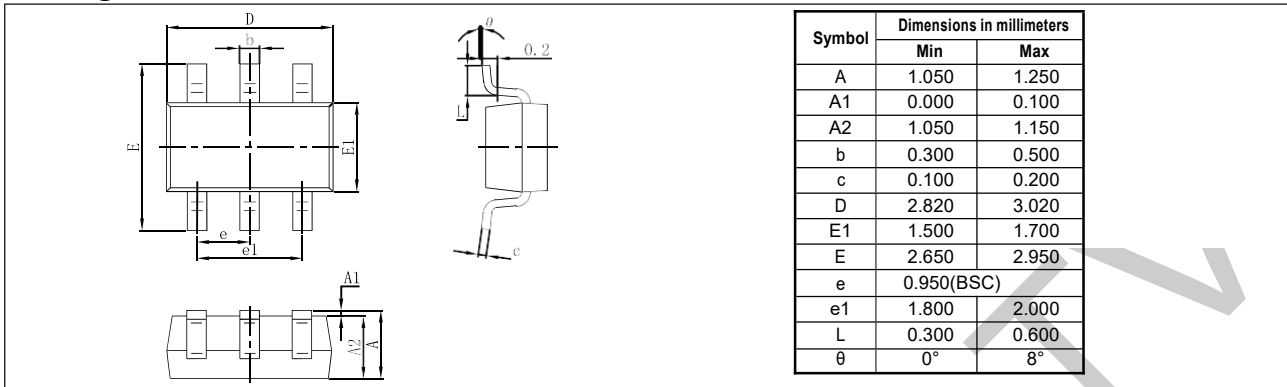
HDMI Port Application



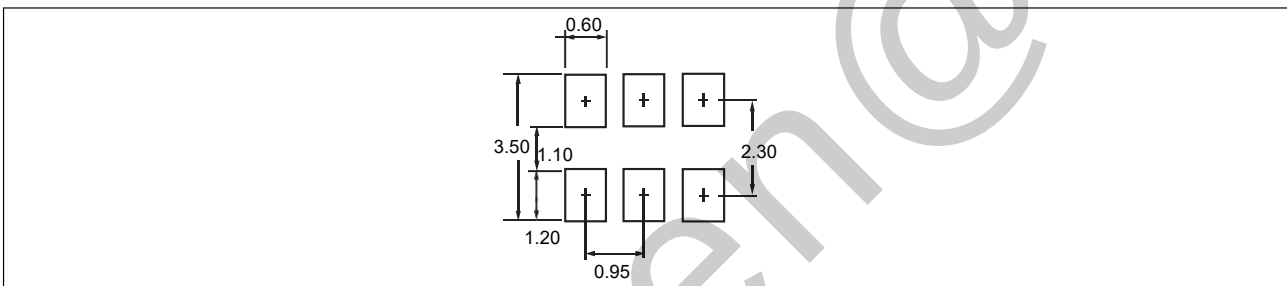
USB Port Application



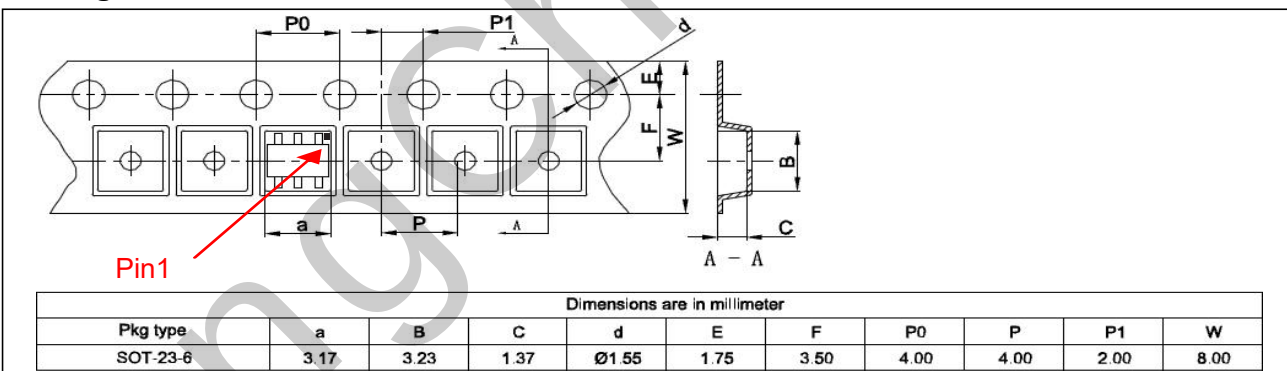
Package Dimensions



Pad dimensions



Package information



Ordering information

Order code	Package	Packaging option	Base quantity	Packaging specification
SRV05-4	SOT23-6	Tape and reel	3000pcs / reel	EIA STD RS-481

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