

1.Description

CS0816 is a low capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for high-speed data interfaces. With typical capacitance of 0.7pF only, CS0816 is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events.

3.Features

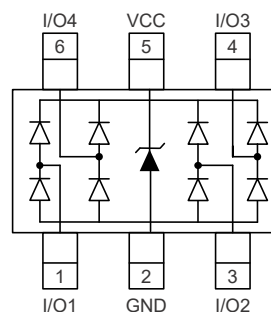
- Transient protection for high-speed data lines
- IEC 61000-4-2 (ESD) $\pm 15\text{kV}$ (Air)
- $\pm 8\text{kV}$ (Contact)
- IEC 61000-4-4 (EFT) 40A (5/50 ns)
- Cable Discharge Event (CDE)
- Small package (2.9mm $\times$ 2.8mm $\times$ 1.4mm)
- Protects four data lines

2.Applications

- Video Graphics Cards
- Desktops, Servers and Notebooks
- IEEE 1394 Ports
- USB2.0 Power and Data Line Protection
- Display Ports
- SIM Ports

- Low capacitance: 0.7pF Typical (I/O-GND)
- Low clamping voltage
- Green Part
- Low leakage current: 0.1 μA @ VRWM (Typical)
- Each I/O pin can withstand over 1000 ESD strikes for $\pm 8\text{kV}$ contact discharge

4.Pinning information



SOT23-6



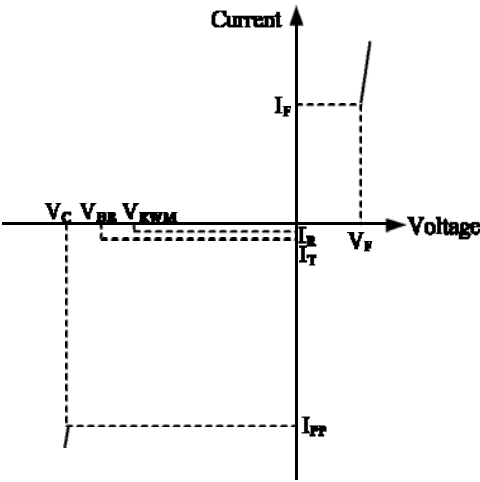
5. Absolute Maximum Ratings $T_A = 25^\circ\text{C}$

Parameter	Symbol	Max	Units
ESD per IEC 61000-4-2(Air)	V_{ESD}	± 15	kV
ESD per IEC 61000-4-2(Contact)		± 8	kV
Junction Temperature	T_{OPT}	-55 to 125	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to 125	$^\circ\text{C}$



6.Electrical Characteristic (T_A=25°C unless otherwise noted)

Symbol	Conditions	Min	Typ	Max	Units
V _{RWM}				5	V
I _R	V _{RWM} =5V, T=25°C, Between I/O and GND		0.1	1	μA
V _{BR}	I _T =1mA, T=25°C, Between I/O and GND	6	8	10	V
V _C	I _{PP} =1A, t _p =8/20μs, Between I/O and GND			12	V
C _{ED}	V _R =0V, f=1MHz, Between I/O and GND		0.7	0.8	pF
C _{ESD}	V _R =0V, f=1MHz, Between I/O and GND		0.35		pF



Uni-Directional TVS

Symbol	Parameter
V _{RWM}	Nominal Reverse Working Voltage
I _R	Reverse Leakage Current @ V _{RWM}
V _{BR}	Reverse Breakdown Voltage @ I _T
I _T	Test Current for Reverse Breakdown
V _C	Clamping Voltage @ I _{PP}
I _{PP}	Maximum Peak Pulse Current
C _{ESD}	Parasitic Capacitance
V _R	Reverse Voltage
f	Small Signal Frequency
I _F	Forward Current
V _F	Forward Voltage @ I _F

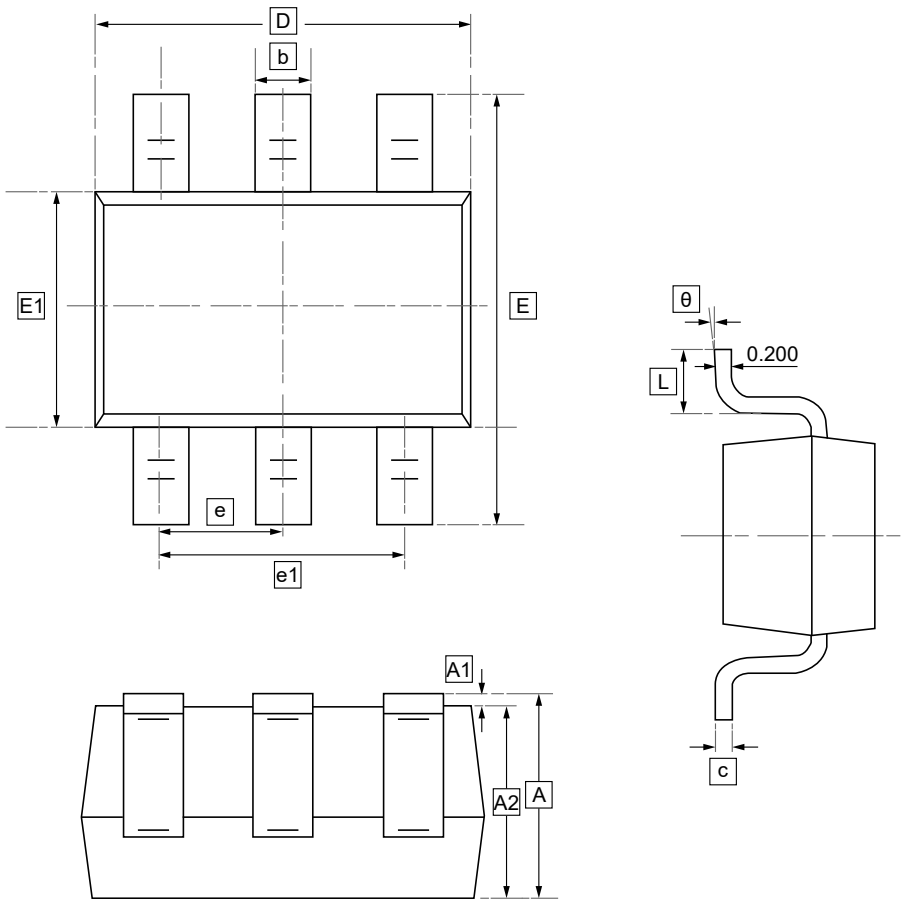


7. Typical characteristic

Figure 1: Voltage Sweeping of I/O to GND	Figure 2: Insertion Loss S21 of I/O to GND
Figure 3: Capacitance vs. Reverse Voltage	Figure 4: Normalized Capacitance vs. Reverse Voltage
Figure 5: ESD Clamping of I/O to GND (+8kV Contact per IEC 61000-4-2)	Figure 6: ESD Clamping of I/O to GND (-8kV Contact per IEC 61000-4-2)



8.SOT-23-6 Package Outline Dimensions

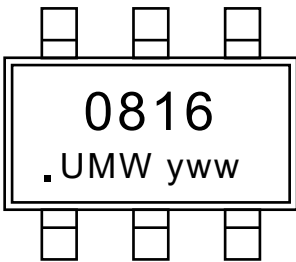


DIMENSIONS (mm are the original dimensions)

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



9.Ordering information



yww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW CS0816	SOT23-6	3000	Tape and reel



10.Disclaimer

UMW reserves the right to make changes to all products, specifications. Customers should obtain the latest version of product documentation and verify the completeness and currency of the information before placing an order.

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