4通道、12V ESD保护二极管阵列

UESD16V8S4C SOT23-6

描述

UESD16V8S4C TVS二极管阵列设计用于保护敏感元器件免于ESD 损坏或闩锁，适用于电路板空间有限的高压应用。该器件是单向设备，可用于保护信号极性高于地的线路，每个器件最多可保护四条线路。

TVS 二极管是固态设备，具有大截面积结，可传导高瞬态电流，特别适用于瞬态抑制。该器件具有适用于板级保护的理想电气特性，例如快速响应时间、低工作电压、低钳位电压和无器件劣化。

UESD16V8S4C可用于满足IEC 61000-4-2标准的第4级抗扰度要求。其小型封装使其非常适合用于手机、PDA、笔记本电脑和数码相机等便携式电子产品。

应用

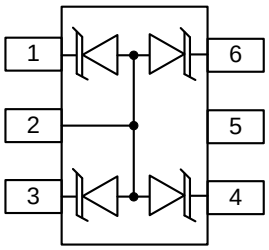
- 手机听筒和配件
- 电信设备
- 笔记本电脑和掌上电脑
- 便携式设备
- 工业PC
- 工业自动化

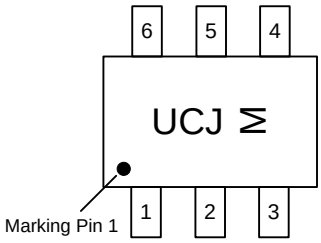
特性

- 数据线和电源线瞬态保护，符合IEC 61000-4-2标准：±15kV（空气间隙放电），±8kV（接触放电）
- 保护4条I/O线路
- 超小型SOT23-6封装
- 反向工作电压：12V
- 低漏电流
- 低工作和钳位电压
- 固态硅雪崩技术

引脚配置

顶部视图





M: Month Code
UESD16V8S4C
SOT23-6

订购信息

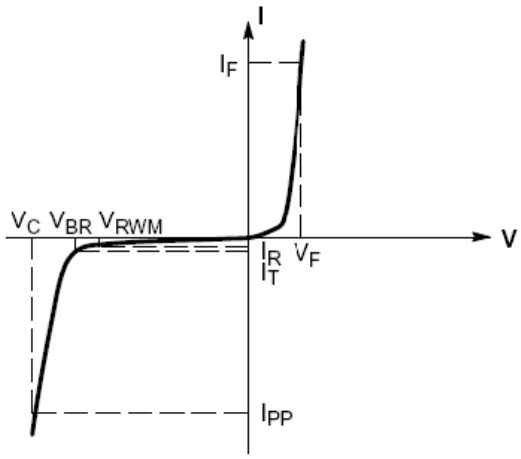
芯片型号	反向工作电压	封装类型	通道数	丝印编码	发货数量
UESD16V8S4C	12.0V	SOT23-6	4	UCJ	3000pcs/7 Inch Tape & Reel

Absolute Maximum Ratings

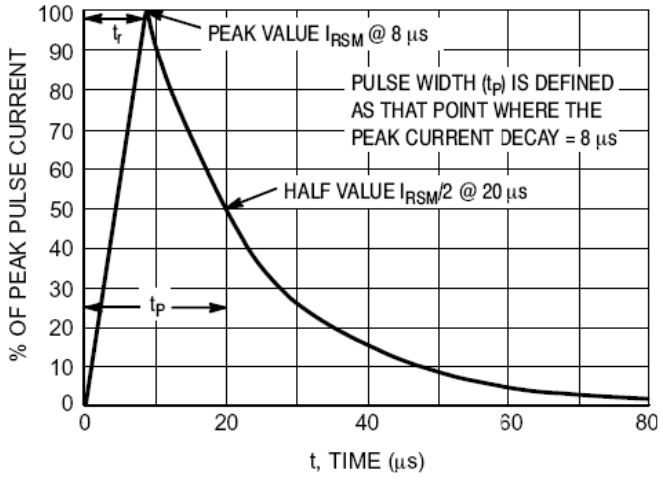
Rating	Symbol	Value	Unit
Peak Pulse Power (t_P=8/20μs)	P_{PK}	140	Watts
Maximum Peak Pulse Current (t_P=8/20μs)	I_{PP}	5.9	Amps
Lead Soldering Temperature	T_L	260 (10 sec.)	℃
Operating Temperature	T_J	-55 to +125	℃
Storage Temperature	T_{STG}	-55 to +150	℃

Symbol Definition

Parameter	Symbol
Maximum Reverse Peak Pulse Current	I_{PP}
Clamping Voltage @ I_{pp}	V_C
Working Peak Reverse Voltage	V_{RWM}
Maximum Reverse Leakage Current @ V_{RWM}	I_R
Breakdown Voltage @ I_T	V_{BR}
Test Current	I_T
Forward Current	I_F
Forward Voltage @ I_F	V_F
Peak Power Dissipation	P_{PK}
Max. Capacitance @ V_R=0V, f=1MHz	C



Uni−Directional TVS



Electrical Characteristics

(T=25℃, Device for 12.0V Reverse Stand-Off Voltage)

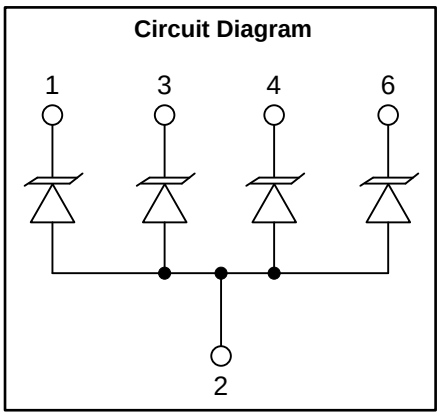
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse Stand-Off Voltage	V_{RWM}				12	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	16		18	V
Reverse Leakage Current	I_R	V_{RWM}=12V, T=25℃			0.5	μA
Clamping Voltage	V_C	I_{PP}=5.9A, t_p=8/20μs			23	V
Junction Capacitance	C_J	V_R=0V, f=1MHz		20	30	pF

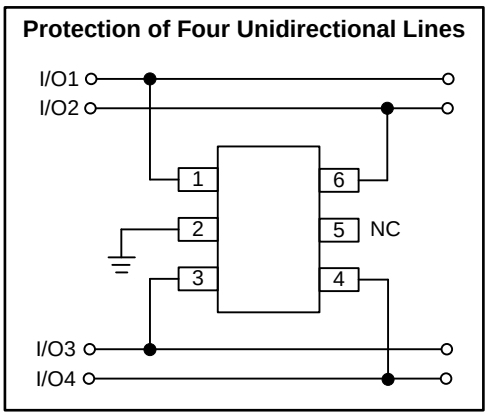
Applications Information

UESD16V8S4C ESD protection diode is designed to protect quad data, I/O, or power supply line. The device is unidirectional and may be used on lines where the signal polarity is above ground. The cathode should be placed towards the line that is to be protected.

Device Connection for Protection of Quad Data Lines

The Quad TVS Diode Array is designed to protect up to four unidirectional data lines. The device is connected as follows:
Unidirectional protection of four I/O lines is achieved by connecting pins 1, 3, 4 and 6 to the data lines. Pin 2 is connected to ground. The ground connection should be made directly to the ground plane for best results. The path length is kept as short as possible to reduce the effects of parasitic inductance in the board traces.





Circuit Board Layout Recommendations for Suppression of ESD

Good circuit board layout is critical for the suppression of ESD induced transients. The following guidelines are recommended:

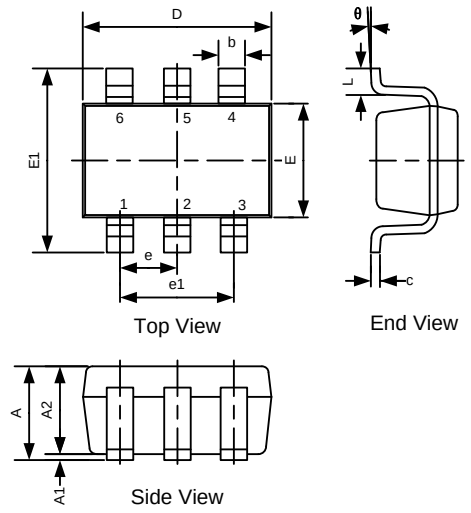
Place the TVS near the input terminals or connectors to restrict transient coupling.
Minimize the path length between the TVS and the protected line.
Minimize all conductive loops including power and ground loops.
The ESD transient return path to ground should be kept as short as possible.
Never run critical signals near board edges.

Use ground planes whenever possible. For multilayer printed-circuit boards, use ground vias.
Keep parallel signal paths to a minimum.
Avoid running protection conductors in parallel with unprotected conductor.
Minimize all printed-circuit board conductive loops including power and ground loops.
Avoid using shared transient return paths to a common ground point.

Package Information

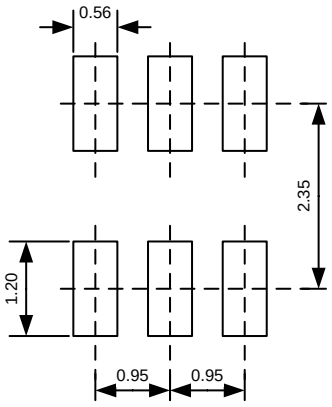
UESD16V8S4C SOT23-6

Outline Drawing



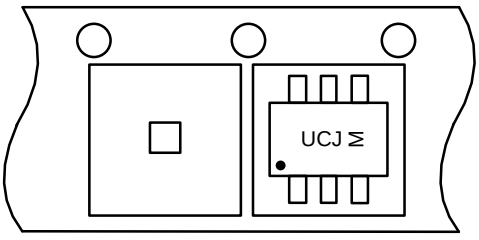
Symbol	DIMENSIONS					
	MILLIMETERS			INCHES		
	Min	Typ	Max	Min	Typ	Max
A	1.013	1.15	1.40	0.040	0.045	0.055
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2	1.00	1.10	1.30	0.039	0.043	0.051
b	0.30	-	0.50	0.012	-	0.020
c	0.10	0.15	0.20	0.004	0.006	0.008
D	2.82	-	3.10	0.111	-	0.122
E	1.50	1.60	1.70	0.059	0.063	0.067
E1	2.60	2.80	3.00	0.102	0.110	0.118
e	0.95REF			0.037REF		
e1	1.90REF			0.075REF		
L	0.30	-	0.60	0.012	-	0.024
θ	0°	-	8°	0°	-	8°

Land Pattern



NOTES:
1. Compound dimension: 2.92×1.60;
2. Unit: mm;
3. General tolerance ±0.05mm unless otherwise specified;
4. The layout is just for reference.

Tape and Reel Orientation



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