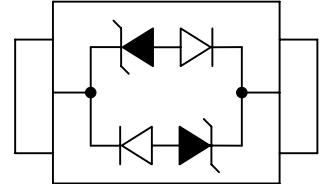


Description

The series are an ultra low capacitance TVS array designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to data an trans-mission lines from overvoltage caused by electrostatic discharge (ESD), cable discharge events (CDE) and lightning.

The unique design incorporates surge rated, low capacitance steering diodes and a TVS diode in a single package. During transient conditions, the steering diodes direct the transient current to ground. The internal TVS diode clamps the transient voltage to a safe level. The ultra low capacitance array configuration allows the user to protect up to the high speed data lines.



Features

- IEC61000-4-2 ESD 15KV Air, 8KV contact compliance
- SOD-323 surface mount package
- Protects one I/O line
- Peak power dissipation of 350W under 8/20 μs waveform
- Working voltage: 3.3V, 5V, 12V and 15V
- Low leakage current
- Low operating and clamping voltages
- Solid-state silicon avalanche technology
- Solder reflow temperature: Pure Tin-Sn, 260~270°C

Applications

- USB 2.0 and USB 3.0 interface
- 10/100/1000 Ethernet
- Personal digital assistants (PDA)
- Serial ATA protection
- Digital visual interface (DVI)
- Wireless system devices
- Handhelds and notebooks
- Digital cameras
- RF interface

Maximum Ratings

| Rating | Symbol | Value | Unit |
|---------------------------------------|-----------------------------------|----------|------|
| Peak pulse power (tp=8/20μs waveform) | P _{PP} | 350 | W |
| ESD voltage (Contact discharge) | V _{ESD} | ±8 | kV |
| ESD voltage (Air discharge) | | ±15 | |
| Lead soldering temperature | T _L | 260 | °C |
| Storage & operating temperature range | T _{STG} , T _J | -55~+150 | °C |

Electrical Characteristics (T_J=25°C)

UDD32C03L01

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|--------------------------------|------------------|----------------------|------|------|------|------|
| Reverse stand-off voltage | V _{RWM} | | | | 3.3 | V |
| Reverse breakdown voltage | V _{BR} | I _{BR} =1mA | 4 | | | V |
| Reverse leakage current | I _R | V _R =3.3V | | | 5 | μA |
| Clamping voltage (tp=8/20μs) | V _C | I _{PP} =1A | | | 7 | V |
| Clamping voltage (tp=8/20μs) | V _C | I _{PP} =5A | | | 15 | V |
| Peak Pulse Current (tp=8/20μs) | I _{PP} | | | | 19 | A |
| Off state junction capacitance | C _J | 0Vdc, f=1MHz | | 0.8 | | pF |

UDD32C05L01

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|--------------------------------|------------------|----------------------|------|------|------|------|
| Reverse stand-off voltage | V _{RWM} | | | | 5 | V |
| Reverse breakdown voltage | V _{BR} | I _{BR} =1mA | 6 | | | V |
| Reverse leakage current | I _R | V _R =5V | | | 5 | μA |
| Clamping voltage (tp=8/20μs) | V _C | I _{PP} =1A | | | 9.8 | V |
| Clamping voltage (tp=8/20μs) | V _C | I _{PP} =5A | | | 18.3 | V |
| Peak Pulse Current (tp=8/20μs) | I _{PP} | | | | 17 | A |
| Off state junction capacitance | C _J | 0Vdc, f=1MHz | | 0.8 | | pF |

Electrical Characteristics (T_J=25°C)

UDD32C12L01

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|--------------------------------|------------------|----------------------|------|------|------|------|
| Reverse stand-off voltage | V _{RWM} | | | | 12 | V |
| Reverse breakdown voltage | V _{BR} | I _{BR} =1mA | 13.3 | | | V |
| Reverse leakage current | I _R | V _R =12V | | | 1 | μA |
| Clamping voltage (tp=8/20μs) | V _C | I _{PP} =1A | | | 19 | V |
| Clamping voltage (tp=8/20μs) | V _C | I _{PP} =5A | | | 28.6 | V |
| Peak Pulse Current (tp=8/20μs) | I _{PP} | | | | 7 | A |
| Off state junction capacitance | C _J | 0Vdc,f=1MHz | | 0.8 | | pF |

UDD32C15L01

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|--------------------------------|------------------|----------------------|------|------|------|------|
| Reverse stand-off voltage | V _{RWM} | | | | 15 | V |
| Reverse breakdown voltage | V _{BR} | I _{BR} =1mA | 16.7 | | | V |
| Reverse leakage current | I _R | V _R =15V | | | 1 | μA |
| Clamping voltage (tp=8/20μs) | V _C | I _{PP} =1A | | | 24 | V |
| Clamping voltage (tp=8/20μs) | V _C | I _{PP} =5A | | | 35 | V |
| Off state junction capacitance | C _J | 0Vdc,f=1MHz | | 0.8 | | pF |

Typical Characteristics Curves

Figure 1. Power Derating Curve

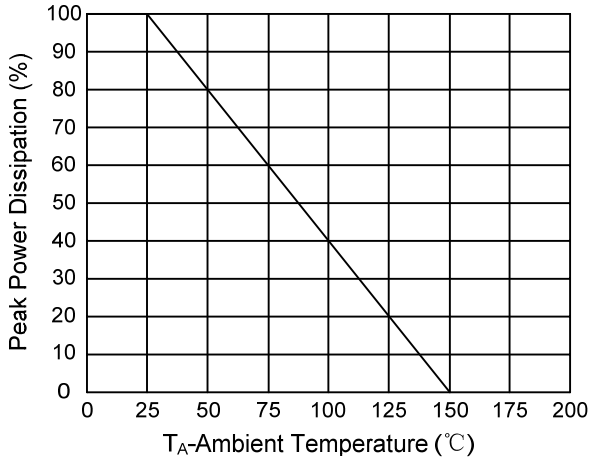


Figure 2. Pulse Waveform

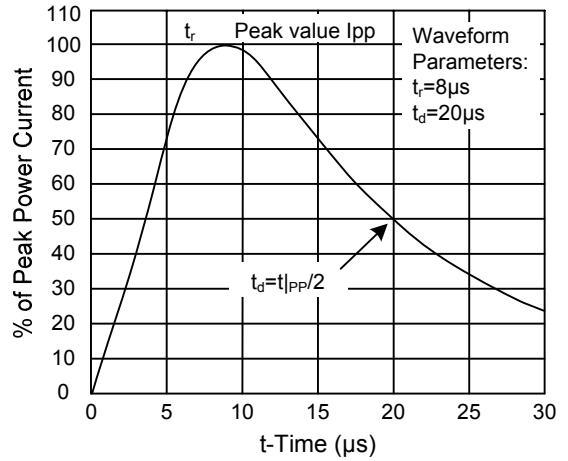


Figure 3. Non-Repetitive Peak Pulse vs Pulse Time

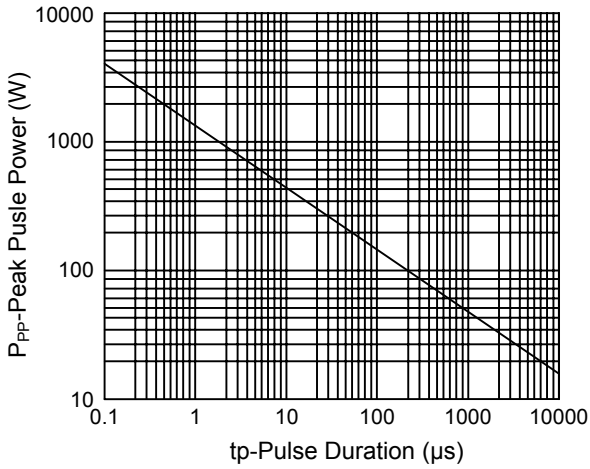
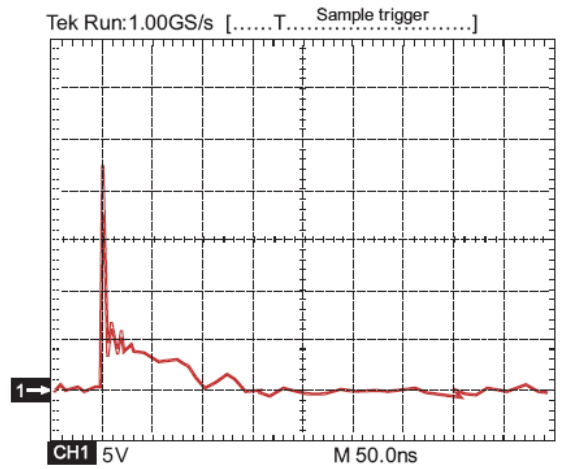
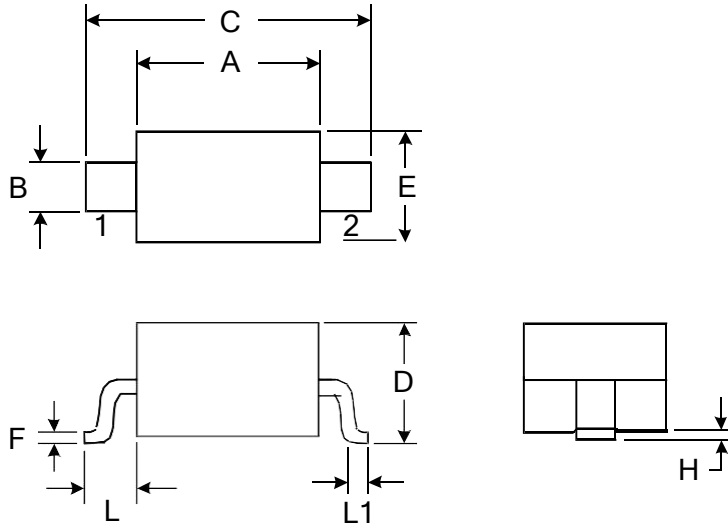


Figure 4. ESD Clamping (8kV Contact IEC61000-4-2)

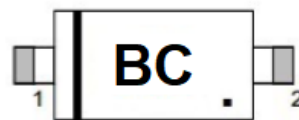


Outline Drawing – SOD323



| DIMENSIONS | | | | |
|------------|------------|-------|----------|-------|
| SYMBOL | MILLIMETER | | INCHES | |
| | MIN | MAX | MIN | MAX |
| A | 1.600 | 1.800 | 0.063 | 0.071 |
| B | 0.250 | 0.350 | 0.010 | 0.014 |
| C | 2.500 | 2.700 | 0.098 | 0.106 |
| D | | 1.000 | | 0.039 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| F | 0.080 | 0.150 | 0.003 | 0.006 |
| L | 0.475 REF | | 0.019REF | |
| L1 | 0.250 | 0.400 | 0.010 | 0.016 |
| H | 0.000 | 0.100 | 0.000 | 0.004 |

Marking



Ordering information

| Order code | Package | Base qty | Delivery mode | Marking |
|-----------------|---------|----------|---------------|---------|
| UMW UDD32C03L01 | SOD323 | 3000 | Tape and reel | AC |
| UMW UDD32C05L01 | SOD323 | 3000 | Tape and reel | BC |
| UMW UDD32C12L01 | SOD323 | 3000 | Tape and reel | DC |
| UMW UDD32C15L01 | SOD323 | 3000 | Tape and reel | EC |

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[P6KE13CA](#) [P6KE43CA](#) [P6KE6.8CA](#) [P6KE8.2](#) [P6SMBJ20CA](#) [JANTX1N6072A](#) [SR2835ESKG](#) [SA90CA](#)