

2-Line Unidirectional ESD Protection Diode

General description

These dual monolithic silicon surge protection diodes are designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment, as computers, printers, business machines, communication systems, medical equipment and other applications. Their dual junction common anode design protects two separate lines using only one package. These devices are ideal for situations where board space is at a premium.

Features and benefits

- . 2 Unidirectional transil functions
- . Reverse stand-off voltage: 5.0V Max
- . Low leakage current: nA Level
- . Response time is typically < 1 ns
- . ESD Protection: 15kV(air)/ 8kV(contact) (IEC61000-4-2)

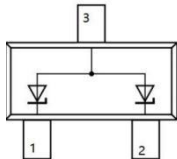
Application information

- . Computers
- . Printers
- . Communication systems
- . Cellular Handsets and Accessories
- . Portable Electronis
- . Industrial Controls
- . Set-Top Box

Ordering information

| Device | Package | Marking | Packaging |
|--------|---------|---------|------------------|
| SM05 | SOT23 | M05 | 3000/Tape & Reel |

Schematic & Pin configuration

| Simplified outline and symbol | Pinning |
|---|---|
|  | PIN1 cathode 1 PIN2 cathode 2 PIN3 common anode |

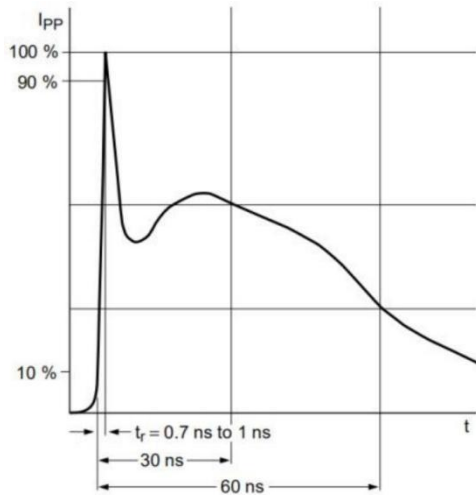
Maximum Ratings ($T_{OP} = 25 \text{ } ^\circ\text{C}$, unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--|-----------|-------------|------------------|
| Peak Pulse Power ($t_p = 8/20 \text{ } \mu\text{s}$) | P_{PPM} | 130 | W |
| Peak Pulse Current ($t_p = 8/20 \text{ } \mu\text{s}$) | I_{PPM} | 10 | A |
| Maximum lead temperature for soldering during 10s | T_L | 260 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | -55 to +150 | $^\circ\text{C}$ |
| Operating Temperature Range | T_{OP} | -40 to +125 | $^\circ\text{C}$ |
| Maximum junction temperature | T_j | 150 | $^\circ\text{C}$ |
| ESD voltage IEC 61000-4-2 (air discharge) | V_{ESD} | 15 | kV |
| ESD voltage IEC 61000-4-2 (contact discharge) | V_{ESD} | 8 | kV |

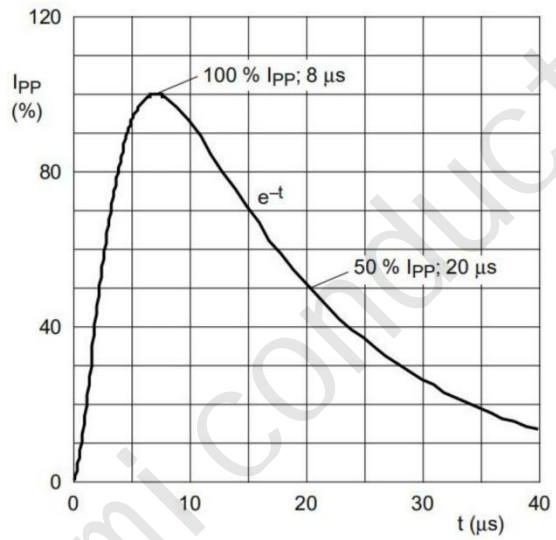
Electrical Characteristics ($T_{OP} = 25 \text{ } ^\circ\text{C}$, unless otherwise specified)

| Parameter | Symbol | Min | Typ | Max | Unit | Condition |
|----------------------------|-----------|-----|-----|------|------|--|
| Reverse Working Voltage | V_{RWM} | -- | -- | 5.0 | V | |
| Breakdown Voltage | V_{BR} | 6.2 | -- | 8.0 | V | $I_T=1\text{mA}$ |
| Leakage Current I_{Leak} | I_R | -- | -- | 100 | nA | $V_{RWM}=5\text{V}$ |
| Clamping Voltage | V_C | -- | -- | 13.0 | V | $I_{PP}=10\text{A}, T_p=8/20\mu\text{s}$ |
| Junction Capacitance | C_j | -- | 60 | 80 | pF | $V_R=0\text{V}, f=1\text{MHz}$ (Pin 1 or 2 to 3) |
| | | -- | 30 | 40 | pF | $V_R=0\text{V}, f=1\text{MHz}$ (Pin 1 to P2 and 2 to 1) |

Typical Characteristics



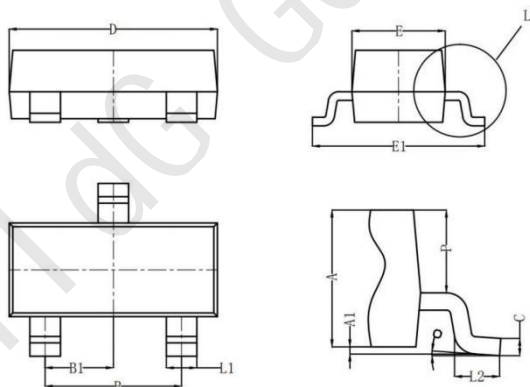
IEC61000-4-2 Waveform



IEC 61000-4-5 Waveform(8/20μs pulse)

Package Outline Dimensions

SOT23



| Symbol | Dimensions (mm) | | |
|--------|-----------------|-------|--------|
| | Min | Typ | Max |
| A | 0.900 | 1.000 | 1.1100 |
| A1 | 0.000 | 0.050 | 0.100 |
| L1 | 0.350 | 0.400 | 0.500 |
| C | 0.100 | 0.110 | 0.120 |
| D | 2.800 | 2.900 | 3.000 |
| E | 1.250 | 1.300 | 1.350 |
| E1 | 2.250 | 2.400 | 2.550 |
| B | 1.800 | 1.900 | 2.000 |
| B1 | 0.950 Typ | | |
| L2 | 0.200 | 0.350 | 0.450 |
| P | 0.550 | 0.575 | 0.600 |

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [ESD Suppressors / TVS Diodes](#) category:

Click to view products by [Wild Goose](#) manufacturer:

Other Similar products are found below :

[60KS200C](#) [D18V0L1B2LP-7B](#) [D5V0F4U5P5-7](#) [NTE4902](#) [P4KE27CA](#) [P6KE11CA](#) [P6KE8.2A](#) [SA60CA](#) [SA64CA](#) [SMBJ12CATR](#)
[SMBJ33CATR](#) [SMBJ6.5A](#) [SMBJ8.0A](#) [ESD101-B1-02ELS E6327](#) [ESD112-B1-02EL E6327](#) [ESD7451N2T5G](#) [19180-510](#) [CPDT-5V0USP-](#)
[HF](#) [3.0SMCJ33CA-F](#) [3.0SMCJ36A-F](#) [HSPC16701B02TP](#) [JANTX1N6126A](#) [D3V3Q1B2DLP3-7](#) [D55V0M1B2WS-7](#) [SCM1293A-04SO](#)
[ESD200-B1-CSP0201 E6327](#) [SM12-7](#) [CEN955 W/DATA](#) [VESD12A1A-HD1-GS08](#) [CPDQC5V0-HF](#) [D1213A-01LP4-7B](#) [ESD101-B1-02EL](#)
[E6327](#) [AOZ8808DI-03](#) [5KP15A](#) [5KP48A](#) [5KP90A](#) [ESD3V3D7-TP](#) [15KPA36A-LF](#) [P4KE56CA](#) [P4KE68A](#) [P4KE91CATR](#) [P6KE120A](#)
[P6KE13CA](#) [P6KE43CA](#) [P6KE6.8CA](#) [P6KE8.2](#) [P6SMBJ20CA](#) [JANTX1N6072A](#) [SR2835ESKG](#) [SA90CA](#)