

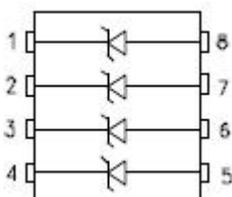
SMDB03 THRU SMDB36 TVS ARRAY SERIES



Description

The SMDBXX series of TVS array have been designed to provide unidirectional protection for sensitive electronics from damage due to voltage transients caused by electrostatic discharge (ESD), electrical fast transients (EFT), lightning and other voltage-induced transient events. The device can be used to protect combinations of four unidirectional lines.

Schematic & Pin Configuration



Features

- Protects 3.3, 5, 12, 15, 24, 36 V Components
- Unidirectional
- Provides Electrically Isolated Protection
- 500 W @ 8/20 us
- Protects 4 Lines
- SO-8 Packaging
- “-A” is an AEC-Q101 qualified device
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

Mechanical Characteristics

- SO-8 Surface Mount Package
- Approximate Weight: 0.1 grams
- PIN #1 Indicator: DOT on top of package
- Packaging: Tubes or Tape & Reel per EIA Standard 481

Application

- RS-232 data lines
- Microprocessor Based Equipment
- Notebooks, Desktops, & Servers
- LAN/WAN Equipment
- Serial and Parallel Port
- Peripherals

Absolute Maximum Ratings:

| Parameter | Symbol | Value | Units |
|---|------------------|---------------|-------|
| Peak Pulse Power, 8/20 μ s Wave shape | P | 500 | W |
| Operating Temperature | T _J | -55 to +125 | °C |
| Storage Temperature | T _{stg} | -55 to +150 | °C |
| Lead Soldering Temperature | T _L | 260 (10 Sec.) | °C |

Electrical Characteristics@25°C

| Part Number | Stand-off Voltage V_{wm} (V) Max | Breakdown Voltage V_{BR} @1mA (V) Min | Clamping Voltage V_c @ 1 A (V) Max | Leakage Current I_R @ V_{wm} (μ A) Max | Capacitance (f = 1MHz) C @ 0V (pF) Max | Temperature Coefficient of V_{BR} a(V_{BR}) mv/°C Max |
|-------------|---|---|--|---|---|---|
| SMDB03 | 3.3 | 4 | 7 | 200 | 800 | -3 |
| SMDB05 | 5.0 | 6 | 9.8 | 20 | 600 | 3 |
| SMDB12 | 12.0 | 13.3 | 19 | 1 | 185 | 10 |
| SMDB15 | 15.0 | 16.7 | 24 | 1 | 140 | 13 |
| SMDB24 | 24.0 | 26.7 | 43 | 1 | 90 | 30 |
| SMDB36 | 36.0 | 40 | 51 | 1 | 80 | - |

Ratings and Characteristics Curves

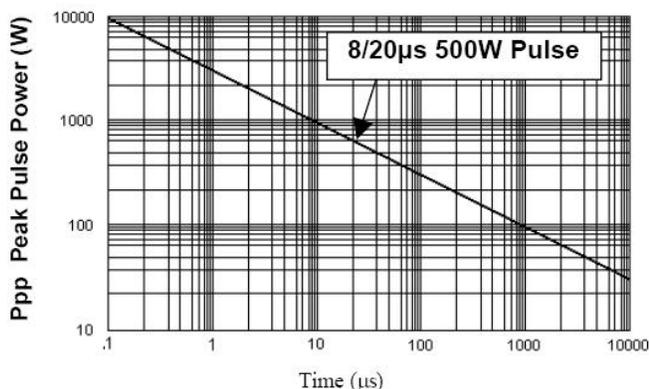


Figure 1. Peak Pulse Power Vs Pulse Time (μ s)

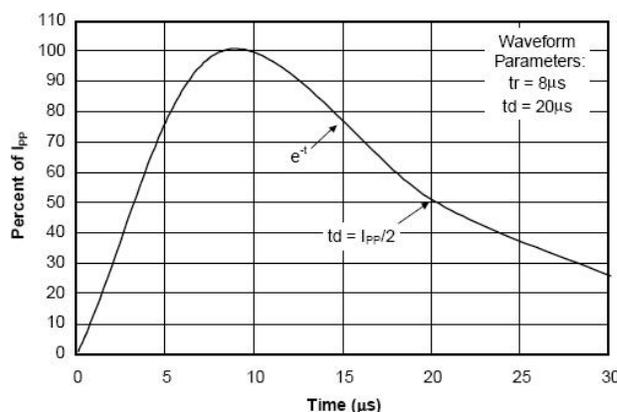


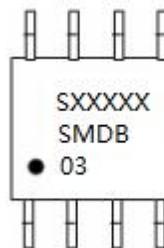
Figure 2. Pulse Wave Form

Ordering Information

| Device | Package | Shipping |
|------------------------------|-------------------|----------------|
| SMDB03 THRU SMDB36 | SO-8 (Pb-Free) | 2500pcs / reel |
| SMDB03TR THRU SMDB36TR | SO-8 (Pb-Free) | 2500pcs / reel |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Marking Diagram



Where XXXXX is YYWWL

SMDB03 = Part Number
S = S
YY = Year
WW = Week
L = Lot Number

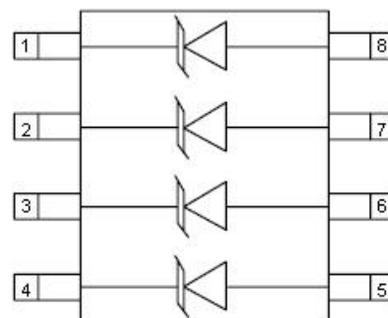
Cautions: Molding resin
Epoxy resin UL:94V-0

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - sales@smc-diodes.com •

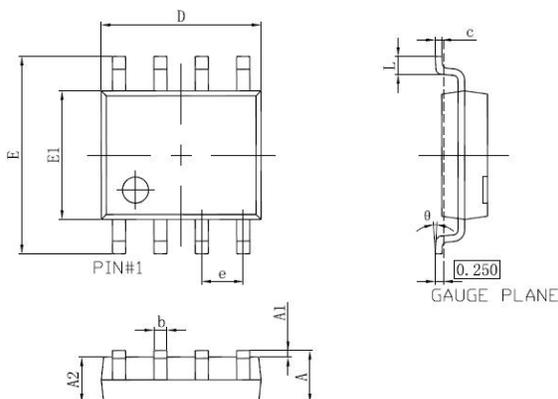
Circuit Diagram

The SMDBxx series of devices are designed to protect up to four data lines. The devices are connected as follows:

- ✓ The SMDBxx are unidirectional devices and are designed for use on line where the normal operating voltage is above ground. Pins 1, 2, 3, and 4 are connected to the protected lines. Pins 5, 6, 7, and 8 are connected to ground. The ground connections 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.

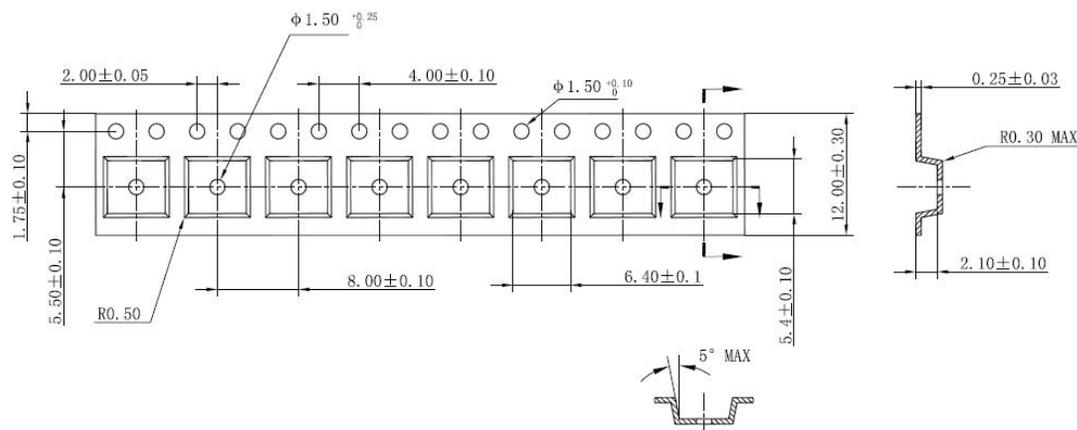


Mechanical Dimensions SO-8



| SYMBOL | Millimeters | | Inches | |
|--------|-------------|-------|--------|-------|
| | MIN. | MAX. | MIN. | MAX. |
| A | 1.350 | 1.800 | 0.053 | 0.071 |
| A1 | 0.100 | 0.250 | 0.004 | 0.010 |
| A2 | 1.350 | 1.750 | 0.053 | 0.069 |
| b | 0.306 | 0.510 | 0.012 | 0.020 |
| c | 0.150 | 0.300 | 0.006 | 0.012 |
| D | 4.720 | 5.120 | 0.186 | 0.202 |
| e | 1.140 | 1.400 | 0.045 | 0.055 |
| E | 5.700 | 6.300 | 0.224 | 0.248 |
| E1 | 3.750 | 4.150 | 0.148 | 0.163 |
| L | 0.300 | 1.270 | 0.012 | 0.050 |
| θ | 0° | 8° | 0° | 8° |

Carrier Tape Specification SO-8





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