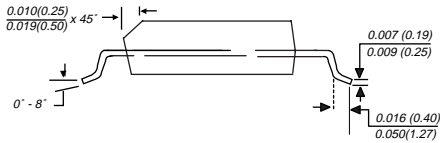
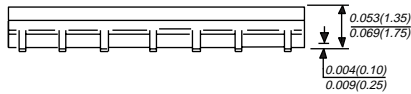
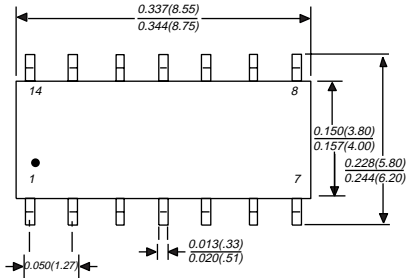


# SMDA05C-8 THRU SMDA24C-8

## SURFACE MOUNT DIODE ARRAY TRANSIENT VOLTAGE SUPPRESSOR

Stand-off Voltage - 5.0 to 24 Volts Peak Pulse Power - 300 Watts

### SO-14/MS-012-AB



Dimensions in inches and (millimeters)

### FEATURES

- ◆ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ◆ Offers ESD protection in accordance with IEC1000-4-2 (IEC801-2)
- ◆ Monolithic TVS junctions
- ◆ 300W peak pulse power surge capability
- ◆ Excellent clamping capability
- ◆ Protection of up to eight data lines
- ◆ Fast response time: typically less than 5.0ns from 0 volts to  $V_{(BR)}$
- ◆ High temperature soldering guaranteed: 265°C for 5 seconds at terminals



### MECHANICAL DATA

**Case:** JEDEC MS-012-AB molded plastic, over passivated junctions

**Terminal:** Plated, solderable per MIL-STD-750, Method 2026

**Polarity:** Bidirectional as marked

**Mounting Position:** Any

**Weight:** 0.07 ounce, 1.75 grams

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

| RATING  | SYMBOL         | VALUE                       | UNITS |
|---|----------------|-----------------------------|-------|
| Peak power dissipation with a 8.0/20μs waveform (NOTE 1, FIG 1) | PPPM           | Minimum 300                 | Watts |
| Peak power pulse current with a 8.0/20μs waveform (NOTE 1)      | IPPM           | 20.0<br>15.0<br>12.0<br>7.5 | Amps  |
| Operating junction and storage temperature range                | $T_J, T_{STG}$ | -50 to +125                 | °C    |

#### NOTES:

- (1) Non-repetitive current pulse, per Fig.3 and derated above  $T_A=25^\circ\text{C}$  per Fig. 2
- (2) Mounted on copper pad areas of 0.045 x 0.030" (1.14 x 0.76mm) per leg

### BIDIRECTIONAL APPLICATIONS

All electrical characteristics apply in both directions

## ELECTRICAL CHARACTERISTICS at 25°C

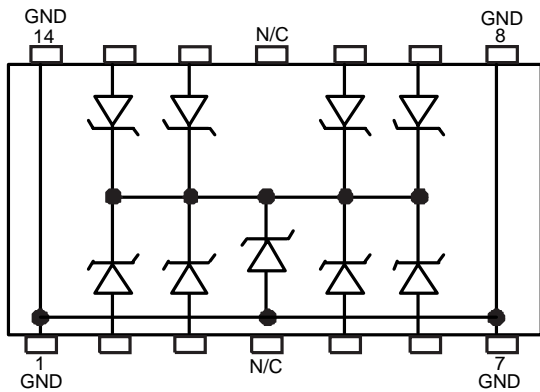
| PART NUMBER   | DEVICE MARKING CODE | STAND-OFF VOLTAGE | MINIMUM BREAKDOWN VOLTAGE at $I_T=1.0\text{mA}$ (NOTE 1) | MAXIMUM CLAMPING VOLTAGE at $I_{PP} = 1\text{A}$ | MAXIMUM CLAMPING VOLTAGE at $I_{PP} = 5\text{A}$ | MAXIMUM REVERSE LEAKAGE CURRENT at $V_{WM}$ | MAXIMUM JUNCTION CAPACITANCE (NOTE 3) |
|---------------|---------------------|-------------------|--|--|--|---|---------------------------------------|
| BIDIRECTIONAL |                     | $V_{WM}$<br>Volts | $V_{(BR)}$<br>Volts                                      | $V_C$ (NOTE 2)<br>Volts                          | $V_C$ (NOTE 2)<br>Volts                          | $I_D$<br>$\mu\text{A}$                      | $C_J$<br>pF                           |
| SMDA05C-8     | SEB                 | 5.0               | 6.0*   | 9.8  | 11.0   | 100.0                                       | 350                                   |
| SMDA12C-8     | SED                 | 12.0              | 13.4   | 19.0   | 24.0   | 1.0   | 150                                   |
| SMDA15C-8     | SEF                 | 15.0              | 16.7   | 24.0   | 30.0   | 1.0   | 120                                   |
| SMDA24C-8     | SEH                 | 24.0              | 26.7   | 43.0   | 55.0   | 1.0   | 100                                   |

**NOTES:**

- (1)  $V_{(BR)}$  measured at pulse width of 300 $\mu\text{s}$  sq. wave or equivalent
  - (2) Surge current waveform per Fig. 3 and derate per Fig. 2
  - (3) Junction capacitance measured at 1.0 MHz and applied  $V_R=0$  volts
- \*  $V_{(BR)}$  test current ( $I_T$ ) is 10 mA

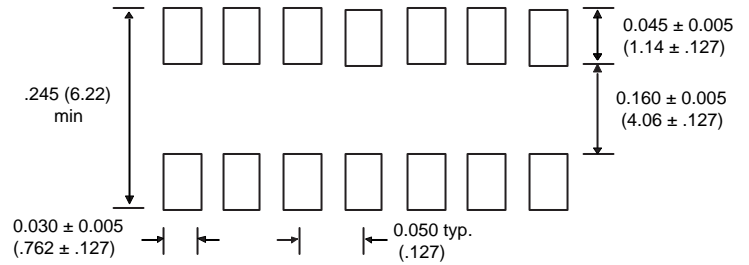
\*Application note: Due to the topology of the SMDA array the  $V_{RWM}$  and  $V_{(BR)}$  specifications also apply to the differential voltage between any two data line pins. Hence the SMDA12C-8 is designed to "see" a maximum voltage excursion of  $\pm 6$  volts between any two data lines.

**CIRCUIT DIAGRAM\* - top view**



\*SMDA05C-8 is common anode configuration

**SOLDER PAD GEOMETRY**



Dimensions in inches and (millimeters)

## RATING AND CHARACTERISTIC CURVES FOR SMDA05C-8 THRU SMDA24C-8

