

## Transient Voltage Suppressors Array for ESD Protection

### SMDAXXC-7 Series

#### Description

The SMDAXXC-7 is in an SO-08 package and may be used to protect two high-speed line pairs. The “flow-thru” design minimizes trace inductance and reduces voltage overshoot associated with ESD events. The low clamping voltage of the SMDAXXC-7 minimizes the stress on the protected IC.

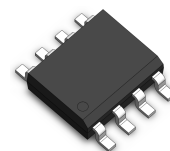
#### Feature

- u Protects Seven Data Lines
- u Working Voltage : 5V, 12V, 15V and 24V
- u Monolithic Design
- u RoHS Compliant
- u IEC61000-4-2 (ESD)  $\pm 30\text{kV}$  (air),  $\pm 30\text{kV}$  (contact)  
-5V, 12V, 15V
- u IEC61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact) - 24V
- u IEC61000-4-4 (EFT) 40A (5/50ns)
- u IEC61000-4-5 (Lightning) 12A (8/20 $\mu\text{s}$ )

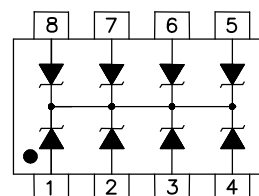
#### Applications

- u Microprocessor Based Equipment
- u RS-232 and RS-422 Data Lines
- u LAN/WAN Equipment
- u Notebooks, Desktops and Servers
- u Instrumentation
- u Set Top Box
- u Serial and Parallel Ports
- u Peripherals

SO-08



#### Functional Diagram



#### Mechanical Data

- u JEDEC SO-08 Package
- u Molding Compound Flammability Rating : UL 94V-0
- u Weight 70 Milligrams (Approximate)
- u Quantity Per Reel : 500pcs
- u Reel Size : 7 inch
- u Lead Finish : Lead Free

#### Mechanical Characteristics

| Symbol    | Parameter                                         | Value       | Units              |
|-----------|---------------------------------------------------|-------------|--------------------|
| $P_{PP}$  | Peak Pulse Power (tp=8/20 $\mu\text{s}$ waveform) | 300         | W                  |
| $T_L$     | Lead Soldering Temperature                        | 260 (10sec) | $^{\circ}\text{C}$ |
| $T_{STG}$ | Storage Temperature Range                         | -55 to +150 | $^{\circ}\text{C}$ |
| $T_J$     | Operating Temperature Range                       | -55 to +150 | $^{\circ}\text{C}$ |
|           | IEC61000-4-4 (EFT)                                | 40          | A                  |
|           | IEC61000-4-5 (Lightning)                          | 12          | A                  |

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Electrical Characteristics (@ 25 °C Unless Otherwise Specified )

| Part Number | Device Marking | $V_{RWM}$<br>(V)<br>(Max.) | $V_B$<br>(V)<br>(Min.) | $I_T$<br>(mA) | $V_C$<br>@5A<br>(Max.) | $V_C$  |      | $I_R$<br>( $\mu$ A)<br>(Max.) | $C$<br>(pF)<br>(Typ.) |
|-------------|----------------|----------------------------|------------------------|---------------|------------------------|--------|------|-------------------------------|-----------------------|
|             |                |                            |                        |               |                        | (Max.) | (@A) |                               |                       |
| SMDA05C-7   | SMDA<br>05C-7  | 5                          | 6                      | 1             | 9.8                    | 19     | 30   | 20                            | 350                   |
| SMDA12C-7   | SMDA<br>12C-7  | 12                         | 13.3                   | 1             | 19                     | 29.2   | 20   | 1                             | 120                   |
| S 15C-      | SMDA<br>15C-7  | 15                         | 16.7                   | 1             | 24                     | 31.1   | 18   | 1                             | 75                    |
| SMDA24C-7   | SMDA<br>24C-7  | 24                         | 26.7                   | 1             | 43                     | 45     | 13   | 1                             | 50                    |

### Characteristic Curves

Fig1. 8/20 $\mu$ s Pulse Waveform

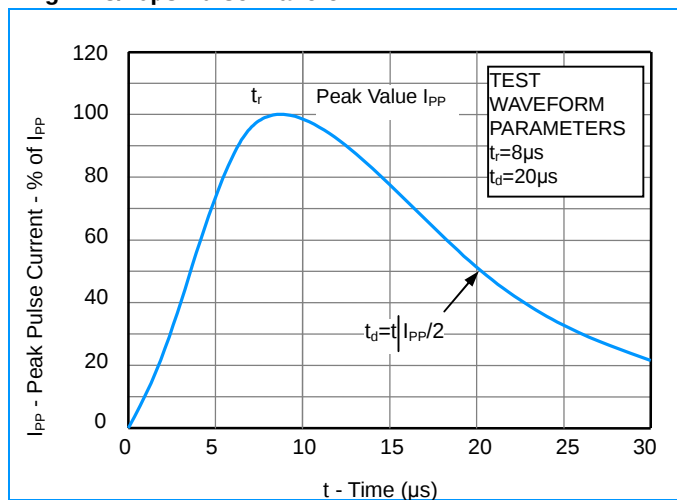


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

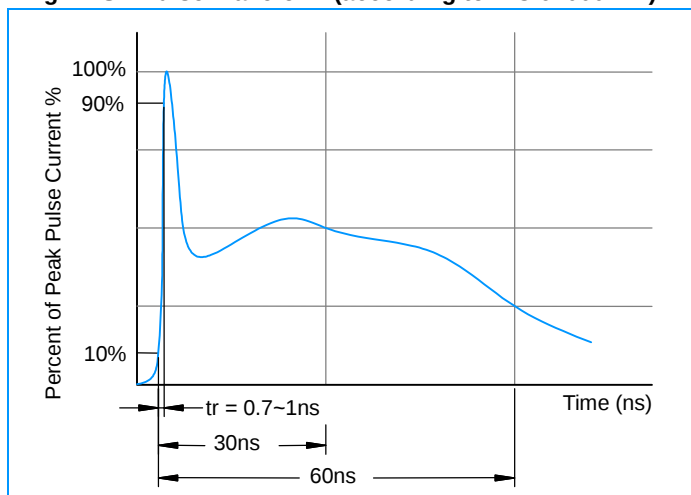
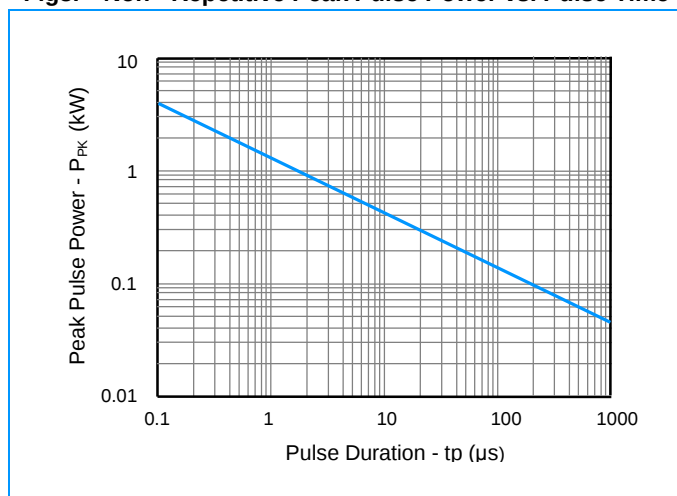


Fig3. Non - Repetitive Peak Pulse Power vs. Pulse Time



## Transient Voltage Suppressors Array for ESD Protection

### SMDAXXC-7 Series

#### Characteristic Curves

Fig4. ESD Clamping (+8KV Contac per IEC61000-4-2)

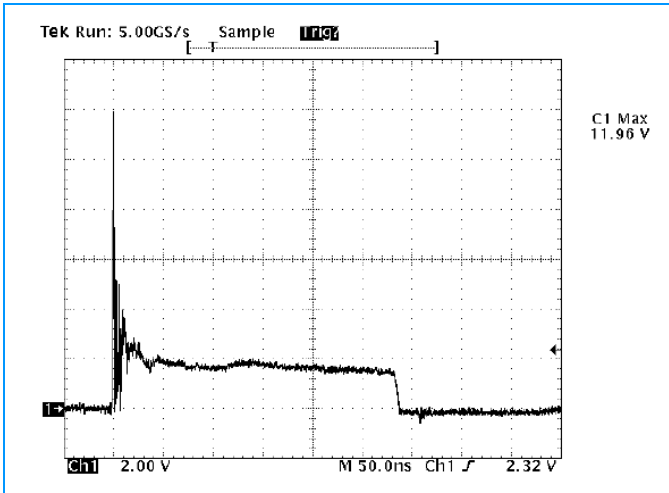
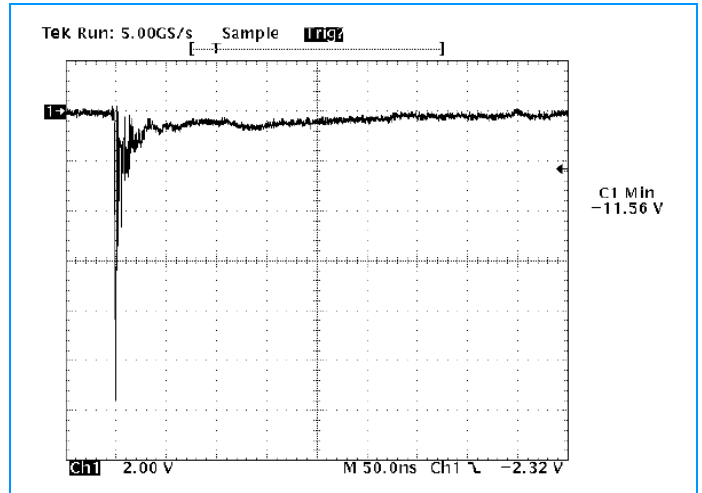
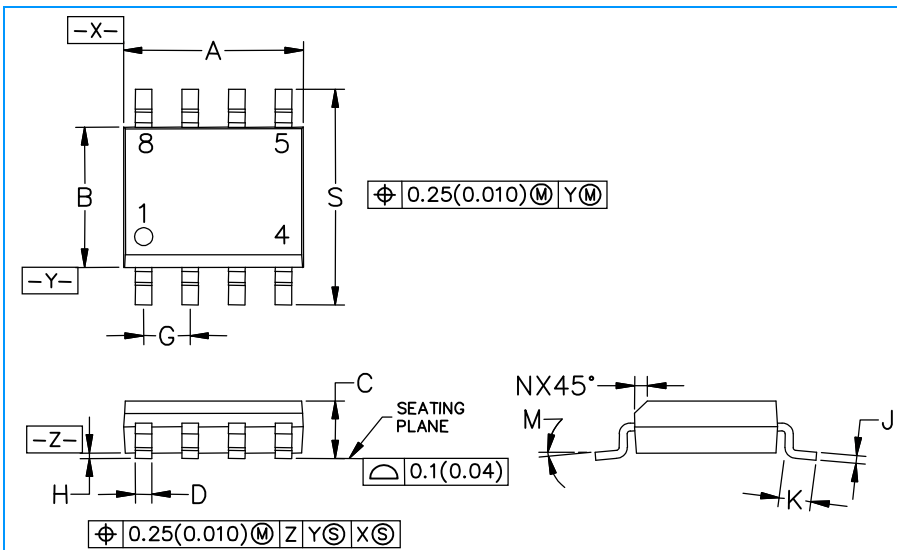


Fig5. ESD Clamping (-8KV Contac per IEC61000-4-2)



#### SO-8 Package Outline & Dimensions



| DIM | Millimeters |      | Inches   |       |
|-----|-------------|------|----------|-------|
|     | Min         | Max  | Min      | Max   |
| A   | 4.80        | 5.00 | 0.189    | 0.197 |
| B   | 3.80        | 4.00 | 0.150    | 0.157 |
| C   | 1.35        | 1.75 | 0.053    | 0.069 |
| D   | 0.35        | 0.51 | 0.013    | 0.020 |
| G   | 1.27BSC     |      | 0.050BSC |       |
| H   | 0.10        | 0.25 | 0.004    | 0.010 |
| J   | 0.19        | 0.25 | 0.007    | 0.010 |
| K   | 0.40        | 1.27 | 0.016    | 0.050 |
| M   | 0°          | 8°   | 0°       | 8°    |
| N   | 0.25        | 0.50 | 0.010    | 0.020 |
| S   | 5.80        | 6.20 | 0.228    | 0.244 |

#### Soldering Footprint

