

# Transient Voltage Suppressors Array for ESD Protection

Low capacitance

## LCDAXXC-8 Series

### Description

The LCDAXXC-8 has been specifically designed to protect sensitive components which are connected to data and transmission lines from over voltages caused by electrostatic discharge (ESD), electrical fast transients (EFT), and lightning.

The low capacitance array configuration of the LCDAXXC-8 allows the user to protect eight high-speed data or I/O lines. They may be used on systems operating from 5 to 24 Volts. The high surge capability (500W,  $t_p=8/20\mu s$ ) makes the LCDAXXC-8 suitable for telecommunications systems operating in harsh transient environments. The low inductance construction minimizes voltage overshoot during high current surges.

The features of the LCDAXXC-8 are ideal for protecting multi-protocol transceivers in WAN applications such as Frame Relay systems, routers, and switches.

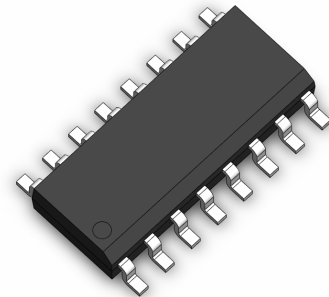
### Feature

- u 500 Watts Peak Pulse Power per Line ( $t_p=8/20\mu s$ )
- u Protects eight I/O lines
- u Low capacitance for high-speed data lines
- u RoHS Compliant
- u IEC61000-4-2 (ESD)  $\pm 15kV$  (air),  $\pm 8kV$  (contact)
- u IEC61000-4-4 (EFT) 40A (5/50ns)
- u IEC61000-4-5 (Lightning) 24A (8/20 $\mu s$ )

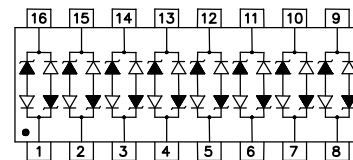
### Applications

- u High-Speed Data Lines
- u Microprocessor Based Equipment
- u Test & Measurement Equipment
- u Notebooks, Desktops, and Servers
- u Instrumentation
- u Audio/Video Inputs
- u LAN/WAN Equipment
- u Peripherals

SOP-16



### Functional Diagram



### Mechanical Characteristics

- u JEDEC SOP-16 Package
- u Molding Compound Flammability Rating : UL 94V-0
- u Weight 150.0 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 ( $t_p=8/20\mu s$ waveform) | 500         | W           |
| $T_L$     | Lead Soldering Temperature                   | 260 (10sec) | $^{\circ}C$ |
| $T_{STG}$ | Storage Temperature Range                    | -55 to +150 | $^{\circ}C$ |
| $T_J$     | Operating Temperature Range                  | -55 to +150 | $^{\circ}C$ |
|           | IEC61000-4-2 (ESD)                           |             |             |
|           | Air Discharge                                | $\pm 15$    | KV          |
|           | Contact Discharge                            | $\pm 8$     |             |
|           | IEC61000-4-4 (EFT)                           | 40          | A           |
|           | IEC61000-4-5 ( Lightning )                   | 24          | A           |

# Transient Voltage Suppressors Array for ESD Protection

Low capacitance

## LCDAXXC-8 Series

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) |                               |                       |
| LCDA05C-8   | LCDA05C-8      | 5.0                        | 6.0                    | 1             | 9.8                    | 13.5   | 42   | 20                            | 5                     |
| LCDA12C-8   | LCDA12C-8      | 12.0                       | 13.3                   | 1             | 19.0                   | 25.9   | 27   | 1                             | 5                     |
| LCDA15C-8   | LCDA15C-8      | 15.0                       | 16.7                   | 1             | 24.0                   | 30.0   | 17   | 1                             | 5                     |
| LCDA24C-8   | LCDA24C-8      | 24.0                       | 26.7                   | 1             | 43.0                   | 49.0   | 12   | 1                             | 5                     |

## Characteristic Curves

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

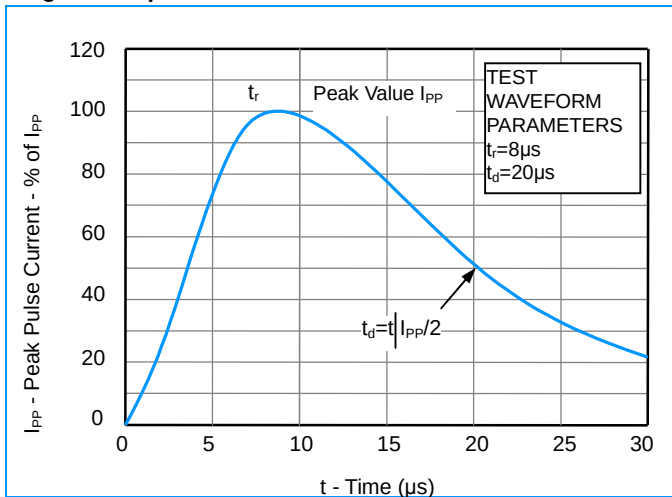


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

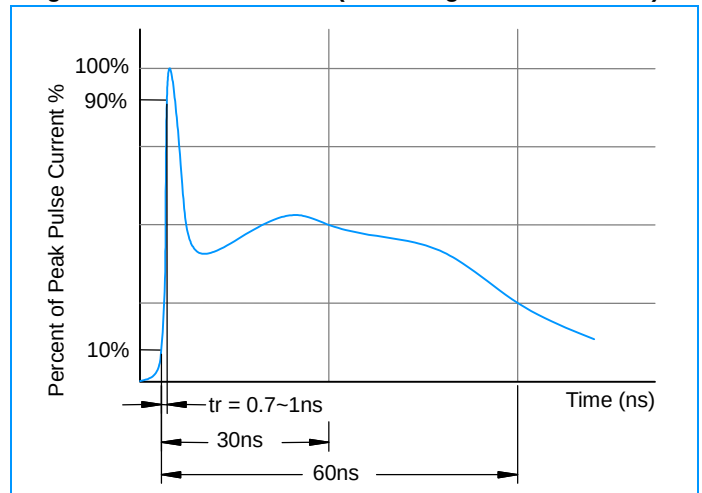
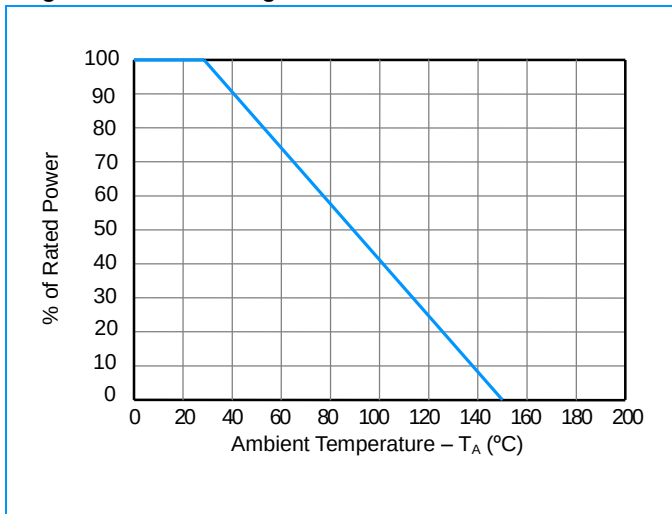


Fig3. Power Derating Curve



# Transient Voltage Suppressors Array for ESD Protection

Low capacitance

## LCDAXXC-8 Series

### Characteristic Curves

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

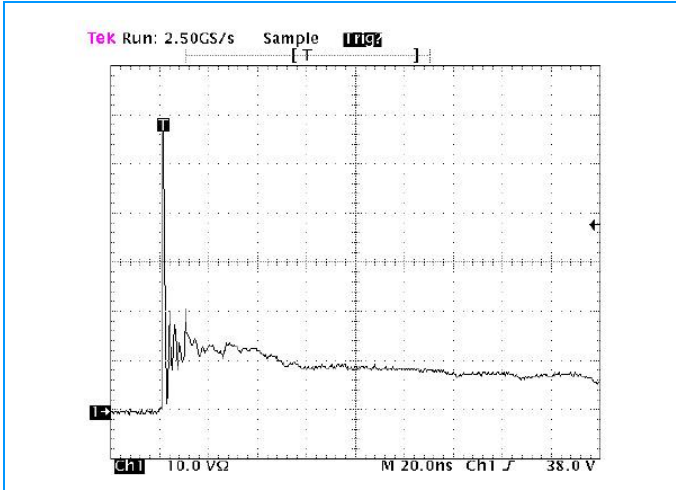
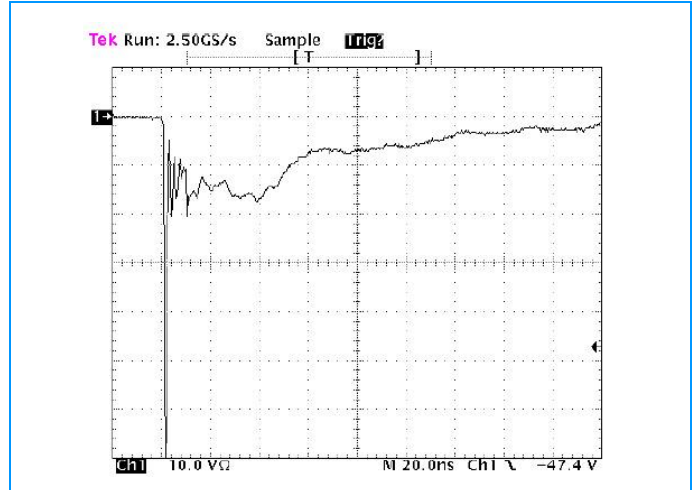
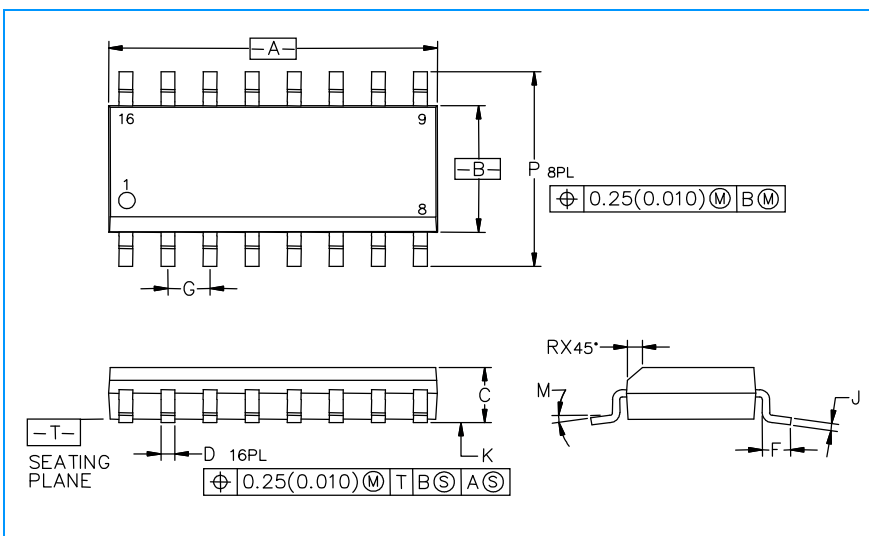


Fig5. ESD Clamping (-8KV Contac per IEC61000-4-2)

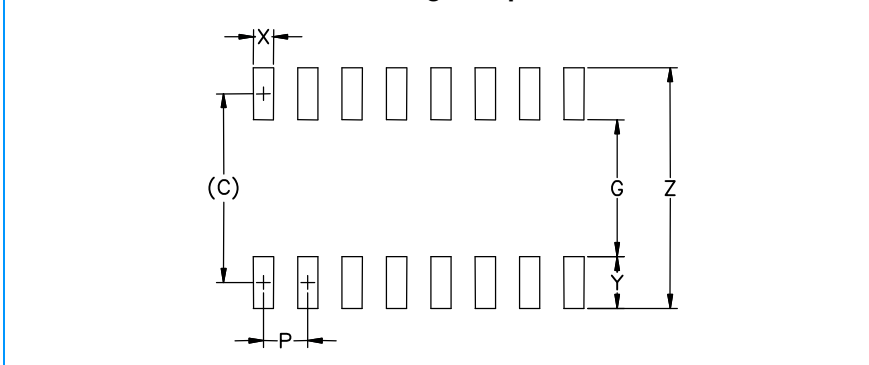


### SOP-16 Package Outline & Dimensions



| Symbol | Millimeters |      | Inches    |       |
|--------|-------------|------|-----------|-------|
|        | Min.        | Max. | Min.      | Max.  |
| A      | 9.80        | 10.0 | 0.386     | 0.393 |
| B      | 3.80        | 4.00 | 0.150     | 0.157 |
| C      | 1.35        | 1.75 | 0.054     | 0.068 |
| D      | 0.35        | 0.49 | 0.014     | 0.019 |
| F      | 0.40        | 1.25 | 0.016     | 0.049 |
| G      | 1.27 BSC    |      | 0.050 BSC |       |
| J      | 0.19        | 0.25 | 0.008     | 0.009 |
| K      | 0.10        | 0.25 | 0.004     | 0.009 |
| M      | 0°          | 7°   | 0°        | 7°    |
| P      | 5.80        | 6.20 | 0.228     | 0.244 |
| R      | 0.25        | 0.50 | 0.010     | 0.019 |

### Soldering Footprint



| Symbol | Inches  | Millimeters |
|--------|---------|-------------|
| C      | (0.205) | (5.20)      |
| G      | 0.118   | 3.00        |
| P      | 0.050   | 1.27        |
| X      | 0.024   | 0.60        |
| Y      | 0.087   | 2.20        |
| Z      | 0.291   | 7.40        |