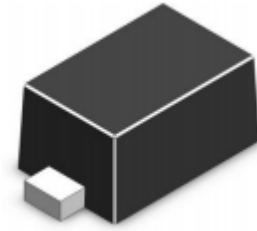


## Transient Voltage Suppressors for ESD Protection

### ESDXXV52D-A Series

#### Description

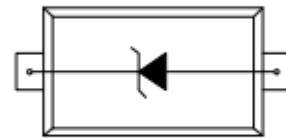
The ESDXXV52D-A Series is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.



#### Feature

- ◆ 165~265 Watts Peak Pulse Power per Line (tp=8/20μs)
- ◆ Protects one unidirectional I/O line
- ◆ Low clamping voltage
- ◆ Working voltages:3.3V ~ 36V
- ◆ Low leakage current
- ◆ IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact): 3.3V ~ 15V
- ◆ IEC61000-4-2 (ESD) ±15kV (air), ±10kV (contact):

#### Functional Diagram



#### Applications

- ◆ Cell Phone Handsets and Accessories
- ◆ Portable Electronics
- ◆ Industrial Controls
- ◆ Set-Top Box
- ◆ Instrumentation
- ◆ Servers, Notebook, and Desktop PC
- ◆ Display Ports

#### Mechanical Data

- ◆ SOD-523 Package
- ◆ Molding Compound Flammability Rating : UL 94V-0
- ◆ Weight 2 Milligrams (Approximate)
- ◆ Lead Finish : Lead Free

#### Mechanical Characteristics

| Symbol           | Parameter                             | Value         | Units |
|------------------|---------------------------------------|---------------|-------|
| Ppp              | Peak Pulse Power (tp=8/20μs waveform) | 165-265       | Watts |
| TL               | Lead Soldering Temperature            | 260 (10 sec.) | °C    |
| T <sub>STG</sub> | Storage Temperature Range             | -55 to +150   | °C    |
| T <sub>J</sub>   | Operating Junction Temperature Range  | -55 to +150   | °C    |

## Transient Voltage Suppressors for ESD Protection

### ESDXXV52D-A Series

#### Electrical Characteristics(@25°C Unless Otherwise Specified)

| Part Number  | Device Marking Code | Stand-Off Voltage $V_{RWM}$ (V) | Breakdown Voltage $V_{BR}$ (Min.) (V) | Test Current $I_T$ (mA) | $V_C$ @1A (Max.) | $V_C$  |      | Maximum Reverse Leakage $I_R$ @ $V_{RWM}$ ( $\mu$ A) | Typical Junction Capacitance (pF) |
|--------------|---------------------|---------------------------------|---------------------------------------|-------------------------|------------------|--------|------|--|-----------------------------------|
|              |                     |                                 |                                       |                         |                  | (Max.) | (@A) |  |                                   |
| ESD3.3V52D-A | ZD                  | 3.3                             | 4                                     | 1.0                     | 6.5              | 14     | 19   | 100  | 200                               |
| ESD05V52D-A  | KE                  | 5                               | 6                                     | 1.0                     | 9                | 16     | 12   | 1  | 110                               |
| ESD08V52D-A  | ZE                  | 8                               | 8.5                                   | 1.0                     | 13               | 20     | 10   | 1  | 70                                |
| ESD12V52D-A  | ZM                  | 12                              | 13.3                                  | 1.0                     | 16.5             | 28     | 6    | 1  | 60                                |
| ESD15V52D-A  | KP                  | 15                              | 16.6                                  | 1.0                     | 21               | 35     | 5    | 1  | 50                                |
| ESD18V52D-A  | KK                  | 18                              | 19                                    | 1.0                     | 26               | 37     | 4.5  | 1  | 30                                |
| ESD24V52D-A  | KR                  | 24                              | 26.7                                  | 1.0                     | 34.7             | 48     | 4    | 1  | 25                                |
| ESD36V52D-A  | KT                  | 36                              | 40                                    | 1.0                     | 62               | 75     | 3    | 1  | 25                                |

#### Characteristics Curves

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

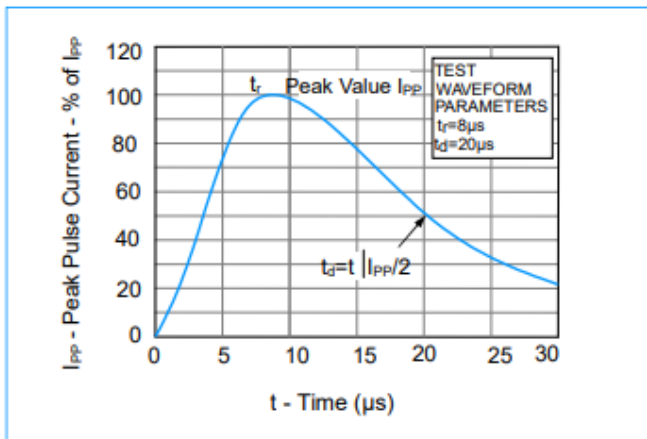


Fig2. Power Rating Derating Curve

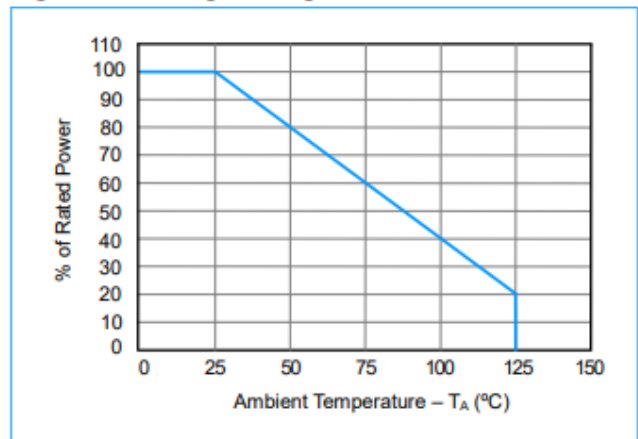
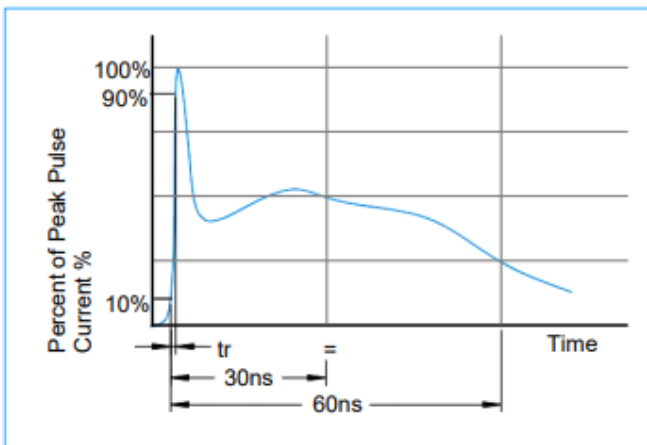


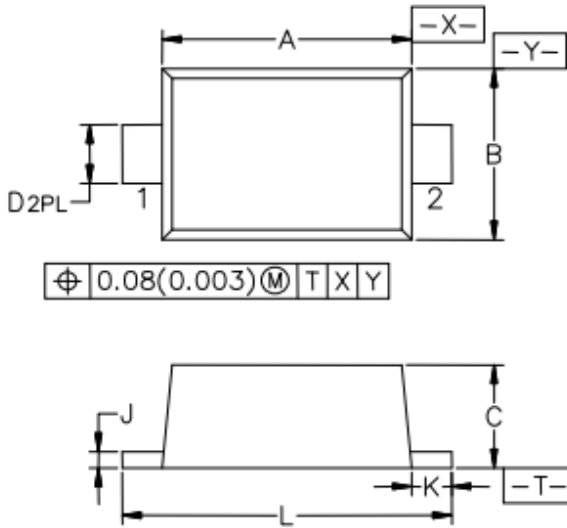
Fig3. ESD Pulse Waveform(according to IEC61000-4-2)



## Transient Voltage Suppressors for ESD Protection

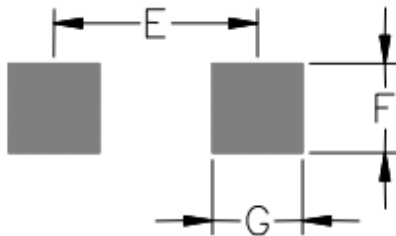
### ESDXXV52D-A Series

### SOD-523 Package Outline & Dimensions



| Symbol | Millimeters |      |      | Inches |        |        |
|--------|-------------|------|------|--------|--------|--------|
|        | Min.        | Nom. | Max. | Min.   | Nom.   | Max.   |
| A      | 1.10        | 1.20 | 1.30 | 0.043  | 0.047  | 0.051  |
| B      | 0.70        | 0.80 | 0.90 | 0.028  | 0.032  | 0.035  |
| C      | 0.50        | 0.60 | 0.70 | 0.020  | 0.024  | 0.028  |
| D      | 0.25        | 0.30 | 0.35 | 0.010  | 0.012  | 0.014  |
| J      | 0.07        | 0.14 | 0.20 | 0.0028 | 0.0055 | 0.0079 |
| K      | 0.15        | 0.20 | 0.25 | 0.006  | 0.008  | 0.010  |
| L      | 1.50        | 1.60 | 1.70 | 0.059  | 0.063  | 0.067  |

### Soldering Footprint



| Symbol | Millimeters | Inches |
|--------|-------------|--------|
| E      | 1.40        | 0.0547 |
| F      | 0.40        | 0.0157 |
| G      | 0.40        | 0.0157 |

### Ordering Information

| Device            | Marking | Package | Quantity      | Reel Size |
|-------------------|---------|---------|---------------|-----------|
| ESXXV52D-A Series | ---     | SOD-523 | 3,000pcs/Reel | 7 inch    |