

### Features

- ESD / transient protection of high speed data lines
  - IEC 61000-4-2 (ESD):  $\pm 20\text{kV}$  (air),  $\pm 15\text{kV}$  (contact)
- Low reverse stand-off voltage:  $3.3\text{V}$
- Very low leakage current
- Low diode capacitance
- Halogen free
- Qualified to AEC-Q101 standards for high reliability

HF



SOD-323

### Mechanical Data

- Case: SOD-323
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin-Plated Leads, Solderability-per MIL-STD-202, Method 208

### Ordering Information

| Part Number  | Package | Shipping Quantity      | Marking Code |
|--------------|---------|------------------------|--------------|
| TGESD3V3X1D3 | SOD-323 | 3000 pcs / Tape & Reel | 3XD          |

### Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter                                      | Symbol             | Value    | Unit |
|------------------------------------------------|--------------------|----------|------|
| IEC 61000-4-2; ESD (Air)                       | $V_{\text{ESD-A}}$ | $\pm 20$ | kV   |
| IEC 61000-4-2; ESD (Contact)                   | $V_{\text{ESD-C}}$ | $\pm 15$ | kV   |
| Peak Pulse Power ( $t_p = 8/20\mu\text{s}$ )   | $P_{\text{PP}}$    | 60       | W    |
| Peak Pulse Current ( $t_p = 8/20\mu\text{s}$ ) | $I_{\text{PP}}$    | 4        | A    |

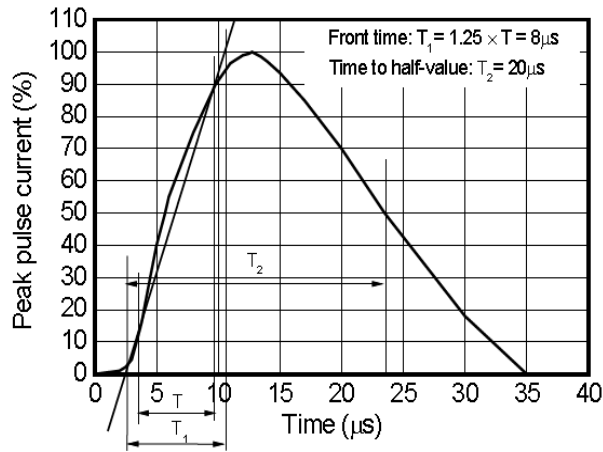
### Thermal Characteristics

| Parameter                 | Symbol           | Value           | Unit             |
|---------------------------|------------------|-----------------|------------------|
| Junction Temperature      | $T_J$            | $-55 \sim +125$ | $^\circ\text{C}$ |
| Storage Temperature Range | $T_{\text{STG}}$ | $-55 \sim +150$ | $^\circ\text{C}$ |

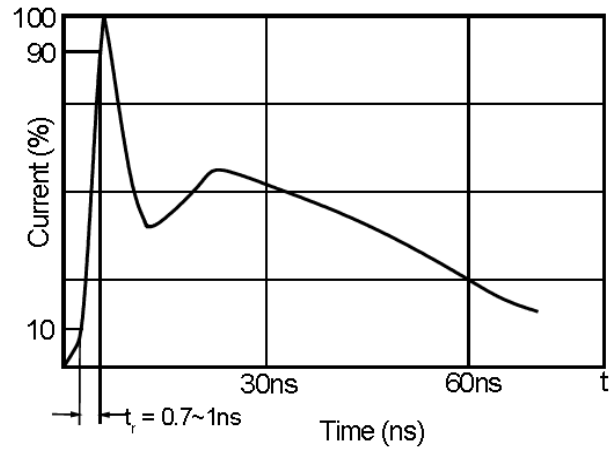
**Electrical Characteristics** (@  $T_A = 25^\circ\text{C}$  unless otherwise specified)

| Parameter                 | Symbol     | Test Condition                                 | Min. | Typ. | Max. | Unit          |
|---------------------------|------------|------------------------------------------------|------|------|------|---------------|
| Reverse Stand-off Voltage | $V_{RWM}$  |                                                | -    | -    | 3.3  | V             |
| Reverse Breakdown Voltage | $V_{(BR)}$ | $I_T = 1\text{mA}$                             | 4.2  | -    | 6    | V             |
| Reverse Leakage Current   | $I_R$      | $V_{RWM} = 3.3\text{V}$                        | -    | -    | 1    | $\mu\text{A}$ |
| Clamping Voltage          | $V_C$      | $I_{PP} = 1\text{A}$ , $t_p = 8/20\mu\text{s}$ | -    | -    | 10   | V             |
|                           |            | $I_{PP} = 4\text{A}$ , $t_p = 8/20\mu\text{s}$ | -    | -    | 15   | V             |
| Junction Capacitance      | $C_J$      | $V_R = 0\text{V}$ , $f = 1\text{MHz}$          | -    | 0.6  | 1.0  | pF            |

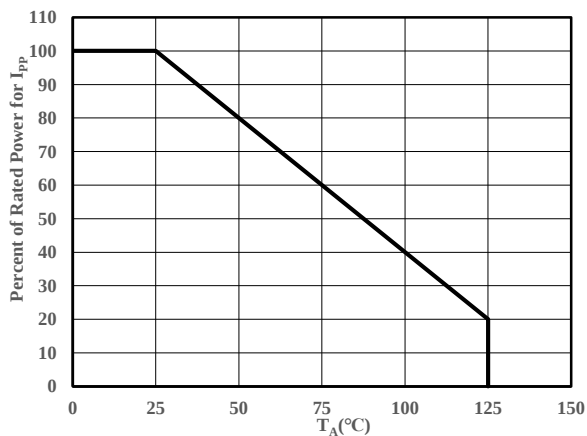
**Ratings and Characteristic Curves** (@  $T_A = 25^\circ\text{C}$  unless otherwise specified)



**Fig 1 8/20  $\mu\text{s}$  waveform per IEC61000-4-5**

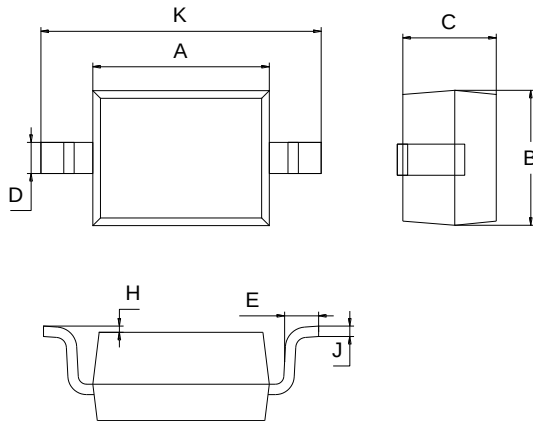


**Fig 2 ESD pulse waveform according to IEC61000-4-2**



**Fig 3 Power Derating Curve**

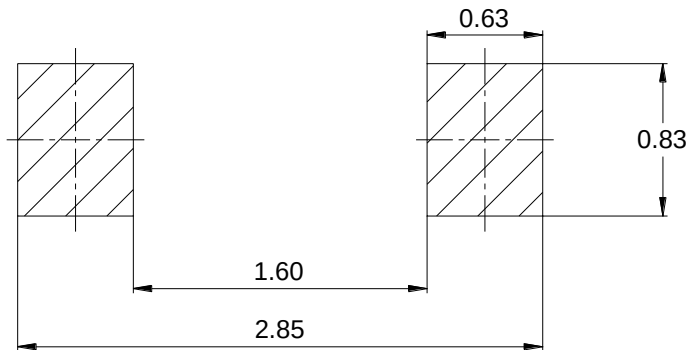
**Package Outline Dimensions** (Unit: mm)



| SOD-323   |      |      |
|-----------|------|------|
| Dimension | Min. | Max. |
| A         | 1.60 | 1.80 |
| B         | 1.20 | 1.40 |
| C         | 0.80 | 0.90 |
| D         | 0.25 | 0.35 |
| E         | 0.22 | 0.42 |
| H         | 0.02 | 0.10 |
| J         | 0.05 | 0.15 |
| K         | 2.55 | 2.75 |

**Package Outline Dimensions** (Unit: mm)

**SOD-323**



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