

**Features**

- Low Clamping Voltage
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

**Maximum Ratings**

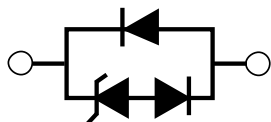
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C

| MCC Part Number | Device Marking |
|-----------------|----------------|
| ESDLC3V3D3      | 03             |
| ESDLC5V0D3      | 05             |
| ESDLC12VD3      | 12             |

|                           |                 |                |
|---------------------------|-----------------|----------------|
| IEC61000-4-2(ESD)         | Air Contact     | ±30KV<br>±30KV |
| Peak Pulse Power (8/20us) | P <sub>PK</sub> | 350W           |

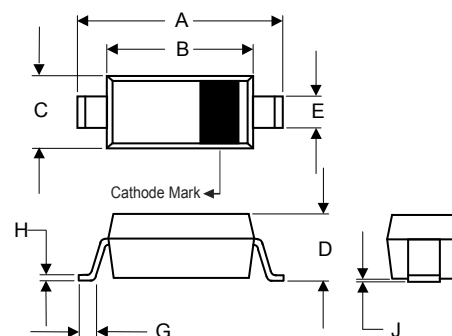
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

**Internal Structure**



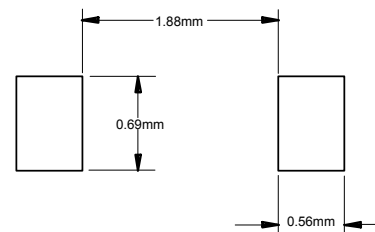
**ESD Protection Device**

**SOD-323**



| DIM | INCHES |       | MM   |      | NOTE |
|-----|--------|-------|------|------|------|
|     | MIN    | MAX   | MIN  | MAX  |      |
| A   | 0.090  | 0.107 | 2.30 | 2.70 |      |
| B   | 0.063  | 0.071 | 1.60 | 1.80 |      |
| C   | 0.045  | 0.053 | 1.15 | 1.35 |      |
| D   | 0.031  | 0.045 | 0.80 | 1.15 |      |
| E   | 0.010  | 0.016 | 0.25 | 0.40 |      |
| G   | 0.004  | 0.018 | 0.10 | 0.45 |      |
| H   | 0.004  | 0.010 | 0.10 | 0.25 |      |
| J   | ----   | 0.006 | ---- | 0.15 |      |

**Suggested Solder Pad Layout**



Electrical Characteristics @ 25°C (Unless Otherwise Specified)

ESDLC3V3D3

| Parameter                 | Symbol    | Conditions                      | Min. | Typ. | Max. | Units   |
|---------------------------|-----------|---------------------------------|------|------|------|---------|
| Reverse Working Voltage   | $V_{RWM}$ |                                 |      |      | 3.3  | V       |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T = 1mA$                     | 4    |      |      | V       |
| Reverse Leakage Current   | $I_R$     | $V_{RWM} = 3.3V$                |      |      | 20   | $\mu A$ |
| Peak Pulse Current        | $I_{PP}$  | $t_p = 8/20\mu s$               |      |      | 28   | A       |
| Clamping Voltage          | $V_C$     | $I_{PP} = 1A, t_p = 8/20\mu s$  |      |      | 7    | V       |
| Clamping Voltage          | $V_C$     | $I_{PP} = 28A, t_p = 8/20\mu s$ |      |      | 36   | V       |
| Junction Capacitance      | $C_J$     | $V_R = 0V, f = 1MHz$            |      | 4.5  |      | pF      |

ESDLC5V0D3

| Parameter                 | Symbol    | Conditions                      | Min. | Typ. | Max. | Units   |
|---------------------------|-----------|---------------------------------|------|------|------|---------|
| Reverse Working Voltage   | $V_{RWM}$ |                                 |      |      | 5    | V       |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T = 1mA$                     | 6    |      |      | V       |
| Reverse Leakage Current   | $I_R$     | $V_{RWM} = 5V$                  |      |      | 5    | $\mu A$ |
| Peak Pulse Current        | $I_{PP}$  | $t_p = 8/20\mu s$               |      |      | 21   | A       |
| Clamping Voltage          | $V_C$     | $I_{PP} = 1A, t_p = 8/20\mu s$  |      |      | 9.8  | V       |
| Clamping Voltage          | $V_C$     | $I_{PP} = 21A, t_p = 8/20\mu s$ |      |      | 32   | V       |
| Junction Capacitance      | $C_J$     | $V_R = 0V, f = 1MHz$            |      | 5    |      | pF      |

ESDLC12VD3

| Parameter                 | Symbol    | Conditions                      | Min. | Typ. | Max. | Units   |
|---------------------------|-----------|---------------------------------|------|------|------|---------|
| Reverse Working Voltage   | $V_{RWM}$ |                                 |      |      | 12   | V       |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T = 1mA$                     | 13.3 |      |      | V       |
| Reverse Leakage Current   | $I_R$     | $V_{RWM} = 12V$                 |      |      | 5    | $\mu A$ |
| Peak Pulse Current        | $I_{PP}$  | $t_p = 8/20\mu s$               |      |      | 11   | A       |
| Clamping Voltage          | $V_C$     | $I_{PP} = 1A, t_p = 8/20\mu s$  |      |      | 19   | V       |
| Clamping Voltage          | $V_C$     | $I_{PP} = 11A, t_p = 8/20\mu s$ |      |      | 28.6 | V       |
| Junction Capacitance      | $C_J$     | $V_R = 0V, f = 1MHz$            |      | 3    |      | pF      |

## Curve Characteristics

Fig. 1 - 8 X 20µs Pulse Waveform

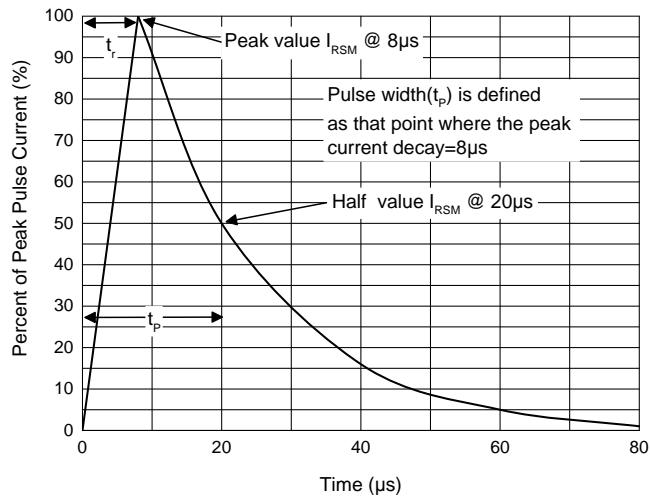
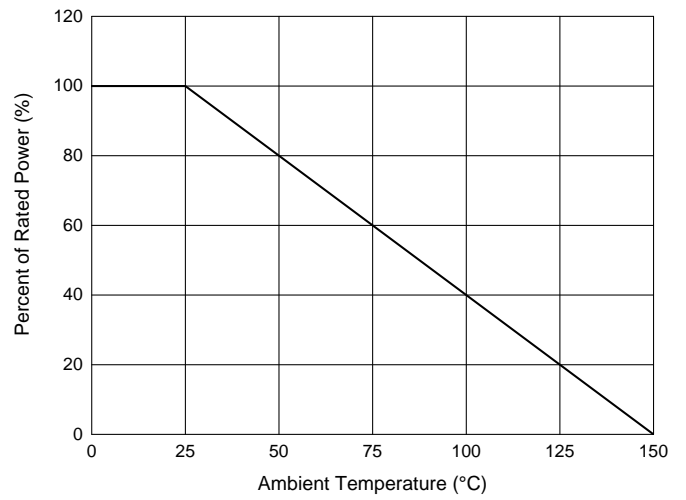


Fig. 2 - Pulse Derating Curve



## Ordering Information

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

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