

## Features

- AEC-Q101 Qualified
- SOT-23 Package Allows Either Two Separate Unidirectional Configurations or a Single Bidirectional Configuration
- Peak Power-40W@1.0ms(Unidirectional)
- Low Leakage
- 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)

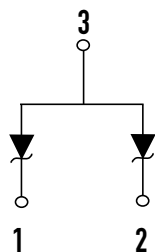
## Maximum Ratings

|                                        |         |                 |
|----------------------------------------|---------|-----------------|
| IEC61000-4-2(ESD)                      | Air     | ±30KV           |
|                                        | Contact | ±30KV           |
| Peak Pulse Power (10/1000μs)           | PPK     | 40W             |
| Power Dissipation                      | PD      | 225mW           |
| Thermal Resistance Junction to Ambient | RthJA   | 556°C/W         |
| Operating Junction Temperature Range   | TJ      | -55°C to +150°C |
| Storage Temperature Range              | TSTG    | -55°C to +150°C |

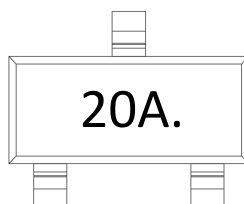
Note:

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

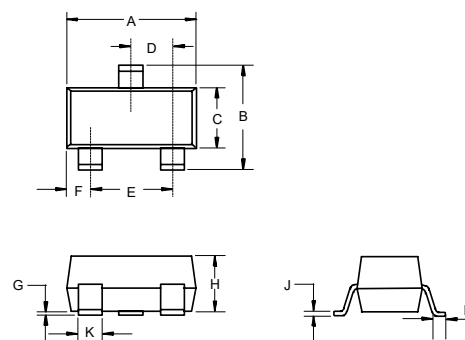


## Marking Code



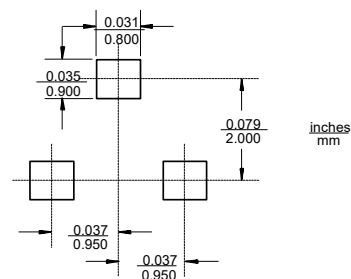
# ESD Protection Device

## SOT-23

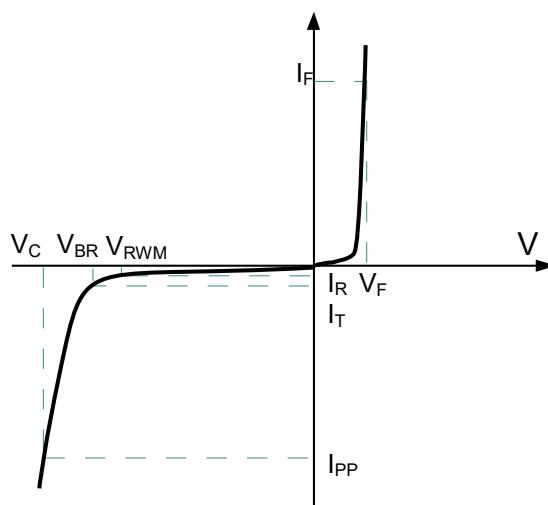


| DIMENSIONS |        |       |      |      |      |
|------------|--------|-------|------|------|------|
| DIM        | INCHES |       | MM   |      | NOTE |
|            | MIN    | MAX   | MIN  | MAX  |      |
| A          | 0.110  | 0.120 | 2.80 | 3.04 |      |
| B          | 0.083  | 0.104 | 2.10 | 2.64 |      |
| C          | 0.047  | 0.055 | 1.20 | 1.40 |      |
| D          | 0.034  | 0.041 | 0.85 | 1.05 |      |
| E          | 0.067  | 0.083 | 1.70 | 2.10 |      |
| F          | 0.018  | 0.024 | 0.45 | 0.60 |      |
| G          | 0.0004 | 0.006 | 0.01 | 0.15 |      |
| H          | 0.035  | 0.043 | 0.90 | 1.10 |      |
| J          | 0.003  | 0.007 | 0.08 | 0.18 |      |
| K          | 0.012  | 0.020 | 0.30 | 0.51 |      |
| L          | 0.007  | 0.020 | 0.20 | 0.50 |      |

## Suggested Solder Pad Layout



| Symbol | Parameter                          |
|--------|------------------------------------|
| VRWM   | Peak Reverse Working Voltage       |
| IR     | Reverse Leakage Current @ VRWM     |
| VBR    | Breakdown Voltage @ IT             |
| IT     | Test Current                       |
| IPP    | Maximum Reverse Peak Pulse Current |
| VC     | Clamping Voltage @ IPP             |
| PPP    | Peak Pulse Power                   |
| CJ     | Junction Capacitance               |
| IF     | Forward Current                    |
| VF     | Forward Voltage @ IF               |



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

| Parameter                 | Symbol    | Conditions                                          | Min. | Typ. | Max. | Units |
|---------------------------|-----------|-----------------------------------------------------|------|------|------|-------|
| Reverse Working Voltage   | $V_{RWM}$ |                                                     |      |      | 17   | V     |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T = 1\text{mA}$                                  | 19   | 20   | 21   | V     |
| Reverse Leakage Current   | $I_R$     | $V_{RWM} = 17\text{V}$                              |      |      | 50   | nA    |
| Forward Voltage           | $V_F$     | $I_F = 10\text{mA}$                                 |      |      | 0.9  | V     |
| Clamping Voltage          | $V_C$     | $I_{PP} = 1.4\text{A}$ , $t_p = 10/1000\mu\text{s}$ |      |      | 28   | V     |

## Curve Characteristics

Fig.1:  $P_D-T_A$

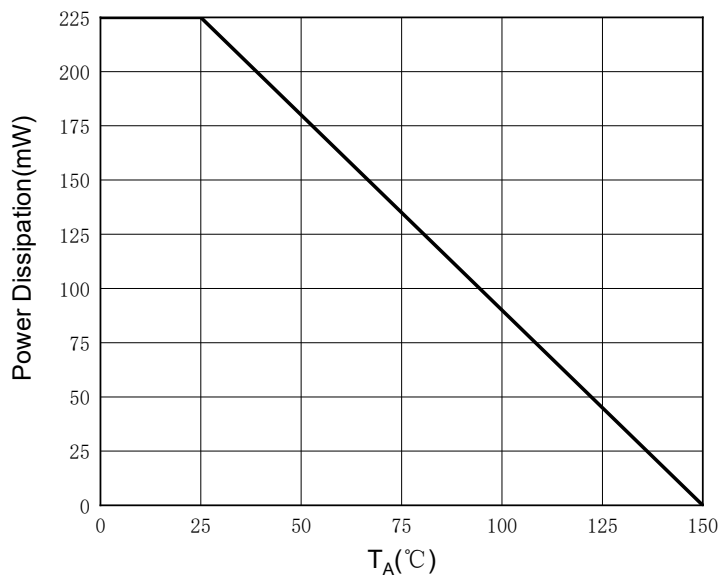


Fig.2: Typical Breakdown Voltage VS Temperature

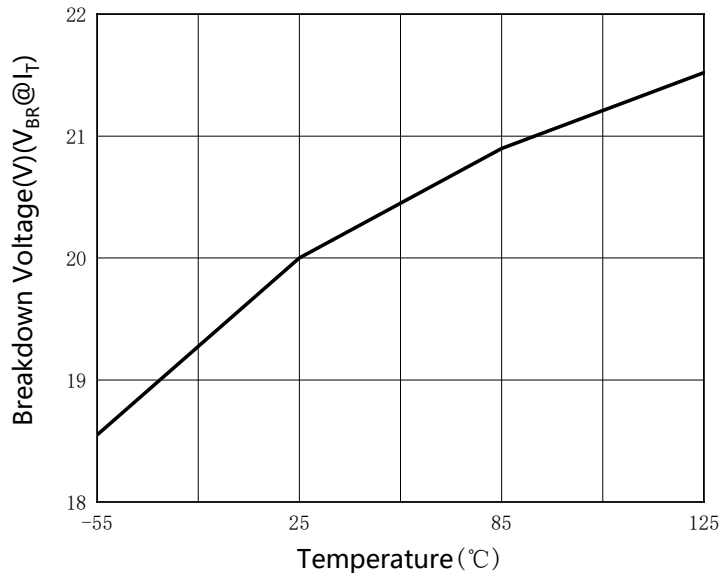


Fig.3: Reverse Characteristics

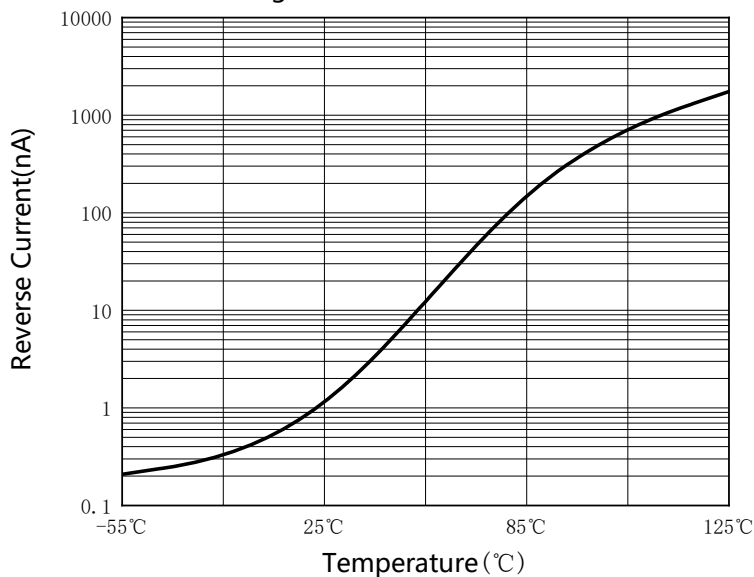


Fig.4 Pulse Waveform

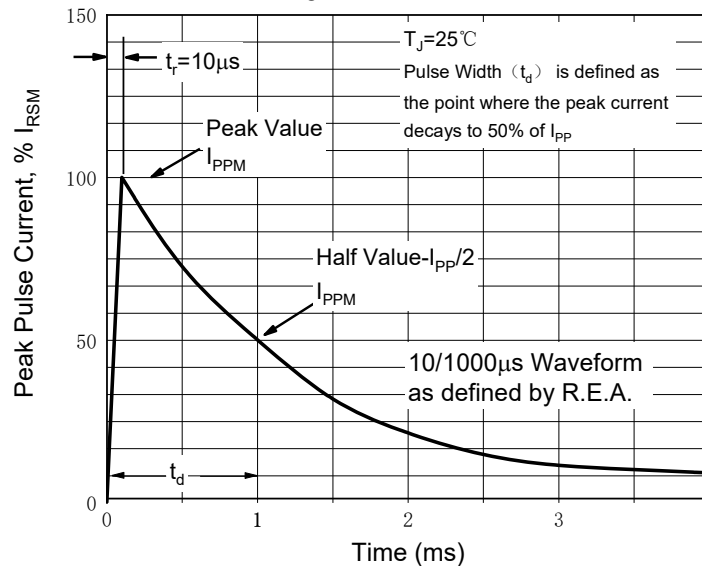


Fig.5: Power Derating Curve

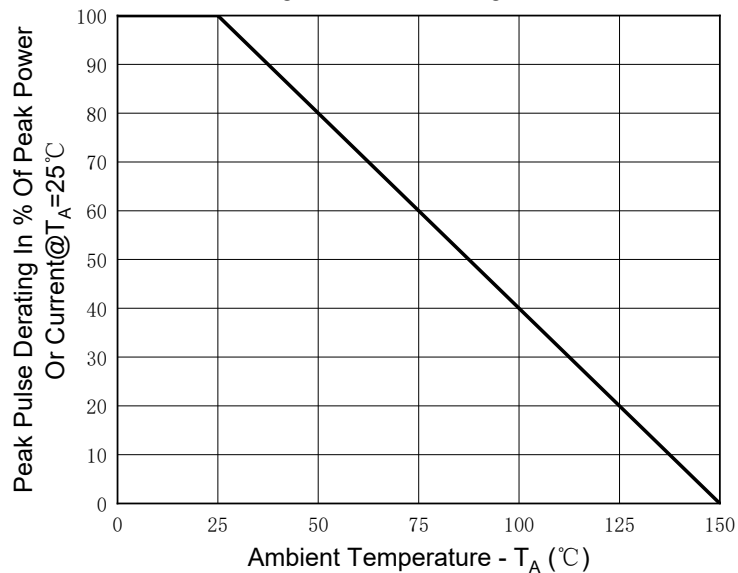
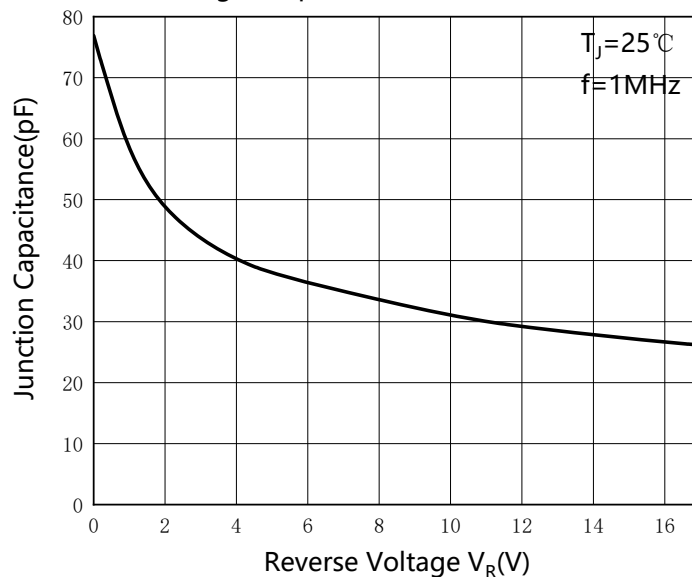


Fig.6: Capacitance Characteristics



## Ordering Information

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

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