



## SOD-123F TVS 瞬态电压抑制二极管

### ■ Features 特点

ESD 30KV Air, 30KV contact 静电释放电压 30KV 空气放电与 30KV 接触放电

Solid-state silicon avalanche technology 固态硅雪崩技术

Low leakage current 低漏电流

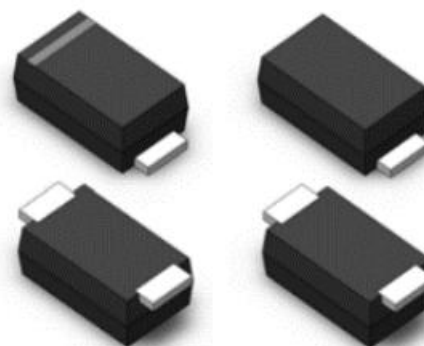
### ■ Applications 应用

Personal digital assistants (PDA) 个人数码助手

Handhelds and notebooks 手持式笔记本

Portable devices 桌面设备

Digital cameras 数码相机



### ■ Internal Schematic Diagram 内部结构



### ■ Absolute Maximum Ratings 最大额定值

| Characteristic<br>特性参数                        | Symbol<br>符号    | Rat<br>额定值 | Unit<br>单位    |
|---|-----------------|------------|---------------|
| Peak Power Dissipation<br>峰值功率                | $P_{PK}$        | 200        | W             |
| Reverse Stand-off Work Voltage<br>反向工作电压      | $V_{RWM}$       | 5.0~170    | V             |
| Peak Pulse Current<br>峰值脉冲电流                  | $I_{PP}$        | 21.7~0.73  | A             |
| Thermal Resistance Junction-Ambient<br>结到环境热阻 | $R_{\theta JA}$ | 125        | $^{\circ}C/W$ |
| Junction/Storage Temperature<br>结温/储存温度       | $T_J, T_{stg}$  | -55~150    | $^{\circ}C$   |

### ■ Electrical Characteristics 电特性

( $T_A=25^{\circ}C$  unless otherwise noted 如无特殊说明, 温度为  $25^{\circ}C$ )



# 安徽富信半导体科技有限公司

ANHUI FOSAN SEMICONDUCTOR TECHNOLOGY CO., LTD.

| Type Number | V <sub>RWM</sub> (V) | V <sub>BR</sub> (V)@I <sub>T</sub> |       | I <sub>T</sub> (mA) | V <sub>C</sub> (V) @I <sub>PP</sub> | I <sub>PP</sub> (A) | I <sub>R</sub> (μA) @V <sub>RWM</sub> | Marking |        |
|-------------|----------------------|------------------------------------|-------|---------------------|-------------------------------------|---------------------|---------------------------------------|---------|--------|
|             |                      | Min.                               | Max.  |                     |                                     |                     |                                       | A(UNI)  | CA(BI) |
| SMF5.0(C)A  | 5.0                  | 6.40                               | 7.25  | 10                  | 9.2                                 | 21.7                | 200                                   | AE      | WE     |
| SMF6.0(C)A  | 6.0                  | 6.67                               | 7.67  | 10                  | 10.3                                | 19.4                | 200                                   | AG      | WG     |
| SMF6.5(C)A  | 6.5                  | 7.22                               | 8.30  | 10                  | 11.2                                | 17.9                | 150                                   | AK      | WK     |
| SMF7.0(C)A  | 7.0                  | 7.78                               | 8.95  | 10                  | 12.0                                | 16.7                | 75                                    | AM      | WM     |
| SMF7.5(C)A  | 7.5                  | 8.33                               | 9.58  | 1                   | 12.9                                | 15.5                | 50                                    | AP      | WP     |
| SMF8.0(C)A  | 8.0                  | 8.89                               | 10.23 | 1                   | 13.6                                | 14.7                | 25                                    | AR      | WR     |
| SMF8.5(C)A  | 8.5                  | 9.44                               | 10.82 | 1                   | 14.4                                | 13.9                | 20                                    | AT      | WT     |
| SMF9.0(C)A  | 9.0                  | 10.0                               | 11.50 | 1                   | 15.4                                | 13.0                | 10                                    | AV      | WV     |
| SMF10(C)A   | 10                   | 11.1                               | 12.80 | 1                   | 17.0                                | 11.8                | 5                                     | AX      | WX     |
| SMF11(C)A   | 11                   | 12.2                               | 14.00 | 1                   | 18.2                                | 11.0                | 1                                     | AZ      | WZ     |
| SMF12(C)A   | 12                   | 13.3                               | 15.30 | 1                   | 19.9                                | 10.1                | 1                                     | BE      | XE     |
| SMF13(C)A   | 13                   | 14.4                               | 15.60 | 1                   | 21.5                                | 9.3                 | 1                                     | BG      | XG     |
| SMF14(C)A   | 14                   | 15.6                               | 17.90 | 1                   | 23.2                                | 8.62                | 1                                     | BK      | XK     |
| SMF15(C)A   | 15                   | 16.7                               | 19.20 | 1                   | 24.4                                | 8.2                 | 1                                     | BM      | XM     |
| SMF16(C)A   | 16                   | 17.8                               | 20.50 | 1                   | 26.0                                | 7.69                | 1                                     | BP      | XP     |
| SMF17(C)A   | 17                   | 18.9                               | 21.70 | 1                   | 27.6                                | 7.25                | 1                                     | BR      | XR     |
| SMF18(C)A   | 18                   | 20.0                               | 23.30 | 1                   | 29.2                                | 6.85                | 1                                     | BT      | XT     |
| SMF20(C)A   | 20                   | 22.2                               | 25.50 | 1                   | 32.4                                | 6.17                | 1                                     | BV      | XV     |
| SMF22(C)A   | 22                   | 24.4                               | 28.00 | 1                   | 35.5                                | 5.63                | 1                                     | BX      | XX     |
| SMF24(C)A   | 24                   | 26.7                               | 30.70 | 1                   | 38.9                                | 5.14                | 1                                     | BZ      | XZ     |
| SMF26(C)A   | 26                   | 28.9                               | 33.20 | 1                   | 42.1                                | 4.75                | 1                                     | CE      | YE     |
| SMF28(C)A   | 28                   | 31.1                               | 35.80 | 1                   | 45.4                                | 4.41                | 1                                     | CG      | YG     |
| SMF30(C)A   | 30                   | 33.3                               | 38.30 | 1                   | 48.4                                | 4.13                | 1                                     | CK      | YK     |
| SMF33(C)A   | 33                   | 36.7                               | 42.20 | 1                   | 53.3                                | 3.75                | 1                                     | CM      | YM     |
| SMF36(C)A   | 36                   | 40.0                               | 46.00 | 1                   | 58.1                                | 3.44                | 1                                     | CP      | YP     |
| SMF40(C)A   | 40                   | 44.4                               | 51.10 | 1                   | 64.5                                | 3.1                 | 1                                     | CR      | YR     |
| SMF43(C)A   | 43                   | 47.8                               | 54.90 | 1                   | 69.4                                | 2.88                | 1                                     | CT      | YT     |
| SMF45(C)A   | 45                   | 50.0                               | 57.50 | 1                   | 72.7                                | 2.75                | 1                                     | CV      | YV     |
| SMF48(C)A   | 48                   | 53.3                               | 61.30 | 1                   | 77.4                                | 2.58                | 1                                     | CX      | YX     |
| SMF51(C)A   | 51                   | 56.7                               | 65.20 | 1                   | 82.4                                | 2.43                | 1                                     | CZ      | YZ     |
| SMF54(C)A   | 54                   | 60.0                               | 69.00 | 1                   | 87.1                                | 2.3                 | 1                                     | RE      | ZE     |
| SMF58(C)A   | 58                   | 64.4                               | 74.10 | 1                   | 93.6                                | 2.14                | 1                                     | RG      | ZG     |
| SMF60(C)A   | 60                   | 66.7                               | 76.70 | 1                   | 96.8                                | 2.07                | 1                                     | RK      | ZK     |
| SMF64(C)A   | 64                   | 71.1                               | 81.80 | 1                   | 103                                 | 1.94                | 1                                     | RM      | ZM     |
| SMF70(C)A   | 70                   | 77.8                               | 89.50 | 1                   | 113                                 | 1.77                | 1                                     | RP      | ZP     |
| SMF75(C)A   | 75                   | 83.3                               | 95.80 | 1                   | 121                                 | 1.65                | 1                                     | RR      | ZR     |
| SMF78(C)A   | 78                   | 86.7                               | 99.70 | 1                   | 126                                 | 1.59                | 1                                     | RT      | ZT     |
| SMF85(C)A   | 85                   | 94.4                               | 108.2 | 1                   | 137                                 | 1.46                | 1                                     | RV      | ZV     |
| SMF90(C)A   | 90                   | 100                                | 115.5 | 1                   | 146                                 | 1.37                | 1                                     | RX      | ZX     |
| SMF100(C)A  | 100                  | 111                                | 128.0 | 1                   | 162                                 | 1.23                | 1                                     | RZ      | ZZ     |
| SMF110(C)A  | 110                  | 122                                | 140.5 | 1                   | 177                                 | 1.13                | 1                                     | SE      | VE     |
| SMF120(C)A  | 120                  | 133                                | 153.0 | 1                   | 193                                 | 1.04                | 1                                     | SG      | VG     |
| SMF130(C)A  | 130                  | 144                                | 165.5 | 1                   | 209                                 | 0.96                | 1                                     | SK      | VK     |
| SMF150(C)A  | 150                  | 167                                | 192.5 | 1                   | 243                                 | 0.82                | 1                                     | SM      | VM     |
| SMF160(C)A  | 160                  | 178                                | 205.0 | 1                   | 259                                 | 0.77                | 1                                     | SP      | VP     |
| SMF170(C)A  | 170                  | 189                                | 217.5 | 1                   | 275                                 | 0.73                | 1                                     | SR      | VR     |

## ■ Typical Characteristic Curve 典型特性曲线

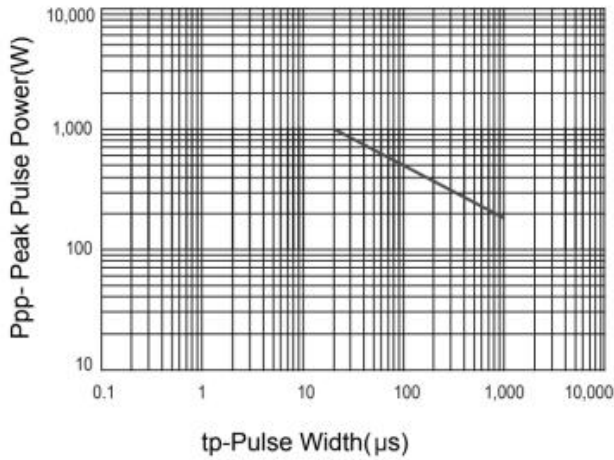


Figure 1. Peak Pulse Power Rating Curve



Figure 2. 10/1000 us Pulse Waveform

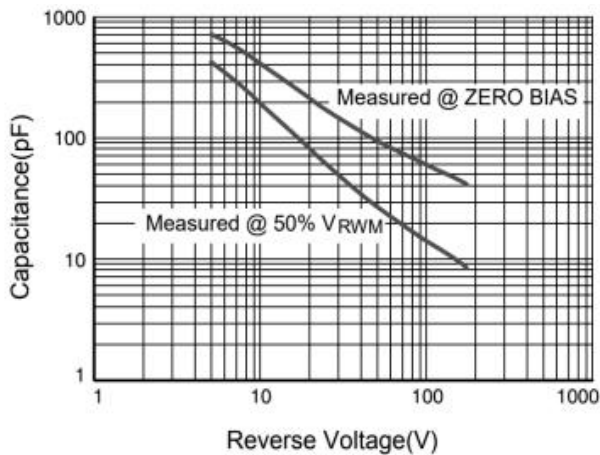


Figure 3. Capacitance vs. Reverse Voltage



Figure 4. Power Derating curve

## ■Dimension 外形封装尺寸



| Dimensions | Millimeters |      | Inches |        |
|------------|-------------|------|--------|--------|
|            | Min         | Max  | Min    | Max    |
| A          | 2.5         | 3.05 | 0.0984 | 0.1201 |
| B          | 3.35        | 4.05 | 0.1319 | 0.1594 |
| C          | 0.7         | 1.2  | 0.0275 | 0.0472 |
| D          | 1.5         | 2    | 0.0591 | 0.0787 |
| E          | 0.35        | 0.95 | 0.0138 | 0.0374 |
| F          | 0.05        | 0.26 | 0.002  | 0.0102 |
| G          | 0           | 0.2  | 0      | 0.0079 |
| H          | 0.70        | 1.35 | 0.0276 | 0.0531 |

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