



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 特性参数 | Symbol 符号 | Rat 额定值 | Unit 单位 |
|---|-----------------|------------|---------------|
| Peak Power Dissipation 峰值功率 | P_{PK} | 200 | W |
| Reverse Stand-off Work Voltage 反向工作电压 | V_{RWM} | 5.0~170 | V |
| Peak Pulse Current 峰值脉冲电流 | I_{PP} | 21.7~0.73 | A |
| Thermal Resistance Junction-Ambient 结到环境热阻 | $R_{\theta JA}$ | 125 | $^{\circ}C/W$ |
| Junction/Storage Temperature 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 $25^{\circ}C$)



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| Type Number | V _{RWM} (V) | V _{BR} (V)@I _T | | I _T (mA) | V _C (V) @I _{PP} | I _{PP} (A) | I _R (μA) @V _{RWM} | 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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