



瞬变电压抑制二极管 Transient Voltage Suppressor Diodes

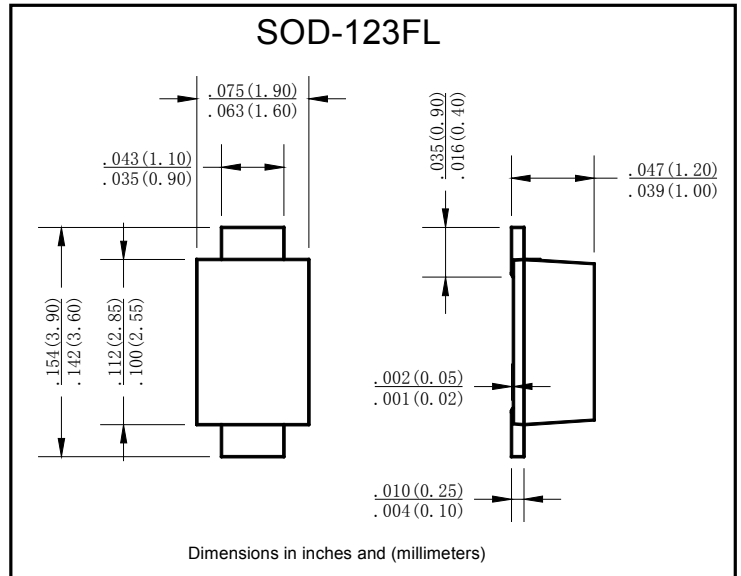
■特征 Features

- P_{PP} 200W (SMF5.0A~ SMF58A)
175W (SMF60A~ SMF170A)
- V_{BR} 6.7V-170.0V

■用途 Applications

- 箝位电压用 Clamping Voltage

■外形尺寸和印记 Outline Dimensions and Mark



■极限值（绝对最大额定值）

Limiting Values (Absolute Maximum Rating)

| 参数名称 Item | 符号 Symbol | 单位 Unit | 条件 Conditions | 最大值 Max |
|--|-----------------|---------------|--|-------------------------|
| 最大损耗功率 Peak power dissipation | P_{PPM} | W | 在10/1000us 波形下测试 with a 10/1000us waveform (SMF5.0A~ SMF58A) | 200 |
| | | | 在10/1000us 波形下测试 with a 10/1000us waveform (SMF60A~ SMF170A) | 175 |
| 最大脉冲电流(1) Peak pulse current | I_{PPM} | A | 在10/1000us 波形下测试 with a 10/1000us waveform | 见下面表格 See Next Table |
| 工作结温和存储温度范围 Operating junction and storage temperature range | T_J, T_{STG} | $^{\circ}C$ | | -55 to +150 |
| 典型热阻 Thermal resistance | $R_{\theta JL}$ | $^{\circ}C/W$ | 结和引线之间 Between junction and lead | 26 |
| | $R_{\theta JA}$ | $^{\circ}C/W$ | 结和环境之间 Between junction and Ambient | 300 |

备注: Notes:

- (1) 不重复脉冲电流, 在 $T_A=25^{\circ}C$, 如图2
Non-repetitive current pulse at $T_A=25^{\circ}C$, per waveform of Figure 2.
- (2) $T_L=30^{\circ}C$ 除非另有规定, $V_F \leq 1.25\text{Volts}@200\text{mA}$
 $T_L=30^{\circ}C$ unless otherwise noted, $V_F \leq 1.25\text{Volts}@200\text{mA}$

■ 电性参数 ($T_A=25^\circ\text{C}$ 除非另有规定)

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

| 产品型号 Part Number | | 标识代码 Marking | | 击穿电压 $V_{BR@I_T}$ Breakdown Voltage $V_{BR@I_T}$ | | | 最大反向漏电流 $I_R@V_{RWM}$ Maximum Reverse Leakage $I_R^{(3)}$ (μA) | 最大工作电压 V_{RWM} Working Peak Reverse Voltage V_{RWM} (V) | 最大反向浪涌电流 IPP Maximum Reverse Surge Current IPP ⁽²⁾ (A) | 最大箝位电压 Maximum Clamping Voltage V_c @ I_{PP} (V) |
|---------------------|------------|-----------------|------------|---|---------------|--------------------------|---|--|---|---|
| 单向 (Uni) | 双向 (Bi) | 单向 (Uni) | 双向 (Bi) | 最小 Min(V) | 最大 Max (V) | 测试电流 $I_T^{(1)}$ (mA) | | | | |
| SMF5.0A | SMF5.0CA | 5.0A | 5.0CA | 6.40 | 7.07 | 10.0 | 50.0 | 5.0 | 21.7 | 9.2 |
| SMF6.0A | SMF6.0CA | 6.0A | 6.0CA | 6.67 | 7.37 | 10.0 | 20.0 | 6.0 | 19.4 | 10.3 |
| SMF6.5A | SMF6.5CA | 6.5A | 6.5CA | 7.22 | 7.98 | 10.0 | 20.0 | 6.5 | 17.9 | 11.2 |
| SMF7.0A | SMF7.0CA | 7.0A | 7.0CA | 7.78 | 8.60 | 10.0 | 10.0 | 7.0 | 16.7 | 12.0 |
| SMF7.5A | SMF7.5CA | 7.5A | 7.5CA | 8.33 | 9.21 | 1.0 | 10.0 | 7.5 | 15.5 | 12.9 |
| SMF8.0A | SMF8.0CA | 8.0A | 8.0CA | 8.89 | 9.83 | 1.0 | 10.0 | 8.0 | 14.7 | 13.6 |
| SMF8.5A | SMF8.5CA | 8.5A | 8.5CA | 9.44 | 10.40 | 1.0 | 10.0 | 8.5 | 13.9 | 14.4 |
| SMF9.0A | SMF9.0CA | 9.0A | 9.0CA | 10.00 | 11.10 | 1.0 | 10.0 | 9.0 | 13.0 | 15.4 |
| SMF10A | SMF10CA | 10A | 10CA | 11.10 | 12.30 | 1.0 | 2.5 | 10.0 | 11.8 | 17.0 |
| SMF11A | SMF11CA | 11A | 11CA | 12.20 | 13.50 | 1.0 | 2.5 | 11.0 | 11.0 | 18.2 |
| SMF12A | SMF12CA | 12A | 12CA | 13.30 | 14.70 | 1.0 | 2.5 | 12.0 | 10.1 | 19.9 |
| SMF13A | SMF13CA | 13A | 13CA | 14.40 | 15.90 | 1.0 | 1.0 | 13.0 | 9.3 | 21.5 |
| SMF14A | SMF14CA | 14A | 14CA | 15.60 | 17.20 | 1.0 | 1.0 | 14.0 | 8.6 | 23.2 |
| SMF15A | SMF15CA | 15A | 15CA | 16.70 | 18.50 | 1.0 | 1.0 | 15.0 | 8.2 | 24.4 |
| SMF16A | SMF16CA | 16A | 16CA | 17.80 | 19.70 | 1.0 | 1.0 | 16.0 | 7.7 | 26.0 |
| SMF17A | SMF17CA | 17A | 17CA | 18.90 | 20.90 | 1.0 | 1.0 | 17.0 | 7.2 | 27.6 |
| SMF18A | SMF18CA | 18A | 18CA | 20.00 | 22.10 | 1.0 | 1.0 | 18.0 | 6.8 | 29.2 |
| SMF20A | SMF20CA | 20A | 20CA | 22.20 | 24.50 | 1.0 | 1.0 | 20.0 | 6.2 | 32.4 |
| SMF22A | SMF22CA | 22A | 22CA | 24.40 | 26.90 | 1.0 | 1.0 | 22.0 | 5.6 | 35.5 |
| SMF24A | SMF24CA | 24A | 24CA | 26.70 | 29.50 | 1.0 | 1.0 | 24.0 | 5.1 | 38.9 |
| SMF26A | SMF26CA | 26A | 26CA | 28.90 | 31.90 | 1.0 | 1.0 | 26.0 | 4.8 | 42.1 |
| SMF28A | SMF28CA | 28A | 28CA | 31.10 | 34.40 | 1.0 | 1.0 | 28.0 | 4.4 | 45.4 |
| SMF30A | SMF30CA | 30A | 30CA | 33.30 | 36.80 | 1.0 | 1.0 | 30.0 | 4.1 | 48.4 |
| SMF33A | SMF33CA | 33A | 33CA | 36.70 | 40.60 | 1.0 | 1.0 | 33.0 | 3.8 | 53.3 |
| SMF36A | SMF36CA | 36A | 36CA | 40.00 | 44.20 | 1.0 | 1.0 | 36.0 | 3.4 | 58.1 |
| SMF40A | SMF40CA | 40A | 40CA | 44.40 | 49.10 | 1.0 | 1.0 | 40.0 | 3.1 | 64.5 |
| SMF43A | SMF43CA | 43A | 43CA | 47.80 | 52.80 | 1.0 | 1.0 | 43.0 | 2.9 | 69.4 |
| SMF45A | SMF45CA | 45A | 45CA | 50.00 | 55.30 | 1.0 | 1.0 | 45.0 | 2.8 | 72.7 |
| SMF48A | SMF48CA | 48A | 48CA | 53.30 | 58.90 | 1.0 | 1.0 | 48.0 | 2.6 | 77.4 |
| SMF51A | SMF51CA | 51A | 51CA | 56.70 | 62.70 | 1.0 | 1.0 | 51.0 | 2.4 | 82.4 |
| SMF54A | SMF54CA | 54A | 54CA | 60.00 | 66.30 | 1.0 | 1.0 | 54.0 | 2.3 | 87.1 |
| SMA58A | SMA58CA | 58A | 58CA | 64.40 | 71.20 | 1.0 | 1.0 | 58.0 | 2.1 | 93.6 |



SMF SERIES

| 产品型号 Part Number | | 标识代码 Marking | | 击穿电压 $V_{BR@I_T}$ Breakdown Voltage $V_{BR@I_T}$ | | | 最大反向漏电流 $I_R@V_{WM}$ Maximum Reverse Leakage $I_R^{(3)}$ (μA) | 最大工作电压 V_{RWM} Working Peak Reverse Voltage $V_{RWM}(V)$ | 最大反向浪涌电流 IPP Maximum Reverse Surge Current IPP ⁽²⁾ (A) | 最大箝位电压 Maximum Clamping Voltage V_c @ I_{PP} (V) |
|---------------------|------------|-----------------|------------|---|---------------|--------------------------|--|---|---|---|
| 单向 (Uni) | 双向 (Bi) | 单向 (Uni) | 双向 (Bi) | 最小 Min(V) | 最大 Max (V) | 测试电流 $I_T^{(1)}$ (mA) | | | | |
| SMF60A | SMF60CA | 60A | 60CA | 66.70 | 73.70 | 1.0 | 1.0 | 60.0 | 1.8 | 96.8 |
| SMF64A | SMF64CA | 64A | 64CA | 71.10 | 78.60 | 1.0 | 1.0 | 64.0 | 1.7 | 103.0 |
| SMF70A | SMF70CA | 70A | 70CA | 77.80 | 86.00 | 1.0 | 1.0 | 70.0 | 1.5 | 113.0 |
| SMF75A | SMF75CA | 75A | 75CA | 83.30 | 92.10 | 1.0 | 1.0 | 75.0 | 1.4 | 121.0 |
| SMF78A | SMF78CA | 78A | 78CA | 86.70 | 95.80 | 1.0 | 1.0 | 78.0 | 1.4 | 126.0 |
| SMF85A | SMF85CA | 85A | 85CA | 94.40 | 104.00 | 1.0 | 1.0 | 85.0 | 1.3 | 137.0 |
| SMF90A | SMF90CA | 90A | 90CA | 100.00 | 111.00 | 1.0 | 1.0 | 90.0 | 1.2 | 146.0 |
| SMF100A | SMF100CA | 100A | 100CA | 111.00 | 123.00 | 1.0 | 1.0 | 100.0 | 1.1 | 162.0 |
| SMF110A | SMF110CA | 110A | 110CA | 122.00 | 135.00 | 1.0 | 1.0 | 110.0 | 1.0 | 177.0 |
| SMF120A | SMF120CA | 120A | 120CA | 133.00 | 147.00 | 1.0 | 1.0 | 120.0 | 0.9 | 193.0 |
| SMF130A | SMF130CA | 130A | 130CA | 144.00 | 159.00 | 1.0 | 1.0 | 130.0 | 0.8 | 209.0 |
| SMF150A | SMF150CA | 140A | 140CA | 167.00 | 185.00 | 1.0 | 1.0 | 150.0 | 0.7 | 243.0 |
| SMF160A | SMF160CA | 160A | 160CA | 178.00 | 197.00 | 1.0 | 1.0 | 160.0 | 0.7 | 259.0 |
| SMF170A | SMF170CA | 170A | 170CA | 189.00 | 209.00 | 1.0 | 1.0 | 170.0 | 0.6 | 275.0 |

■特性曲线（典型） Characteristics(Typical)

图1: 最大脉冲功率曲线

FIG1: Peak Pulse Power Rating Curve

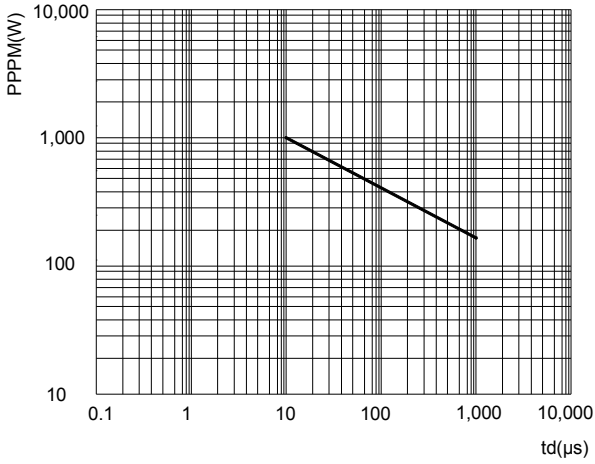


图2: 脉冲波形

FIG2: Pulse Waveform

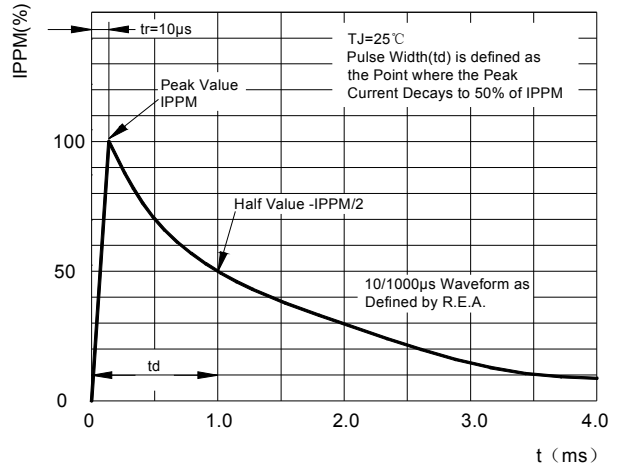


图3: 脉冲功率或电流与结温关系

FIG3: Pulse Power or Current vs. Initial Junction Temperature

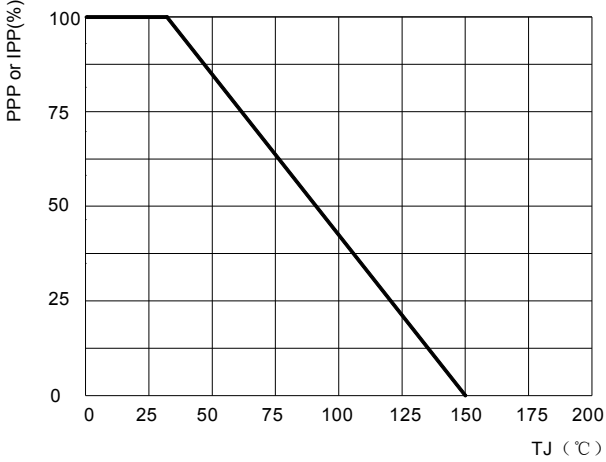


图4: 正向电压曲线

FIG4: Forward Voltage Curve

