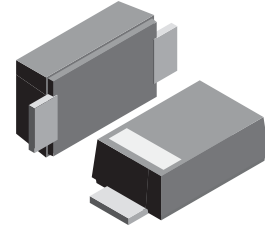


**VOLTAGE RANGE: 5.0 - 170V**

**POWER: 200Watts**

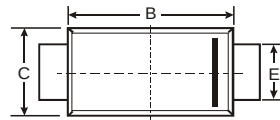
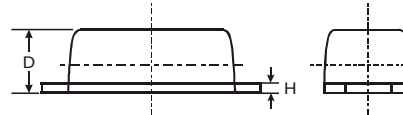
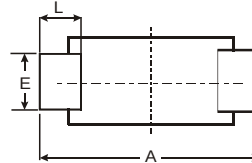
### Features

- For surface mounted applications
- Low profile package
- Low incremental surge resistance, excellent clamping capability
- 200W peak pulse power capability with a10/1000 wave from, repetition rate (duty cycle): 0.01%
- High temperature soldering guaranteed: 260 °C/10 seconds, at terminals



### Mechanical Data

- Case: SOD-123FL plastic body over passivated junction
- Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.0007 ounce, 0.02 grams



| SOD-123FL            |       |      |      |
|----------------------|-------|------|------|
| Dim                  | Min   | Max  | Typ  |
| A                    | 3.58  | 3.72 | 3.65 |
| B                    | 2.72  | 2.78 | 2.75 |
| C                    | 1.77  | 1.83 | 1.80 |
| D                    | 1.02  | 1.08 | 1.05 |
| E                    | 0.097 | 1.03 | 1.00 |
| H                    | 0.13  | 0.17 | 0.15 |
| L                    | 0.53  | 0.57 | 0.55 |
| All Dimensions in mm |       |      |      |

### Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic                                                                              | Symbol          | Value       | Unit                      |
|---------------------------------------------------------------------------------------------|-----------------|-------------|---------------------------|
| Maximum $P_{PK}$ Dissipation (PW - 10/1000 $\mu\text{s}$ )                                  | $P_{PK}$        | 200         | W                         |
| Maximum $P_{PK}$ Dissipation @ $T_A = 25^\circ\text{C}$ (PW - 8/10 $\mu\text{s}$ ) (Note 2) | $P_{PK}$        | 1000        | W                         |
| DC Power Dissipation @ $T_A = 25^\circ\text{C}$ (Note 3)                                    | $P_D$           | 385         | mW                        |
| Derate above $25^\circ\text{C}$                                                             |                 | 4.0         | mW/ $^\circ\text{C}$      |
| Thermal Resistance, Junction to Ambient (Note 3)                                            | $R_{\theta JA}$ | 325         | $^\circ\text{C}/\text{W}$ |
| Thermal Resistance, Junction to Lead (Note 3)                                               | $R_{\theta JL}$ | 26          | $^\circ\text{C}/\text{W}$ |
| Operating Junction and Storage Temperature Range                                            | $T_J, T_{STG}$  | -55 to +150 | $^\circ\text{C}$          |

#### Notes :

- (1) Non-repetitive current pulse at  $T_A = 25^\circ\text{C}$ , per waveform of Fig. 2.
- (2) Non-repetitive current pulse at  $T_A = 25^\circ\text{C}$ , per waveform of Fig. 5.
- (3) Mounted with recommended minimum pad size, DC board FR4.

| Type    |          | Marking |      | Reverse Stand-Off Voltage | Breakdown Voltage Min. @I <sub>T</sub> | Breakdown Voltage Max. @ I <sub>T</sub> | Test Current        | Reverse Leakage @V <sub>RWM</sub> | Maximum Clamping Voltage @I <sub>PP</sub> | Peak Pulse Current   |
|---------|----------|---------|------|---------------------------|----------------------------------------|-----------------------------------------|---------------------|-----------------------------------|-------------------------------------------|----------------------|
| (Uni)   | (Bi)     | (Uni)   | (Bi) | V <sub>RWM</sub> (V)      | V <sub>BR</sub> MIN(V)                 | V <sub>BR</sub> MAX(V)                  | I <sub>T</sub> (mA) | I <sub>R</sub> (uA)               | V <sub>C</sub> (V)                        | I <sub>PP</sub> (mA) |
| MMF5.0A | MMF5.0CA | KE      | FE   | 5.0                       | 6.40                                   | 7.00                                    | 10                  | 400                               | 9.2                                       | 21.7                 |
| MMF6.0A | MMF6.0CA | KG      | FG   | 6.0                       | 6.67                                   | 7.37                                    | 10                  | 400                               | 10.3                                      | 19.4                 |
| MMF6.5A | MMF6.5CA | KK      | FK   | 6.5                       | 7.22                                   | 7.98                                    | 10                  | 250                               | 11.2                                      | 17.9                 |
| MMF7.0A | MMF7.0CA | KM      | FM   | 7.0                       | 7.78                                   | 8.60                                    | 10                  | 100                               | 12.0                                      | 16.7                 |
| MMF7.5A | MMF7.5CA | KP      | FP   | 7.5                       | 8.33                                   | 9.21                                    | 1.0                 | 50                                | 12.9                                      | 15.5                 |
| MMF8.0A | MMF8.0CA | KR      | FR   | 8.0                       | 8.89                                   | 9.83                                    | 1.0                 | 25                                | 13.6                                      | 14.7                 |
| MMF8.5A | MMF8.5CA | KT      | FT   | 8.5                       | 9.44                                   | 10.4                                    | 1.0                 | 10                                | 14.4                                      | 13.9                 |
| MMF9.0A | MMF9.0CA | KV      | FV   | 9.0                       | 10.0                                   | 11.1                                    | 1.0                 | 5.0                               | 15.4                                      | 13.0                 |
| MMF10A  | MMF10CA  | KX      | FX   | 10                        | 11.1                                   | 12.3                                    | 1.0                 | 2.5                               | 17.0                                      | 11.8                 |
| MMF11A  | MMF11CA  | KZ      | FZ   | 11                        | 12.2                                   | 13.5                                    | 1.0                 | 2.5                               | 18.2                                      | 11.0                 |
| MMF12A  | MMF12CA  | LE      | HE   | 12                        | 13.3                                   | 14.7                                    | 1.0                 | 2.5                               | 19.9                                      | 10.1                 |
| MMF13A  | MMF13CA  | LG      | HG   | 13                        | 14.4                                   | 15.9                                    | 1.0                 | 1.0                               | 21.5                                      | 9.3                  |
| MMF14A  | MMF14CA  | LK      | HK   | 14                        | 15.6                                   | 17.2                                    | 1.0                 | 1.0                               | 23.2                                      | 8.6                  |
| MMF15A  | MMF15CA  | LM      | HM   | 15                        | 16.7                                   | 18.5                                    | 1.0                 | 1.0                               | 24.4                                      | 8.2                  |
| MMF16A  | MMF16CA  | LP      | HP   | 16                        | 17.8                                   | 19.7                                    | 1.0                 | 1.0                               | 26.0                                      | 7.7                  |
| MMF17A  | MMF17CA  | LR      | HR   | 17                        | 18.9                                   | 20.9                                    | 1.0                 | 1.0                               | 27.6                                      | 7.2                  |
| MMF18A  | MMF18CA  | LT      | HT   | 18                        | 20.0                                   | 22.1                                    | 1.0                 | 1.0                               | 29.2                                      | 6.8                  |
| MMF20A  | MMF20CA  | LV      | HV   | 20                        | 22.2                                   | 24.5                                    | 1.0                 | 1.0                               | 32.4                                      | 6.2                  |
| MMF22A  | MMF22CA  | LX      | HX   | 22                        | 24.4                                   | 26.9                                    | 1.0                 | 1.0                               | 35.5                                      | 5.6                  |
| MMF24A  | MMF24CA  | LZ      | HZ   | 24                        | 26.7                                   | 29.5                                    | 1.0                 | 1.0                               | 38.9                                      | 5.1                  |
| MMF26A  | MMF26CA  | ME      | JE   | 26                        | 28.9                                   | 31.9                                    | 1.0                 | 1.0                               | 42.1                                      | 4.8                  |
| MMF28A  | MMF28CA  | MG      | JG   | 28                        | 31.1                                   | 34.4                                    | 1.0                 | 1.0                               | 45.4                                      | 4.4                  |
| MMF30A  | MMF30CA  | MK      | JK   | 30                        | 33.3                                   | 36.8                                    | 1.0                 | 1.0                               | 48.4                                      | 4.1                  |
| MMF33A  | MMF33CA  | MM      | JM   | 33                        | 36.7                                   | 40.6                                    | 1.0                 | 1.0                               | 53.3                                      | 3.8                  |
| MMF36A  | MMF36CA  | MP      | JP   | 36                        | 40.0                                   | 44.2                                    | 1.0                 | 1.0                               | 58.1                                      | 3.4                  |
| MMF40A  | MMF40CA  | MR      | JR   | 40                        | 44.4                                   | 49.1                                    | 1.0                 | 1.0                               | 64.5                                      | 3.1                  |
| MMF43A  | MMF43CA  | MT      | JT   | 43                        | 47.8                                   | 52.8                                    | 1.0                 | 1.0                               | 69.4                                      | 2.9                  |
| MMF45A  | MMF45CA  | MV      | JV   | 45                        | 50.0                                   | 55.3                                    | 1.0                 | 1.0                               | 72.7                                      | 2.8                  |
| MMF48A  | MMF48CA  | MX      | JX   | 48                        | 53.3                                   | 58.9                                    | 1.0                 | 1.0                               | 77.4                                      | 2.6                  |
| MMF51A  | MMF51CA  | MZ      | JZ   | 51                        | 56.7                                   | 62.7                                    | 1.0                 | 1.0                               | 82.4                                      | 2.4                  |
| MMF54A  | MMF54CA  | NE      | XE   | 54                        | 60.0                                   | 66.3                                    | 1.0                 | 1.0                               | 87.1                                      | 2.3                  |
| MMF58A  | MMF58CA  | NG      | XG   | 58                        | 64.4                                   | 71.2                                    | 1.0                 | 1.0                               | 93.6                                      | 2.1                  |
| MMF60A  | MMF60CA  | NK      | XK   | 60                        | 66.7                                   | 73.7                                    | 1.0                 | 1.0                               | 96.8                                      | 1.8                  |
| MMF64A  | MMF64CA  | NM      | XM   | 64                        | 71.1                                   | 78.6                                    | 1.0                 | 1.0                               | 103                                       | 1.7                  |
| MMF70A  | MMF70CA  | NP      | XP   | 70                        | 77.8                                   | 86.0                                    | 1.0                 | 1.0                               | 113                                       | 1.5                  |
| MMF75A  | MMF75CA  | NR      | XR   | 75                        | 83.3                                   | 92.1                                    | 1.0                 | 1.0                               | 121                                       | 1.4                  |
| MMF78A  | MMF78CA  | NT      | XT   | 78                        | 86.7                                   | 95.8                                    | 1.0                 | 1.0                               | 126                                       | 1.4                  |
| MMF85A  | MMF85CA  | NV      | XB   | 85                        | 94.4                                   | 104                                     | 1.0                 | 1.0                               | 137                                       | 1.3                  |
| MMF90A  | MMF90CA  | NX      | XX   | 90                        | 100                                    | 111                                     | 1.0                 | 1.0                               | 146                                       | 1.2                  |
| MMF100A | MMF100CA | NZ      | XZ   | 100                       | 111                                    | 123                                     | 1.0                 | 1.0                               | 162                                       | 1.1                  |
| MMF110A | MMF110CA | PE      | TE   | 110                       | 122                                    | 135                                     | 1.0                 | 1.0                               | 177                                       | 1.0                  |
| MMF120A | MMF120CA | PG      | TG   | 120                       | 133                                    | 147                                     | 1.0                 | 1.0                               | 193                                       | 0.9                  |
| MMF130A | MMF130CA | PK      | TK   | 130                       | 144                                    | 159                                     | 1.0                 | 1.0                               | 209                                       | 0.8                  |
| MMF150A | MMF150CA | PM      | TM   | 150                       | 167                                    | 185                                     | 1.0                 | 1.0                               | 243                                       | 0.7                  |
| MMF160A | MMF160CA | PP      | TP   | 160                       | 178                                    | 197                                     | 1.0                 | 1.0                               | 259                                       | 0.7                  |
| MMF170A | MMF170CA | PR      | TR   | 170                       | 189                                    | 209                                     | 1.0                 | 1.0                               | 275                                       | 0.6                  |

## RATING AND CHARACTERISTIC CURVES ( MMF5.0A - MMF170A )

FIG.1 - PULSE DERATING CURVE

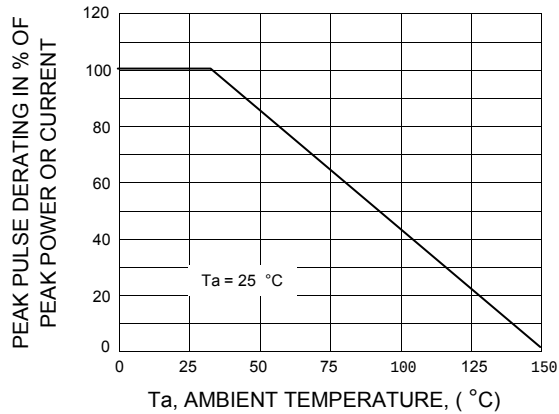


FIG.2 - 10 x 1000  $\mu$ s PULSE WAVEFORM

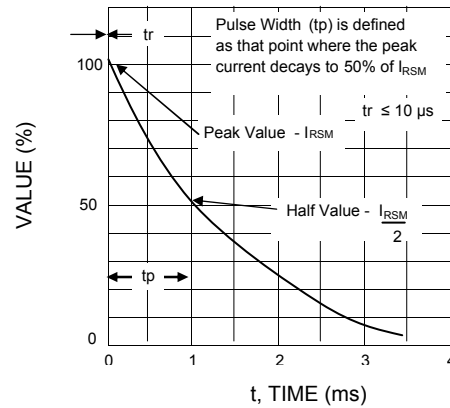


FIG.3 - STEADY STATE POWER DERATING

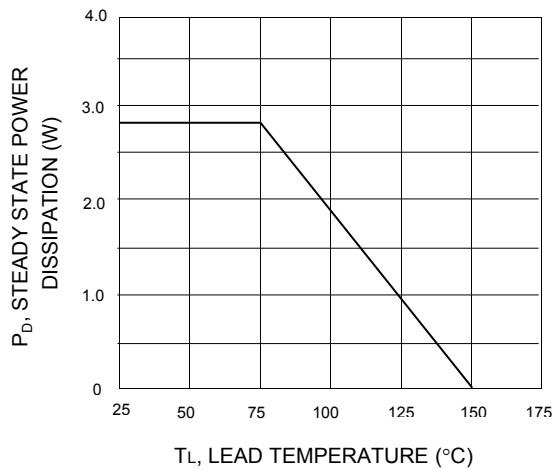


FIG.4 - PULSE RATING CURVE

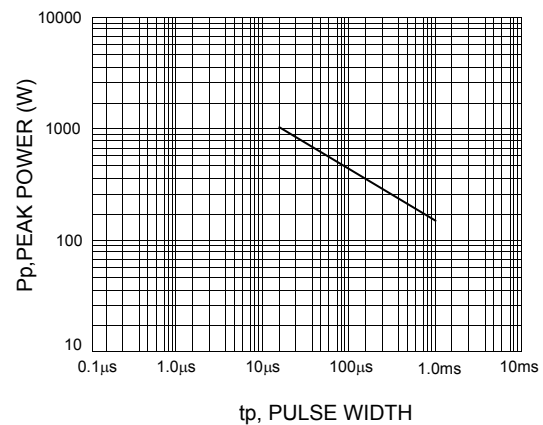


FIG.5 - 8 x 20  $\mu$ s PULSE WAVEFORM

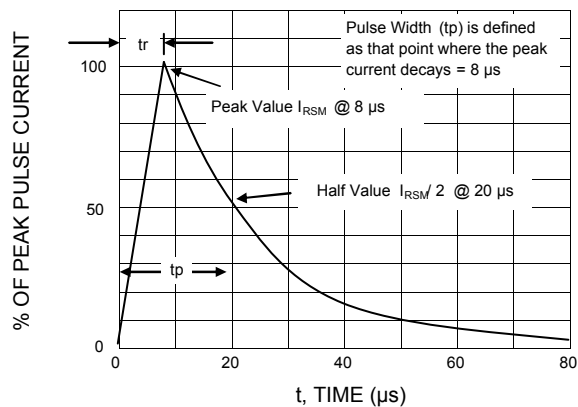


FIG. 6 - CAPACITANCE VS. WORKING PEAK  
REVERSE VOLTAGE

