



# SMF5.0A-AU SERIES

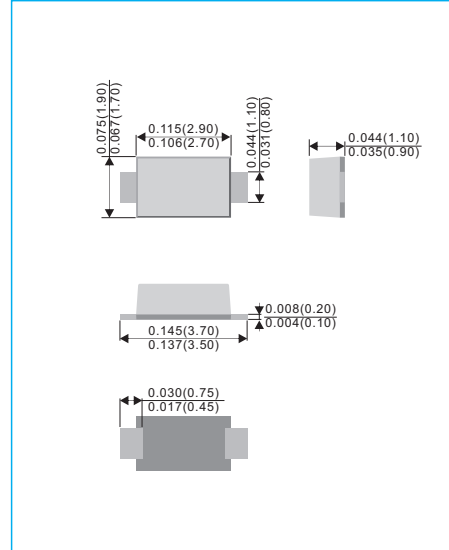
## SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

**VOLTAGE** 5 to 70 Volt **POWER** 200 Watt

**SOD-123FL** Unit : inch(mm)

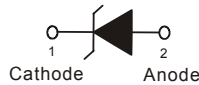
### FEATURES

- For surface mounted applications in order to optimize board space.
- Ultra thin profile package for space constrained utilization
- Package suitable for Automated Handling
- Low inductance
- High temperature soldering : 260°C/10 seconds at terminals
- ESD IEC-61000-4-2 Air ± 30kV, Contact ± 30kV
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard



### MECHANICAL DATA

- Case: SOD-123FL, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.0006 ounces, 0.0173 grams
- Standard Packaging: 8mm tape (EIA-481)



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

| PARAMETER  | SYMBOL                            | VALUE       | UNITS |
|--|-----------------------------------|-------------|-------|
| Peak Pulse Power Dissipation on T <sub>A</sub> = 25°C (Notes 1,2,5, Fig.1) | PPPM                              | 200         | W     |
| Peak Forward Surge Current per (Notes 3)                                   | I <sub>FSM</sub>                  | 20          | A     |
| Peak Pulse Current on tp=10/1000µs waveform (Notes 1) Fig.2                | I <sub>PPM</sub>                  | see Table 1 | A     |
| Steady State Power Dissipation (Notes 4)                                   | P <sub>M(AV)</sub>                | 1           | W     |
| ESD IEC-61000-4-2 (Air)<br>ESD IEC-61000-4-2 (Contact)                     | V <sub>ESD</sub>                  | ±30<br>±30  | kV    |
| Operating Junction and Storage Temperature Range                           | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °C    |
| Typical thermal resistance   | R <sub>θJA</sub>                  | 180         | °C    |

### NOTES :

- 1.Non-repetitive current pulse, per Fig.3 and derated above T<sub>A</sub>=25°C per Fig.2 .
- 2.Mounted on 5mm<sup>2</sup> copper pads to each terminal.
- 3.8.3ms single half sine-wave, or equivalent square wave, duty cycle = 4 pulses per minutes maximum.
- 4.Lead temperature at 75°C =T<sub>L</sub> .
- 5.Peak pulse power waveform is tp=10/1000µs.
- 6.A transient suppressor is selected according to the working peak reverse voltage(V<sub>RWM</sub>), which should be equal to or greater than the DC or continuous peak operating voltage level.



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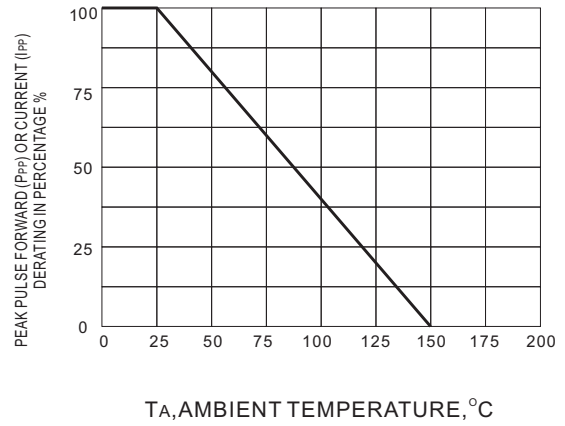
| Part Number                       | V <sub>RWM</sub><br>(Note 6) | V <sub>BR</sub> @ I <sub>T</sub> |      |                | I <sub>R</sub> @ V <sub>RWM</sub> | V <sub>C</sub> @ I <sub>PP</sub> |      | Marking Code |
|-----------------------------------|------------------------------|----------------------------------|------|----------------|-----------------------------------|----------------------------------|------|--------------|
|                                   |                              | Min.                             | Max. | I <sub>T</sub> |                                   | V                                | A    |              |
|                                   | V                            | V                                | V    | mA             | μA                                |                                  |      |              |
| 200W Transient Voltage Suppressor |                              |                                  |      |                |                                   |                                  |      |              |
| SMF5.0A-AU                        | 5                            | 6.4                              | 7    | 10             | 200                               | 9.2                              | 21.7 | HE           |
| SMF6.0A-AU                        | 6                            | 6.7                              | 7.4  | 10             | 100                               | 10.3                             | 19.4 | HG           |
| SMF6.5A-AU                        | 6.5                          | 7.2                              | 8    | 10             | 75                                | 11.2                             | 17.9 | HK           |
| SMF7.0A-AU                        | 7                            | 7.8                              | 8.6  | 10             | 50                                | 12                               | 16.7 | HM           |
| SMF7.5A-AU                        | 7.5                          | 8.3                              | 9.2  | 1              | 50                                | 12.9                             | 15.5 | HP           |
| SMF8.0A-AU                        | 8                            | 8.9                              | 9.8  | 1              | 25                                | 13.6                             | 14.7 | HR           |
| SMF8.5A-AU                        | 8.5                          | 9.4                              | 10.4 | 1              | 10                                | 14.4                             | 13.9 | HT           |
| SMF9.0A-AU                        | 9                            | 10                               | 11.1 | 1              | 5                                 | 15.4                             | 13   | HV           |
| SMF10A-AU                         | 10                           | 11.1                             | 12.3 | 1              | 2.5                               | 17                               | 11.8 | HX           |
| SMF11A-AU                         | 11                           | 12.2                             | 13.5 | 1              | 2.5                               | 18.2                             | 11   | HZ           |
| SMF12A-AU                         | 12                           | 13.3                             | 14.7 | 1              | 2.5                               | 19.9                             | 10.1 | IE           |
| SMF13A-AU                         | 13                           | 14.4                             | 15.9 | 1              | 1                                 | 21.5                             | 9.3  | IG           |
| SMF14A-AU                         | 14                           | 15.6                             | 17.2 | 1              | 1                                 | 23.2                             | 8.6  | IK           |
| SMF15A-AU                         | 15                           | 16.7                             | 18.5 | 1              | 1                                 | 24.4                             | 8.2  | IM           |
| SMF16A-AU                         | 16                           | 17.8                             | 19.7 | 1              | 1                                 | 26                               | 7.7  | IP           |
| SMF17A-AU                         | 17                           | 18.9                             | 20.9 | 1              | 1                                 | 27.6                             | 7.2  | IR           |
| SMF18A-AU                         | 18                           | 20                               | 22.1 | 1              | 1                                 | 29.2                             | 6.8  | IT           |
| SMF20A-AU                         | 20                           | 22.2                             | 24.5 | 1              | 1                                 | 32.4                             | 6.2  | IV           |
| SMF22A-AU                         | 22                           | 24.4                             | 26.9 | 1              | 1                                 | 35.5                             | 5.6  | IX           |
| SMF24A-AU                         | 24                           | 26.7                             | 29.5 | 1              | 1                                 | 38.9                             | 5.1  | IZ           |
| SMF26A-AU                         | 26                           | 28.9                             | 31.9 | 1              | 1                                 | 42.1                             | 4.8  | JE           |
| SMF28A-AU                         | 28                           | 31.1                             | 34.4 | 1              | 1                                 | 45.4                             | 4.4  | JG           |
| SMF30A-AU                         | 30                           | 33.3                             | 36.8 | 1              | 1                                 | 48.4                             | 4.1  | JK           |
| SMF33A-AU                         | 33                           | 36.7                             | 40.6 | 1              | 1                                 | 53.3                             | 3.8  | JM           |
| SMF36A-AU                         | 36                           | 40                               | 44.2 | 1              | 1                                 | 58.1                             | 3.4  | JP           |
| SMF40A-AU                         | 40                           | 44.4                             | 49.1 | 1              | 1                                 | 64.5                             | 3.1  | JR           |
| SMF43A-AU                         | 43                           | 47.8                             | 52.8 | 1              | 1                                 | 69.4                             | 2.9  | JT           |
| SMF45A-AU                         | 45                           | 50                               | 55.3 | 1              | 1                                 | 72.7                             | 2.8  | JV           |
| SMF48A-AU                         | 48                           | 53.3                             | 58.9 | 1              | 1                                 | 77.4                             | 2.6  | JX           |
| SMF51A-AU                         | 51                           | 56.7                             | 62.7 | 1              | 1                                 | 82.4                             | 2.4  | JZ           |
| SMF54A-AU                         | 54                           | 60                               | 66.3 | 1              | 1                                 | 87.1                             | 2.3  | RE           |
| SMF58A-AU                         | 58                           | 64.4                             | 71.2 | 1              | 1                                 | 93.6                             | 2.1  | RG           |
| SMF60A-AU                         | 60                           | 66.7                             | 73.7 | 1              | 1                                 | 96.8                             | 1.8  | RK           |
| SMF64A-AU                         | 64                           | 71.1                             | 78.6 | 1              | 1                                 | 103                              | 1.7  | RM           |
| SMF70A-AU                         | 70                           | 77.8                             | 86   | 1              | 1                                 | 113                              | 1.5  | RP           |



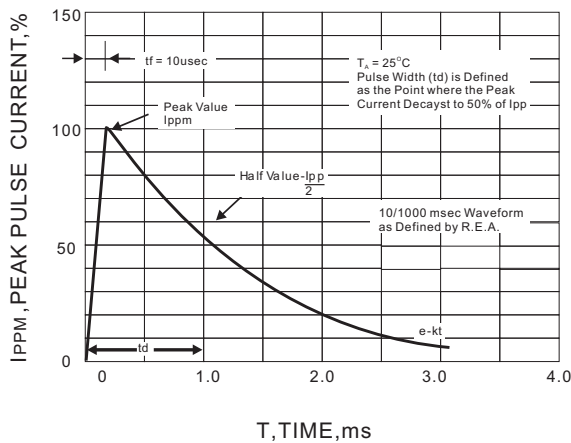
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**Fig.1 PEAK PULSE POWER RATING CURVE**



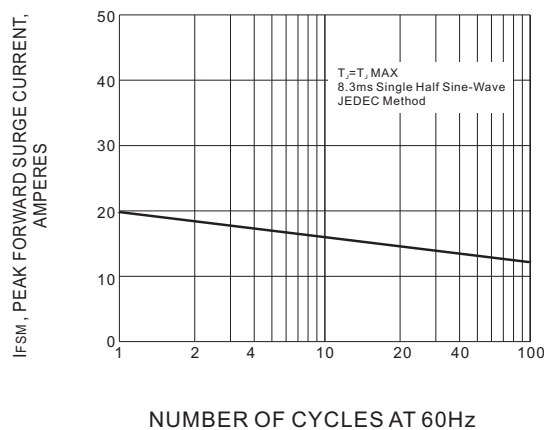
**Fig.2 DERATING CURVE**



**Fig.3 PULSE WAVEFORM**



**Fig.4 TYPICAL JUNCTION CAPACITANCE**



**Fig.5 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**

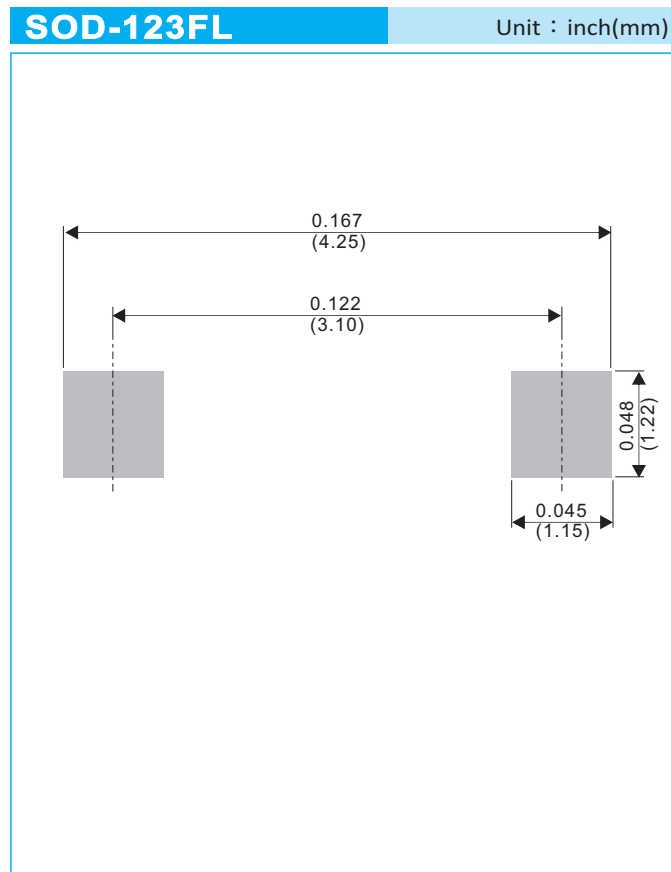


# SMF5.0A-AU SERIES

## PART NO PACKING CODE VERSION

| Part No Packing Code | Package Type | Packing Type       | Marking | Version      |
|----------------------|--------------|--------------------|---------|--------------|
| SMF5.0A-AU_R1_000A1  | SOD-123FL    | 3K pcs / 7" reel   | HE      | Halogen free |
| SMF5.0A-AU_R1_000A1  | SOD-123FL    | 10K pcs / 13" reel | HE      | Halogen free |

## MOUNTING PAD LAYOUT





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