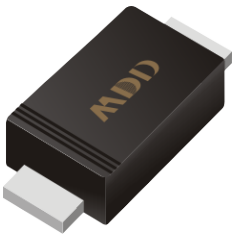

# SMFxx(C)AH

## 1. Protection Solution To Meet

- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 200A (8/20μs)

## 2. Features

- Protects one Power line
- Low clamping voltage
- Working voltage: 12V,15V,18V,20V,22V,24V,28V
- Low leakage current
- High Peak Pulse Power 5600W(8/20μs)

## 3. Main Application

- Fast-charge battery chargers
- Power management system
- DC Power

## 4. Mechanical Characteristics

- SOD-123FL package
- Molding compound flammability rating: UL 94V-0
- Weight 15milligrams (approximate)
- Lead finish: lead free

## 5. Absolute Maximum Ratings($T_A$=25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| ESD per IEC 61000-4-2 (Contact) | $V_{ESD-Contact}$ | ±30 | KV |
| ESD per IEC 61000-4-2 (Air) | $V_{ESD-Air}$ | ±30 | KV |
| Peak Pulse Power(8/20us) | $P_{pp}$ | 5600 | W |
| Operating Temperature | $T_{OPT}$ | -55~+150 | °C |
| Storage Temperature Range | $T_{stg}$ | -55~+150 | °C |



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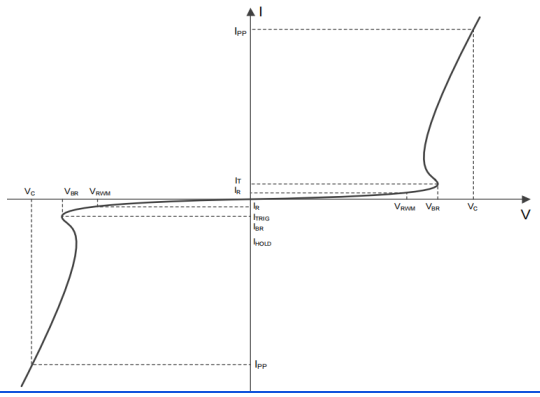
## 6.Electrical Characteristics($T_A$=25°C unless otherwise noted)

| Part Number | Marking | Direction | $V_R$ | $V_{BR}$@ $I_T$ | | $I_T$ | Vc | $I_{PP}$ | $I_R$@$V_R$ |
|---|---|---|---|---|---|---|---|---|---|
| | | | (V) | (V)min | (V)max | (mA) | (V) max | (A) | (μA) max |
| SMF12AH | 12AH | Uni | 12 | 13.0 | 15.0 | 1 | 28 | 200 | 1 |
| SMF12CAH | 12CH | Bi | 12 | 13.0 | 15.0 | 1 | 28 | 200 | 1 |
| SMF15AH | 15AH | Uni | 15 | 16.0 | 19.8 | 1 | 30 | 200 | 1 |
| SMF15CAH | 15CH | Bi | 15 | 16.0 | 19.8 | 1 | 30 | 200 | 1 |
| SMF18AH | 18AH | Uni | 18 | 19.0 | 22.8 | 1 | 32 | 200 | 1 |
| SMF18CAH | 18CH | Bi | 18 | 19.0 | 22.8 | 1 | 32 | 200 | 1 |
| SMF20AH | 20AH | Uni | 20 | 21.8 | 24.7 | 1 | 32 | 200 | 1 |
| SMF20CAH | 20CH | Bi | 20 | 21.8 | 24.7 | 1 | 32 | 200 | 1 |
| SMF22AH | 22AH | Uni | 22 | 23.8 | 27.5 | 1 | 32 | 200 | 1 |
| SMF22CAH | 22CH | Bi | 22 | 23.8 | 27.5 | 1 | 32 | 200 | 1 |
| SMF24AH | 24AH | Uni | 24 | 24.8 | 30.0 | 1 | 32 | 180 | 1 |
| SMF24CAH | 24CH | Bi | 24 | 24.8 | 30.0 | 1 | 32 | 180 | 1 |
| SMF28AH | 28AH | Uni | 28 | 28.8 | 34.5 | 1 | 35 | 170 | 1 |
| SMF28CAH | 28CH | Bi | 28 | 28.8 | 34.5 | 1 | 35 | 170 | 1 |

## 7.Electrical Parameters

| Symbol | Parameter |
|---|---|
| $I_{PP}$ | Maximum Reverse Peak Pulse Current |
| $V_C$ | Clamping Voltage @$I_{PP}$ |
| $V_{RWM}$ | Working Peak Reverse Voltage |
| $I_R$ | Maximum Reverse Leakage Current@$V_{RWM}$ |
| $I_T$ | Test Current |
| $V_{BR}$ | Breakdown Voltage @$I_T$ |
| $P_{PK}$ | Peak Power Dissipation |



## 8.Typical Characterisitics

Fig.1 8/20us Waveform Per iec6100-4-5

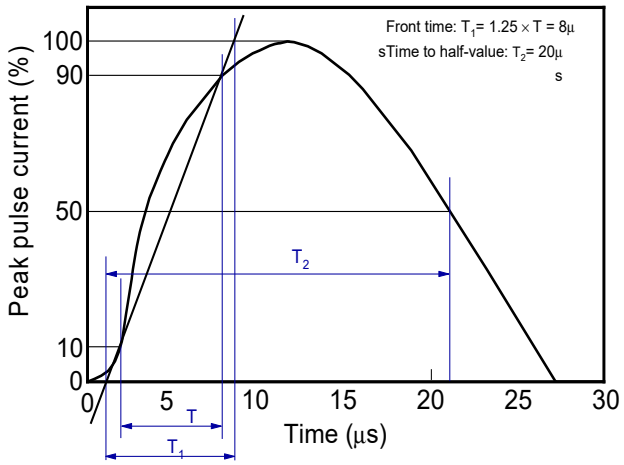



Fig.2 Contact Discharge Current Waveform per IEC61000-4-2

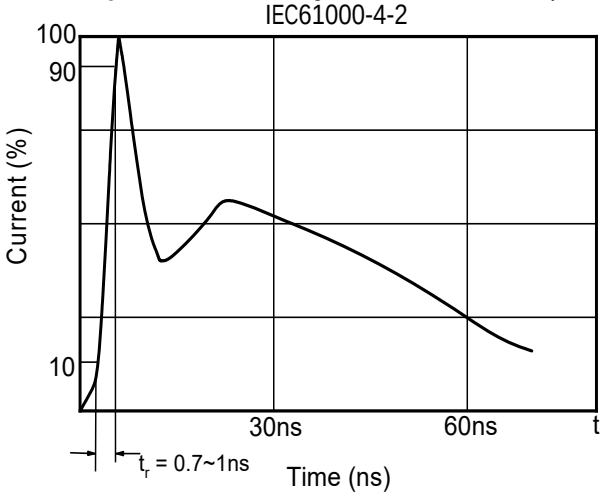
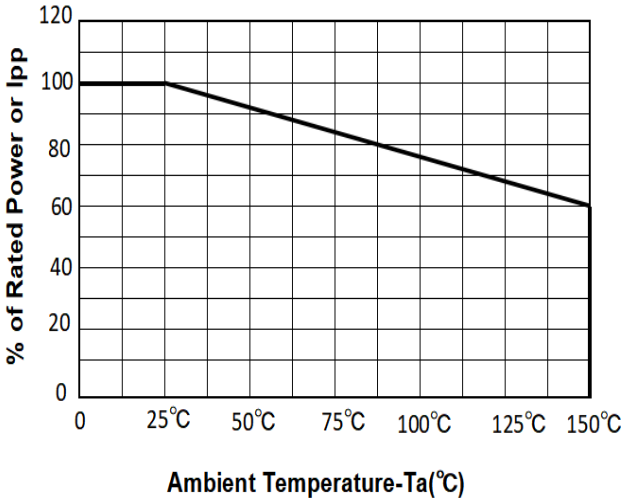


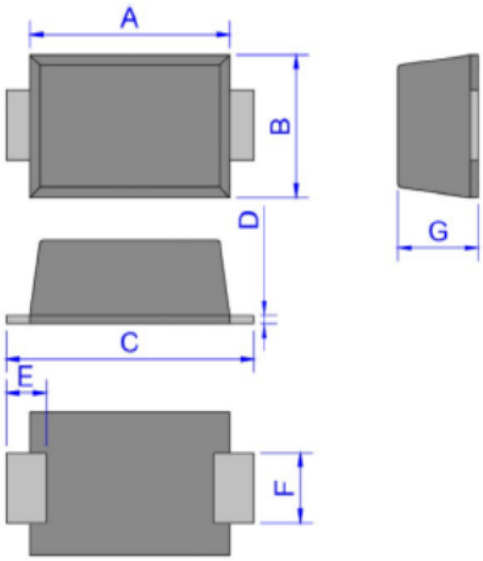

Fig.3 Power Derating




The curve above is for reference only.

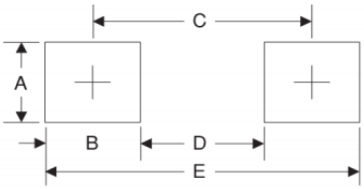
## 9. Outline Drawing

**SOD-123FL Package Outline Dimensions**




| Ref. | Dimensions | | | |
|---|---|---|---|---|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| A | 2.50 | 3.00 | 0.098 | 0.118 |
| B | 1.60 | 2.00 | 0.063 | 0.079 |
| C | 3.45 | 4.00 | 0.134 | 0.158 |
| D | 0.05 | 0.30 | 0.002 | 0.012 |
| E | 0.30 | 1.00 | 0.012 | 0.039 |
| F | 0.80 | 1.20 | 0.031 | 0.046 |
| G | 0.90 | 1.35 | 0.035 | 0.052 |
| J | 1.30 | | 0.051 | |
| K | | 1.70 | | 0.067 |
| L | 1.30 | | 0.051 | |

## 10. Suggested Pad Layout




| Symbol | Unit (mm) | Unit (inch) |
|---|---|---|
| A | 1.2 | 0.047 |
| B | 1.2 | 0.047 |
| C | 3.2 | 0.126 |
| D | 2 | 0.079 |
| E | 4.4 | 0.173 |

Note:

1.Controlling dimension:in/millimeters.

2.General tolerance: ±0.05mm.

3.The pad layout is for reference purposes only.

## 11 Package Specifications

| Package | Reel Size | Reel DIA. (mm) | Q'TY/Reel (pcs) | Box Size (mm) | QTY/Box (pcs) | Carton Size (mm) | Q'TY/Carton (pcs) |
|---|---|---|---|---|---|---|---|
| SOD-123FL | 7' | 178 | 3000 | 190×190×190 | 45,000 | 400×400×220 | 180,000 |

## 12.Important Notice and Disclaimer

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