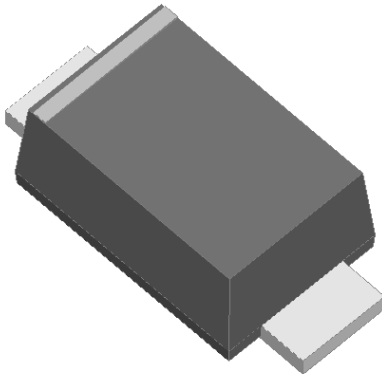


## Surface Mount High Efficient Rectifier

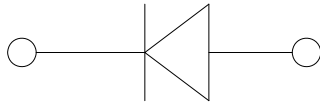


### Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Fast switching for high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Part no. with suffix "Q" means AEC-Q101 qualified

### Typical Applications

For use in high efficient switching rectification of power supply, inverters, converters, and freewheeling diodes for consumer automotive and telecommunication.



### Mechanical Data

- **Package:** SOD-123FL  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

### ■Maximum Ratings (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER                                                                                         | SYMBOL           | UNIT | H1MQ       |
|---------------------------------------------------------------------------------------------------|------------------|------|------------|
| Device marking code                                                                               |                  |      | H1M        |
| Maximum Repetitive Peak Reverse Voltage                                                           | V <sub>RRM</sub> | V    | 1000       |
| Average rectified output current<br>@60Hz Half-sine wave, Resistance load, T <sub>L</sub> (Fig.1) | I <sub>O</sub>   | A    | 1.0        |
| Forward Surge Current (Non-repetitive)<br>@60Hz Half-sine wave, 1 cycle, T <sub>J</sub> =25°C     | I <sub>FSM</sub> | A    | 30         |
| Storage temperature                                                                               | T <sub>stg</sub> | °C   | -55 ~ +150 |
| Junction temperature                                                                              | T <sub>J</sub>   | °C   | -55 ~ +150 |

### ■Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER                                                                                               | SYMBOL          | UNIT | TEST CONDITIONS                                                       | H1MQ |
|---------------------------------------------------------------------------------------------------------|-----------------|------|-----------------------------------------------------------------------|------|
| Maximum instantaneous forward voltage                                                                   | V <sub>F</sub>  | V    | I <sub>F</sub> =1.0A                                                  | 1.7  |
| Maximum reverse recovery time                                                                           | T <sub>RR</sub> | ns   | I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A,<br>I <sub>rr</sub> =0.25A | 75   |
| Maximum DC reverse current at<br>rated DC blocking voltage per diode@ V <sub>RM</sub> =V <sub>RRM</sub> | I <sub>R</sub>  | μA   | T <sub>J</sub> =25°C                                                  | 5    |
|                                                                                                         |                 |      | T <sub>J</sub> =125°C                                                 | 100  |
| Typical junction capacitance                                                                            | C <sub>J</sub>  | pF   | V <sub>R</sub> =4V, f=1Mhz                                            | 7    |



## ■ Thermal Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER                  | SYMBOL            | UNIT | H1MQ              |
|----------------------------|-------------------|------|-------------------|
| Typical Thermal resistance | R <sub>θJ-A</sub> | °C/W | 85 <sup>(1)</sup> |
|                            | R <sub>θJ-L</sub> |      | 35 <sup>(1)</sup> |

Note:

(1) Thermal resistance between junction and ambient and between junction and lead mounted on P.C.B with 3mm\*3mm copper pad areas.

## ■ Characteristics(Typical)

Fig.1:Forward Current Derating Curve

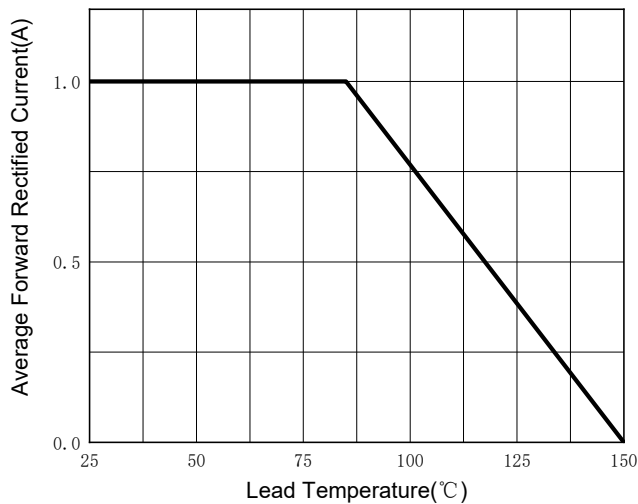


Fig.2:Maximum Non-Repetitive Peak Forward Surge Current

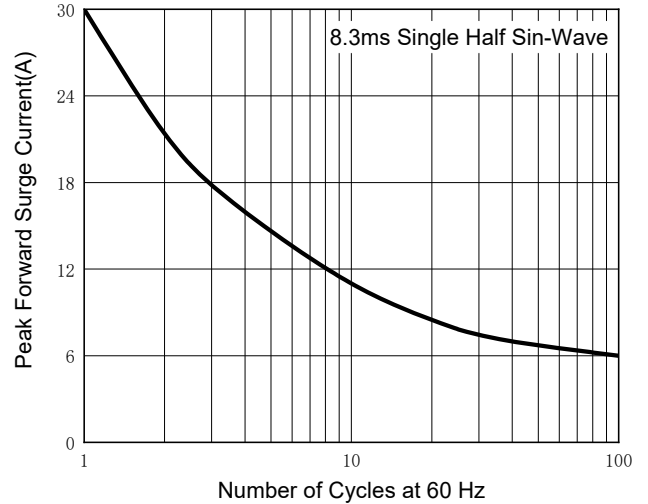


Fig.3:Typical Instantaneous Forward Characteristics

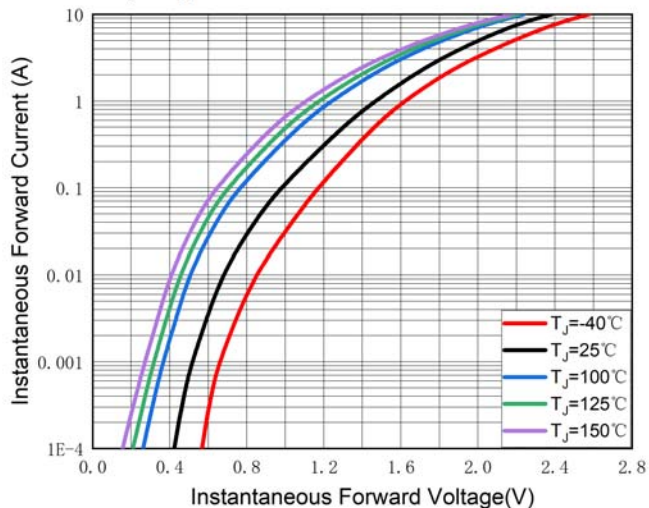


Fig.4:Typical Reverse Leakage Characteristics

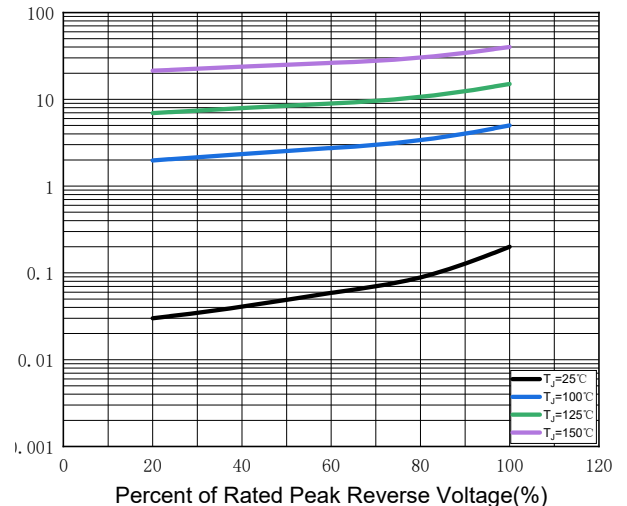
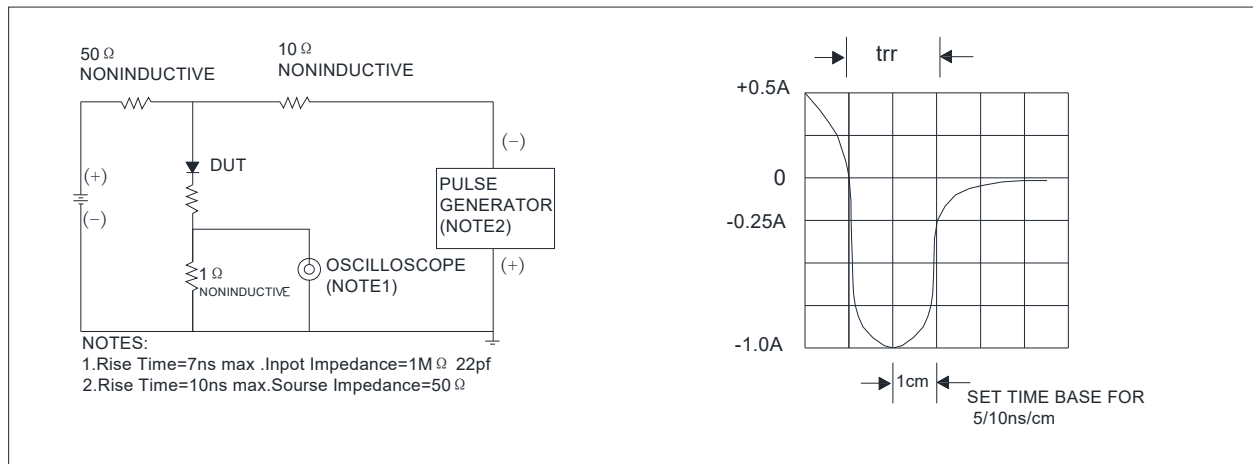


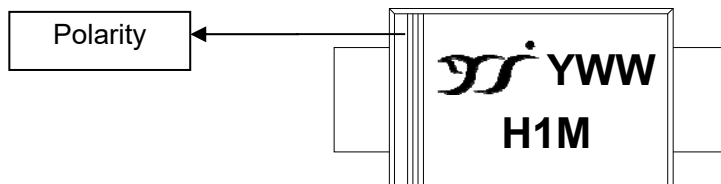
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



## ■ Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g)     | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|--------------------|----------------------|-------------------------|----------------------------|---------------|
| H1MQ          | F1           | Approximate 0.0169 | 3000                 | 30000                   | 120000                     | 7" reel       |

## ■ Marking Information



### Note:

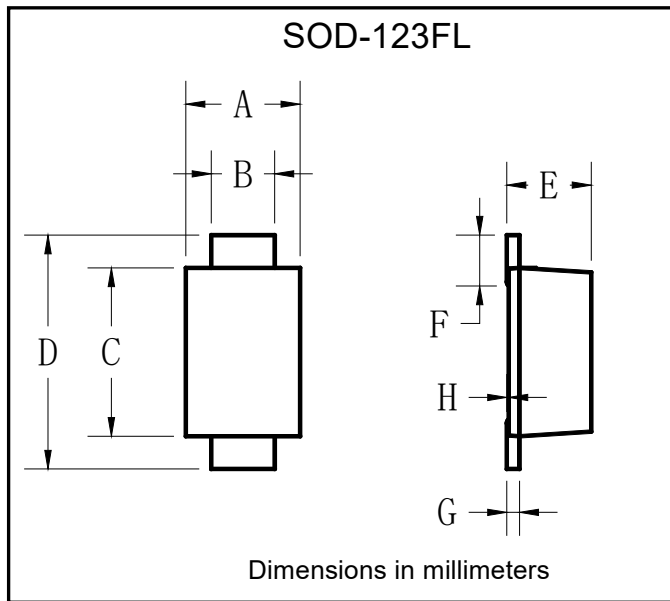
1. All marking is at middle of the product body
2. All marking is in laser printing
3. Body color: Black
4. YWW is date code, "Y" is year. "WW" is week.

For instance:

The 17<sup>th</sup> week of 2021, date code is 117

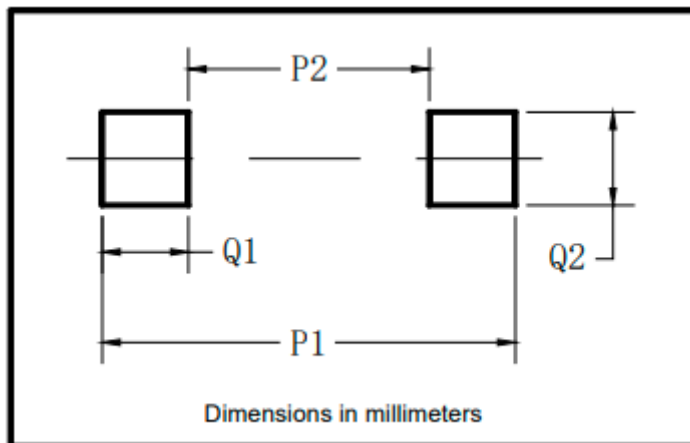
The 17<sup>th</sup> week of 2022, date code is 217

## ■ Outline Dimensions



| SOD-123FL |      |      |
|-----------|------|------|
| Dim       | Min  | Max  |
| A         | 1.60 | 1.90 |
| B         | 0.90 | 1.10 |
| C         | 2.55 | 2.85 |
| D         | 3.60 | 3.90 |
| E         | 1.00 | 1.20 |
| F         | 0.40 | 0.90 |
| G         | 0.10 | 0.25 |
| H         | 0.02 | 0.05 |

## ■ Suggested pad layout



| SOD-123FL |             |
|-----------|-------------|
| Dim       | Millimeters |
| P1        | 3.90        |
| P2        | 1.90        |
| Q1        | 1.00        |
| Q2        | 1.50        |



## Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with automotive electronics, are not designed for use in medical, lifesaving, lifesustaining, or military. Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.21yangjie.com](http://www.21yangjie.com) , or consult your nearest Yangjie's sales office for further assistance.