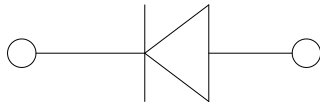
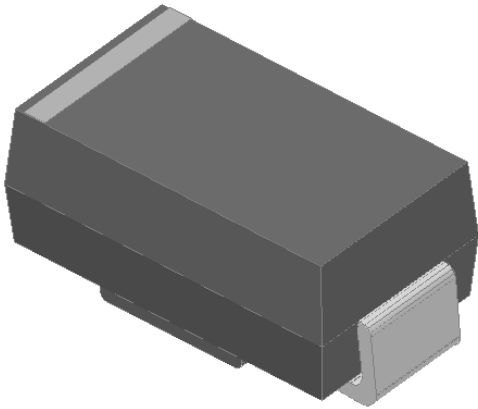


## Surface Mount High Efficient Rectifier



### Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Super fast reverse recovery time
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

### Typical Applications

For use in high frequency rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, and telecommunication.

### Mechanical Data

- **Package:** DO-214AC (SMA)
- 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 ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

| PARAMETER  | SYMBOL           | UNIT | HS1A       | HS1B | HS1D | HS1F | HS1G | HS1J | HS1K | HS1M |
|--|------------------|------|------------|------|------|------|------|------|------|------|
| Device marking code  |                  |      | HS1A       | HS1B | HS1D | HS1F | HS1G | HS1J | HS1K | HS1M |
| Repetitive peak reverse voltage  | VRRM             | V    | 50         | 100  | 200  | 300  | 400  | 600  | 800  | 1000 |
| Average rectified output current<br>@60Hz sine wave, Resistance load, $T_a$ (FIG.1)            | I <sub>O</sub>   | A    | 1.0        |      |      |      |      |      |      |      |
| Surge(non-repetitive)forward current<br>@ 60Hz Half-sine wave, 1 cycle, $T_a=25^\circ\text{C}$ | 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 ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

| PARAMETER   | SYMBOL           | UNIT | TEST CONDITIONS   | HS1A | HS1B | HS1D | HS1F | HS1G | HS1J | HS1K | HS1M |
|---|------------------|------|---|------|------|------|------|------|------|------|------|
| Maximum instantaneous forward voltage drop per diode                                      | V <sub>F</sub>   | V    | I <sub>F</sub> =1.0A  | 1.0  |      |      | 1.3  |      | 1.7  |      |      |
| Maximum reverse recovery time   | T <sub>RR</sub>  | ns   | I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>r</sub> =0.25A | 50   |      |      |      |      |      | 75   |      |
| Maximum DC reverse current at rated DC blocking voltage per diode @ V <sub>RM</sub> =VRRM | I <sub>RRM</sub> | μA   | T <sub>a</sub> =25°C  | 5    |      |      |      |      |      |      |      |
|   |                  |      | T <sub>a</sub> =100°C   | 100  |      |      |      |      |      |      |      |



# HS1A THRU HS1M

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

| PARAMETER          | SYMBOL             | UNIT | HS1A             | HS1B | HS1D | HS1F | HS1G | HS1J | HS1K | HS1M |
|--------------------|--------------------|------|------------------|------|------|------|------|------|------|------|
| Thermal Resistance | R <sub>θ</sub> J-A | °C/W | 75 <sup>1)</sup> |      |      |      |      |      |      |      |
|                    | R <sub>θ</sub> J-L | °C/W | 23 <sup>1)</sup> |      |      |      |      |      |      |      |

Note

(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

## Characteristics (Typical)

FIG1: I<sub>o</sub>-TL Curve

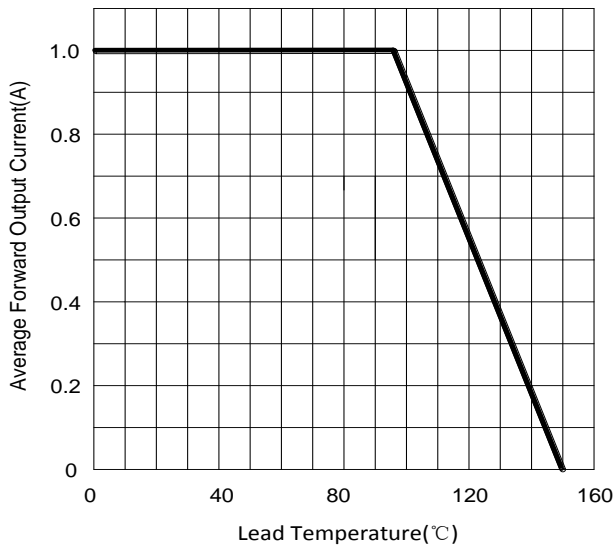


FIG2: Surge Forward Current Capability

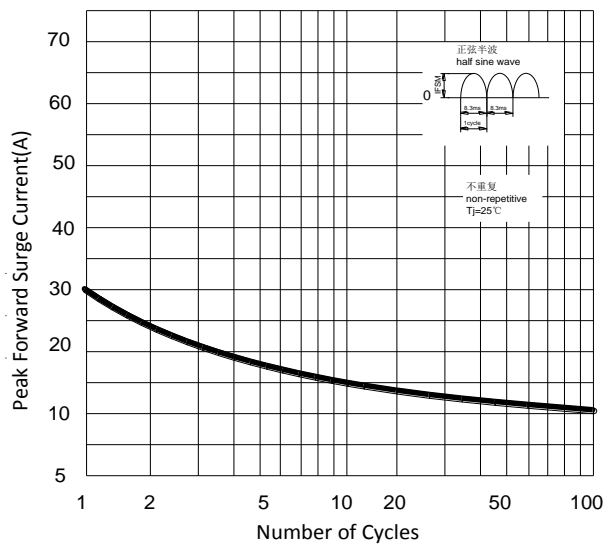


FIG3: TYPICAL FORWARD CHARACTERISTICS

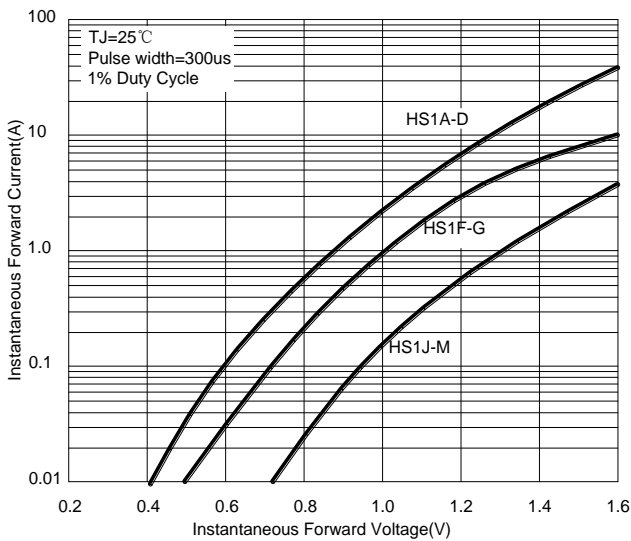
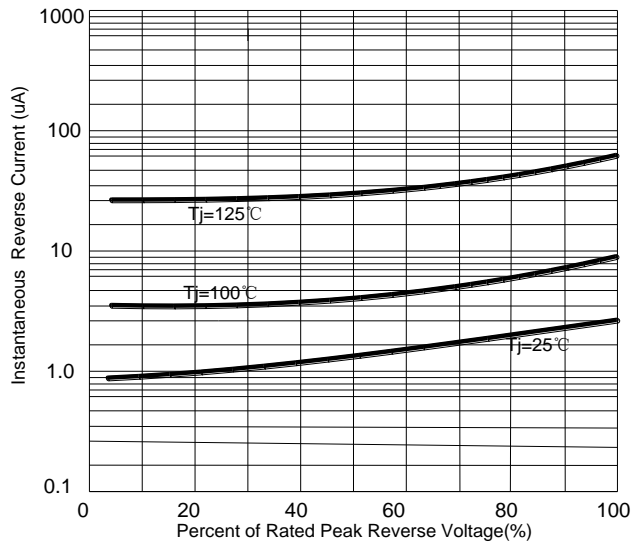


FIG4: Typical Reverse Characteristics



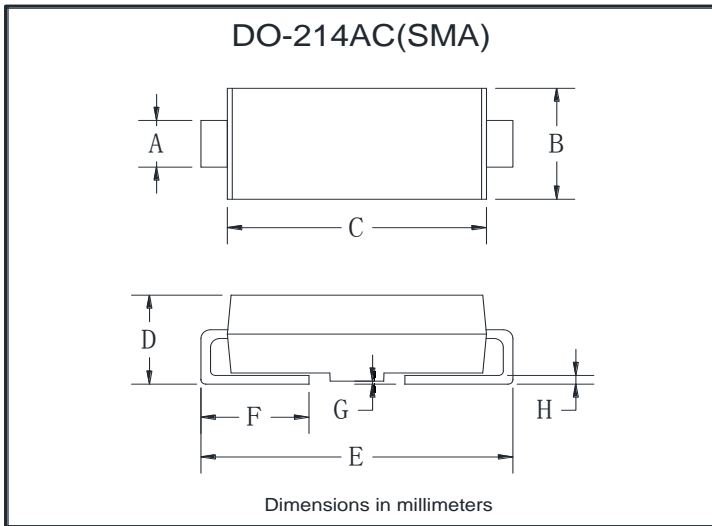


# HS1A THRU HS1M

## Ordering Information (Example)

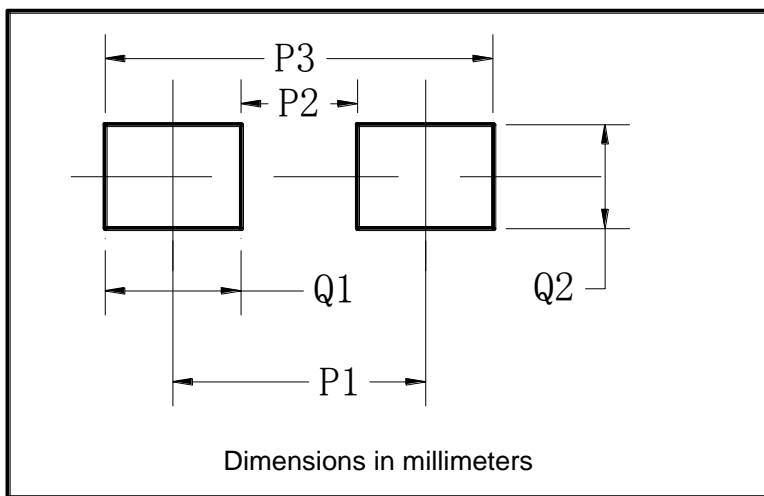
| PREFERRED P/N | PACKAGE CODE | UNIT WEIGHT(g)    | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| HS1A-HS1M     | F1           | Approximate 0.059 | 5000                 | 10000                   | 80000                      | 13" reel      |
| HS1A-HS1M     | F2           | Approximate 0.059 | 7500                 | 15000                   | 120000                     | 13" reel      |
| HS1A-HS1M     | F3           | Approximate 0.059 | 7500                 | 15000                   | 60000                      | 13" reel      |
| HS1A-HS1M     | F4           | Approximate 0.059 | 1800                 | 7200                    | 57600                      | 7" reel       |
| HS1A-HS1M     | F5           | Approximate 0.059 | 2000                 | 8000                    | 64000                      | 7" reel       |
| HS1A-HS1M     | F6           | Approximate 0.059 | 5000                 | 10000                   | 100000                     | 13" reel      |

## Outline Dimensions



| DO-214AC(SMA) |      |      |
|---------------|------|------|
| Dim           | Min  | Max  |
| A             | 1.25 | 1.58 |
| B             | 2.40 | 2.83 |
| C             | 4.25 | 4.75 |
| D             | 1.90 | 2.30 |
| E             | 4.93 | 5.28 |
| F             | 0.76 | 1.41 |
| G             | 0.08 | 0.20 |
| H             | 0.15 | 0.31 |

## Suggested Pad Layout



| DO-214AC(SMA) |             |
|---------------|-------------|
| Dim           | Millimeters |
| P1            | 4.00        |
| P2            | 1.50        |
| P3            | 6.50        |
| Q1            | 2.50        |
| Q2            | 1.70        |



## HS1A THRU HS1M

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