



# SM820C thru SM8200C



## Schottky Barrier Rectifiers



DO-214AB(SMC)

### Features

- Low profile package
- Ideal for automated placement
- Guard Ring for over voltage protection
- Low forward voltage drop
- Component in accordance to RoHS 2002/95/EC
- AEC-Q101 qualified

### Ordering Information

| Part No. | Package | Packing            |
|----------|---------|--------------------|
| SM8xxxC  | SMC     | 3000 / Tape & Reel |

### Device P/N

| Part Number | Remark       |
|-------------|--------------|
| SM8xxxC     | General      |
| SM8xxxC-H   | Halogen Free |
| SM8xxxC-Q   | Automotive   |

### Primary Characteristics

|           |                          |    |
|-----------|--------------------------|----|
| $I_F$     | 8                        | A  |
| $V_{RRM}$ | 20~200                   | V  |
| $I_{FSM}$ | 125                      | A  |
| $V_F$     | 0.55,0.70,0.85,0.87,0.90 | V  |
| $T_J$ max | 125,150                  | °C |

### Mechanical Data

- Case: DO-214AB (SMC)
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Terminals: Lead Free Plating (Tin Finish). Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.231 grams (approximate)

### Maximum Ratings (TA=25°C unless otherwise noted)

| PARAMETER                                                                          | SYMBOL                               | SM<br>820C  | SM<br>830C | SM<br>840C | SM<br>850C | SM<br>860C | SM<br>880C  | SM<br>8100C | SM<br>8150C | SM<br>8200C | UNIT |
|------------------------------------------------------------------------------------|--------------------------------------|-------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|------|
| Maximum repetitive peak reverse voltage                                            | V <sub>RRM</sub>                     | 20          | 30         | 40         | 50         | 60         | 80          | 100         | 150         | 200         | V    |
| Maximum RMS voltage                                                                | V <sub>RMS</sub>                     | 14          | 21         | 28         | 35         | 42         | 56          | 70          | 105         | 140         | V    |
| Maximum DC blocking voltage                                                        | V <sub>DC</sub>                      | 20          | 30         | 40         | 50         | 60         | 80          | 100         | 150         | 200         | V    |
| Maximum average forward rectified current                                          | I <sub>F</sub>                       | 8           |            |            |            |            |             |             |             |             | A    |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load | I <sub>FSM</sub>                     | 125         |            |            |            |            |             |             |             |             | A    |
| Maximum Instantaneous Forward Voltage<br>IF=8A @ 25°C                              | V <sub>F</sub>                       | 0.55        |            |            | 0.70       |            | 0.85        |             | 0.87        | 0.90        | V    |
| Maximum DC Reverse Current @ TA=25°C<br>at Rated DC Blocking Voltage @ TA=100°C    | I <sub>R</sub>                       | 0.5<br>30   |            |            |            |            | 0.2<br>10   |             |             | mA          |      |
| Typical Junction Capacitance(NOTE1)                                                | C <sub>j</sub>                       | 340         |            |            | 250        |            | 210         |             | 180         | 150         | pF   |
| Typical Thermal Resistance                                                         | R <sub>θJa</sub><br>R <sub>θJC</sub> | 50<br>30    |            |            |            |            |             |             |             |             | °C/W |
| Operating Temperature Range                                                        | T <sub>J</sub>                       | -55 to +125 |            |            |            |            | -55 to +150 |             |             |             | °C   |
| Storage Temperature Range                                                          | T <sub>STG</sub>                     | -55 to +150 |            |            |            |            |             |             |             |             | °C   |
| Marking Code                                                                       |                                      | SM<br>820C  | SM<br>830C | SM<br>840C | SM<br>850C | SM<br>860C | SM<br>880C  | SM<br>8100C | SM<br>8150C | SM<br>8200C |      |

### NOTES:

1.Measured at 1.0MHZ and applied reverse voltage of 4.0V DC



### Rating and Characteristics Curves

FIG. 1-Typical Forward Current Derating Curve

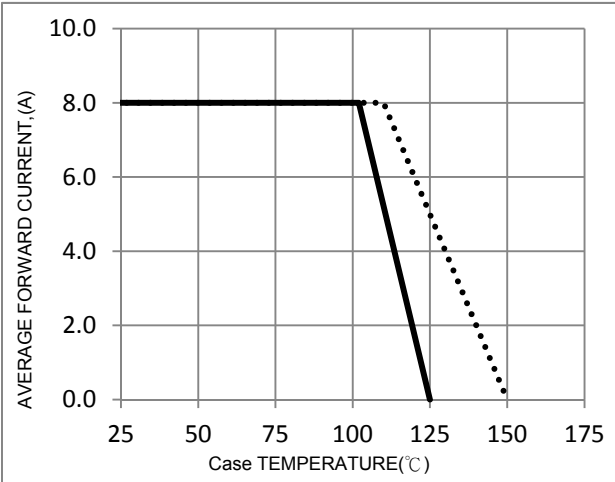


FIG. 2-Typical Forward Characteristics

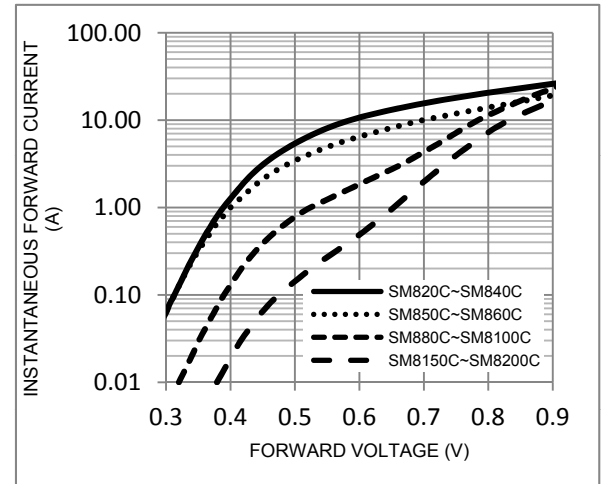


FIG. 3-Maximum Non-Repetitive Forward Surge Current

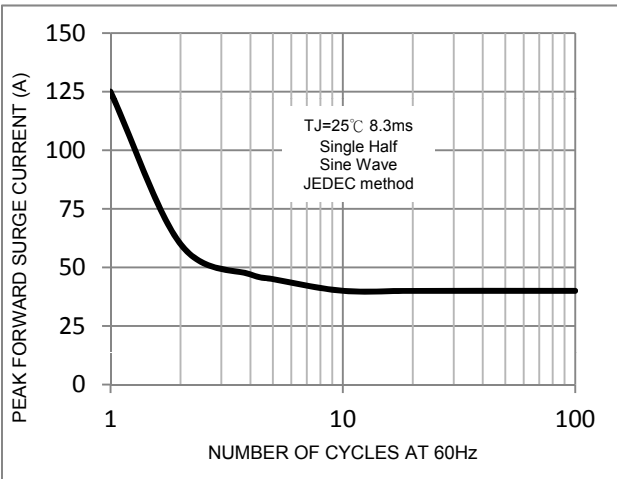


FIG. 4-Typical Reverse Characteristics

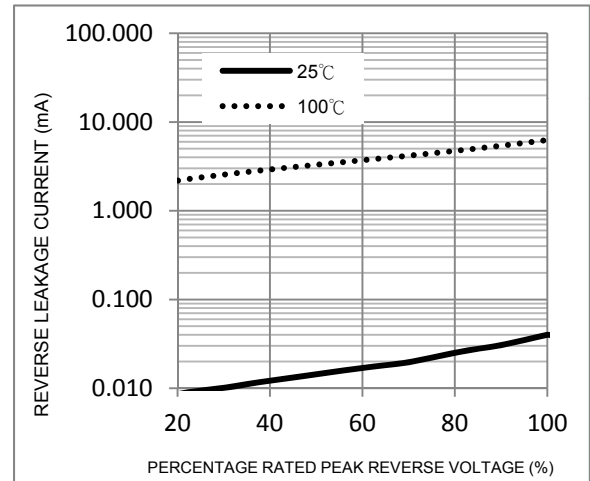
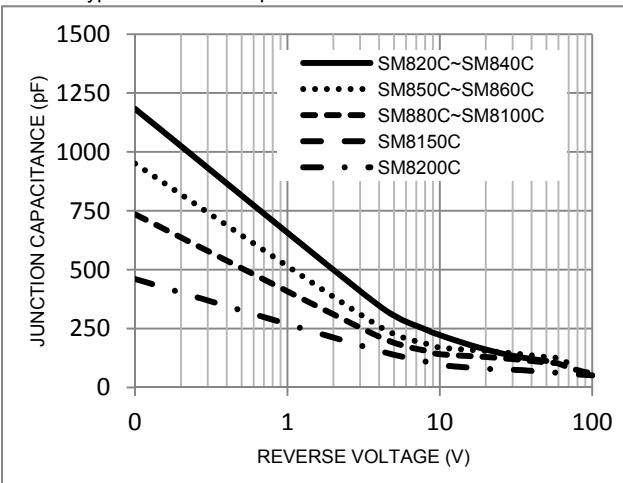


FIG. 5-Typical Junction Capacitance



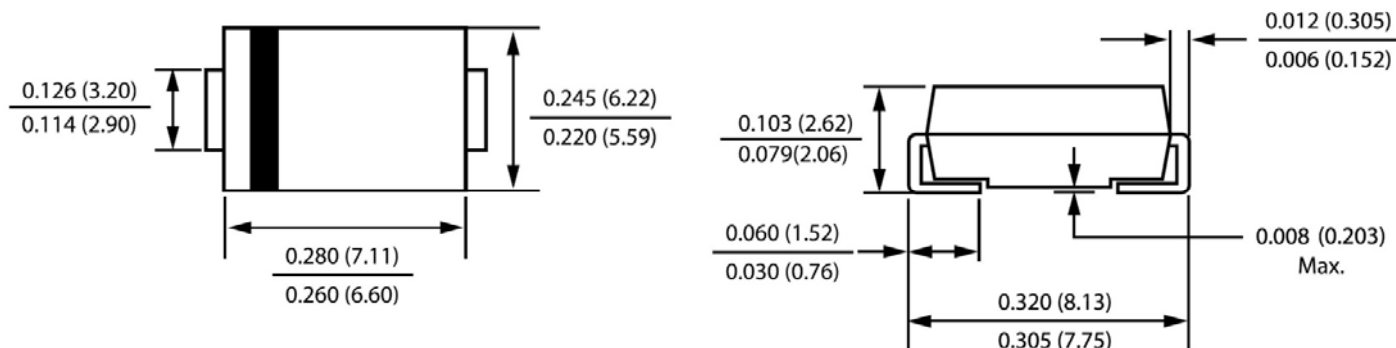


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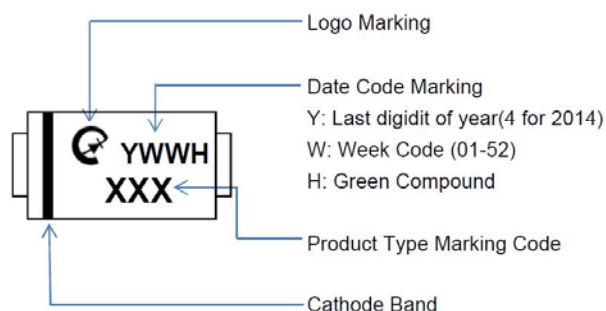
### Package Outline Dimensions



### DO-214AB(SMC)

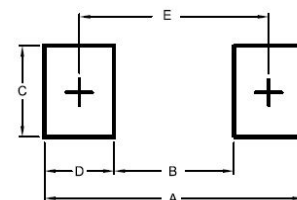
Dimensions in inches and (millimeters)

### Marking Information



### Suggested Pad Layout

| Dimension | Outline | SMC (DO-214AB) |
|-----------|---------|----------------|
| A         |         | 9.40           |
| B         |         | 4.40           |
| C         |         | 3.30           |
| D         |         | 2.50           |
| E         |         | 6.80           |



### Tap & Reel Specification

| ITEM                   | SYMBOL | SMC (mm)   |
|------------------------|--------|------------|
|                        |        | DO-214AB   |
| Carrier width          | A      | 6.3(max)   |
| Carrier length         | B      | 8.6(max)   |
| Carrier depth          | C      | 2.9(max)   |
| Sprocket hole          | d      | 1.50±0.1   |
| Reel outside diameter  | D      | 330±2.0    |
| Feed hole diameter     | D0     | 13.5±1     |
| Reel inner diameter    | D1     | 50 (min.)  |
| Sprocket hole position | E      | 1.75±0.1   |
| Punch hole position    | F      | 7.5±0.05   |
| Sprocket hole pitch    | P      | 8.0±0.1    |
| Sprocket hole pitch    | Po     | 4.0±0.1    |
| Embossment center      | P1     | 2.0±0.05   |
| Overall tape thickness | T      | 0.6 (max)  |
| Tape width             | W      | 16.0±0.3   |
| Reel width             | W2     | 22.4 (max) |
| Reel width             | W1     | 18.4 (max) |

