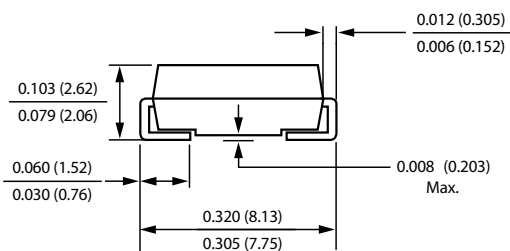
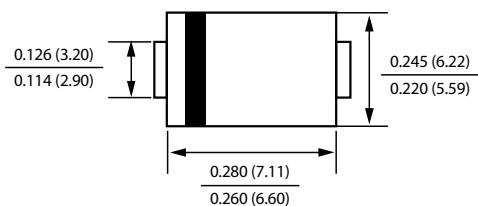




# SM2020C thru SM2020C



## Schottky Barrier Rectifiers



### DO-214AB(SMC)

Dimensions in inches and (millimeters)



#### Ordering Information

| Part Number | Remark       |
|-------------|--------------|
| SM20xxC     | General      |
| SM20xxC-H   | Halogen Free |
| SM20xxC-Q   | Automotive   |

#### PRIMARY CHARACTERISTICS

|                   |                            |
|-------------------|----------------------------|
| $I_F$             | 20A                        |
| $V_{RRM}$         | 20~200V                    |
| $I_{FSM}$         | 250A                       |
| $V_F$             | 0.60V, 0.75V, 0.85V, 0.92V |
| $T_J \text{ max}$ | 125°C, 150°C               |

#### 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

#### 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                               | SM20<br>20C | SM20<br>30C | SM20<br>40C | SM20<br>50C | SM20<br>60C | SM20<br>80C | SM20<br>100C | SM20<br>150C | SM20<br>200C | 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>                       | 20.0        |             |             |             |             |             |              |              |              | A    |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load | I <sub>FSM</sub>                     | 250.0       |             |             |             |             |             |              |              |              | A    |
| Maximum Instantaneous Forward Voltage<br>IF=20A @ 25°C                             | V <sub>F</sub>                       | 0.60        |             |             | 0.75        |             | 0.85        |              | 0.92         |              | V    |
| Maximum DC Reverse Current @ Tc=25°C<br>at Rated DC Blocking Voltage @ Tc=100°C    | I <sub>R</sub>                       | 0.5<br>10   |             |             |             |             | 0.2<br>5.0  |              |              | mA           |      |
| Typical Junction Capacitance(NOTE1)                                                | C <sub>j</sub>                       | 1,300       |             |             | 850         |             | 600         |              | 400          |              | pF   |
| Typical Thermal Resistance(NOTE2)                                                  | 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   |

#### NOTES:

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

2. Device mounted on FR-4 substrate, 1"×1", 2oz, single-sided, PC boards with 0.15"×0.26" copper pad.



## Schottky Barrier Rectifiers

FIG. 1-TYPICAL FORWARD CURRENT DERATING CURVE

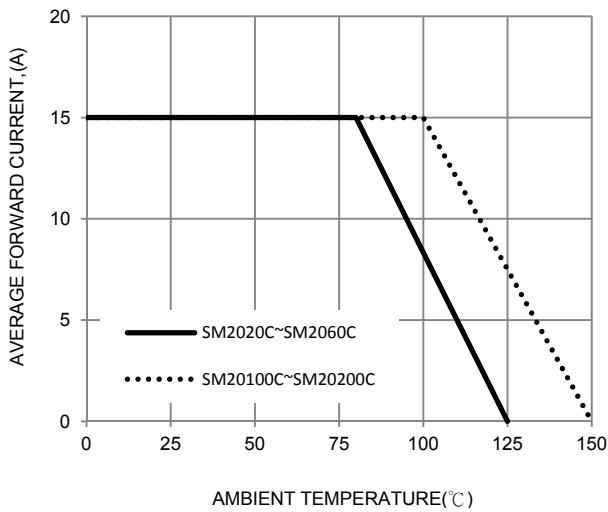


FIG. 2-TYPICAL FORWARD CHARACTERISTICS

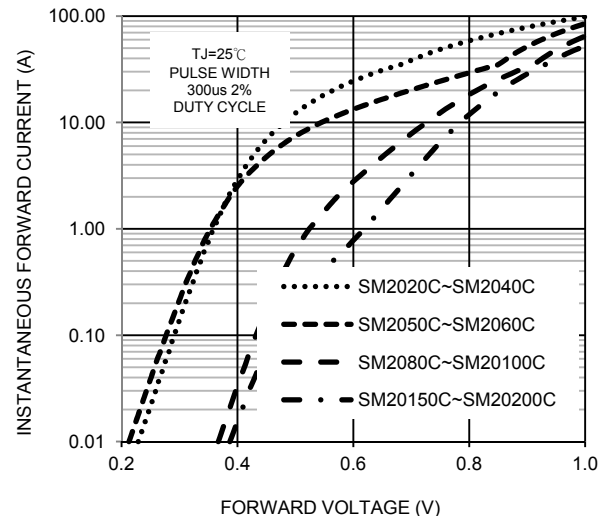


FIG. 3-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

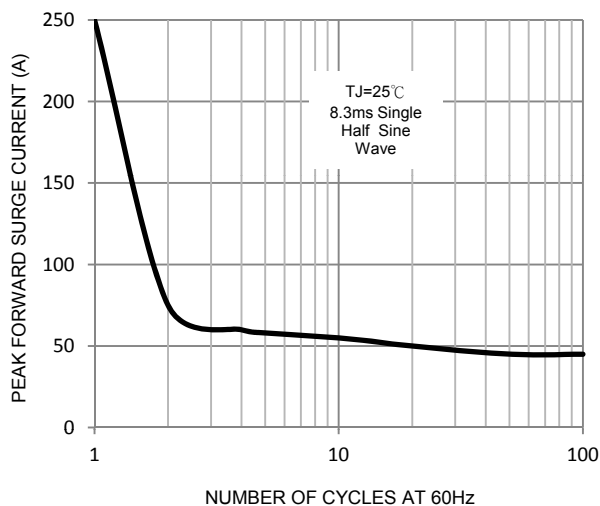


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

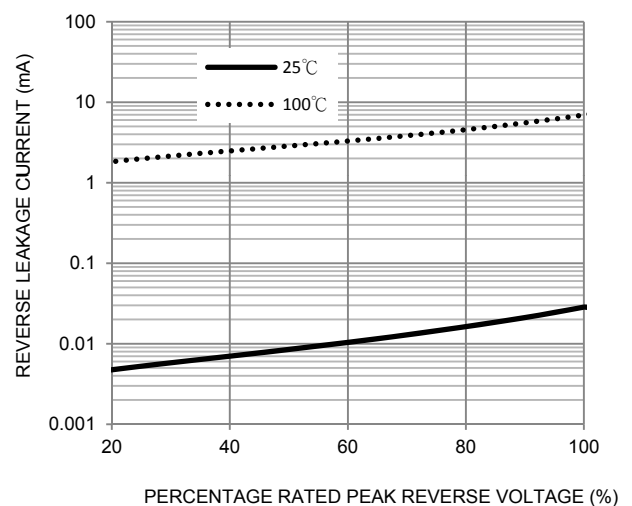


FIG. 5-TYPICAL JUNCTION CAPACITANCE

