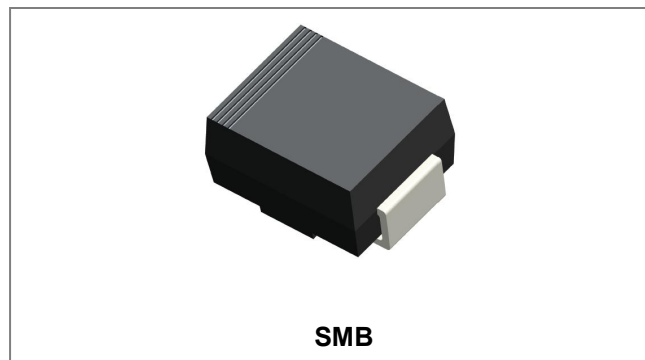


## SK220 SCHOTTKY RECTIFIER



### Features

- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- High Current Capability
- Low Power Loss, High Efficiency
- High Surge Current Capability
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Circuit Diagram



### Applications

- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection
- Disk drives
- Battery charging

### Maximum Ratings:

| Characteristics                                                                        | Symbol                          | Condition                                                          | Max. | Units |
|----------------------------------------------------------------------------------------|---------------------------------|--------------------------------------------------------------------|------|-------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | -                                                                  | 200  | V     |
| Average Rectified Forward Current                                                      | $I_F (AV)$                      | 50% duty cycle @ $T_C = 105^\circ\text{C}$ , rectangular wave form | 2    | A     |
| Peak One Cycle Non-Repetitive Surge Current                                            | $I_{FSM}$                       | 8.3ms, Half Sine pulse, $T_c = 25^\circ\text{C}$                   | 50   | A     |

### Electrical Characteristics:

| Characteristics        | Symbol   | Condition                                                                | Typ. | Max.   | Units            |
|------------------------|----------|--------------------------------------------------------------------------|------|--------|------------------|
| Forward Voltage Drop*  | $V_{F1}$ | @ 2A, Pulse, $T_A = 25^\circ\text{C}$                                    | 0.88 | 0.90   | V                |
| Reverse Current*       | $I_{R1}$ | @ $V_R = \text{rated } V_R$ , $T_A = 25^\circ\text{C}$                   | 0.05 | 1      | mA               |
|                        | $I_{R2}$ | @ $V_R = \text{rated } V_R$ , $T_A = 100^\circ\text{C}$                  | -    | 20     | mA               |
| Junction Capacitance   | $C_T$    | @ $V_R = 5\text{V}$ , $T_C = 25^\circ\text{C}$ , $f_{SIG} = 1\text{MHz}$ | 150  | 170    | pF               |
| Series Inductance      | $L_S$    | Measured lead to lead 5 mm from package body                             | 8.0  | -      | nH               |
| Voltage Rate of Change | $dv/dt$  | -                                                                        | -    | 10,000 | V/ $\mu\text{s}$ |

\* Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

## Thermal-Mechanical Specifications:

| Characteristics                                | Symbol          | Condition    | Specification | Units |
|------------------------------------------------|-----------------|--------------|---------------|-------|
| Junction Temperature                           | $T_J$           | -            | -55 to +150   | °C    |
| Storage Temperature                            | $T_{stg}$       | -            | -55 to +150   | °C    |
| Typical Thermal Resistance Junction to Lead    | $R_{\theta JL}$ | DC operation | 23            | °C/W  |
| Typical Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | DC operation | 88            | °C/W  |
| Approximate Weight                             | wt              | -            | 0.09          | g     |

## Ratings and Characteristics Curves

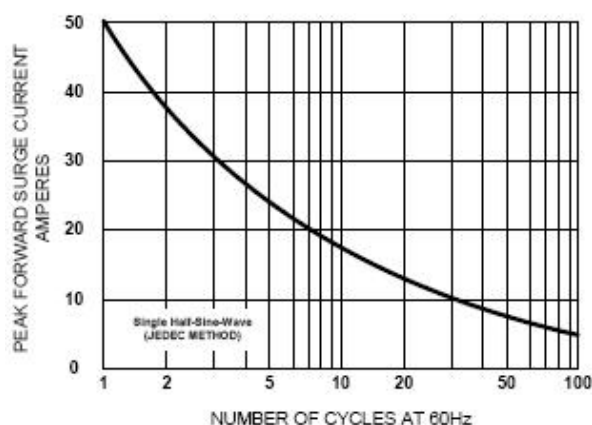


Figure 1. Maximum Non-repetitive Surge Current

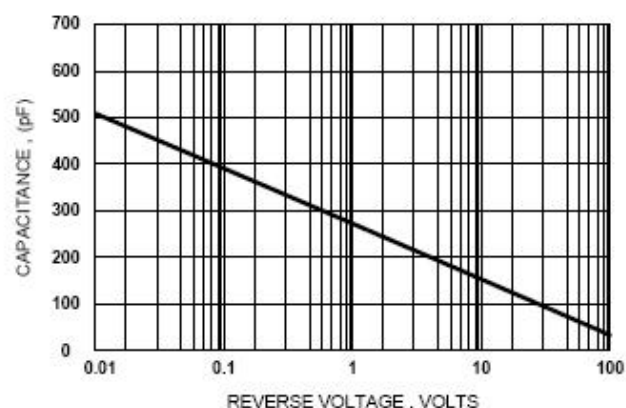


Figure 2. Typical Junction Capacitance

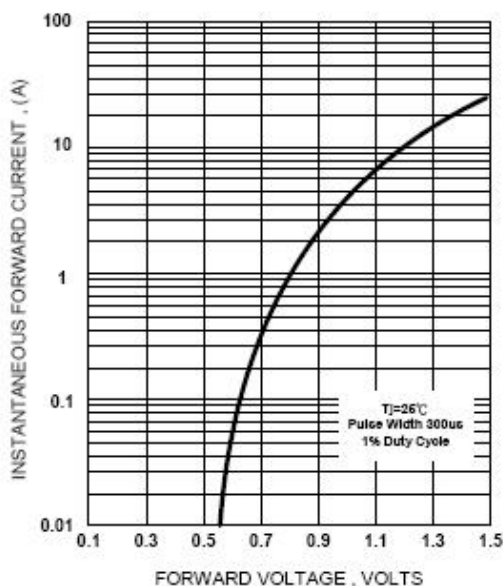


Figure 3. Typical Forward Characteristics

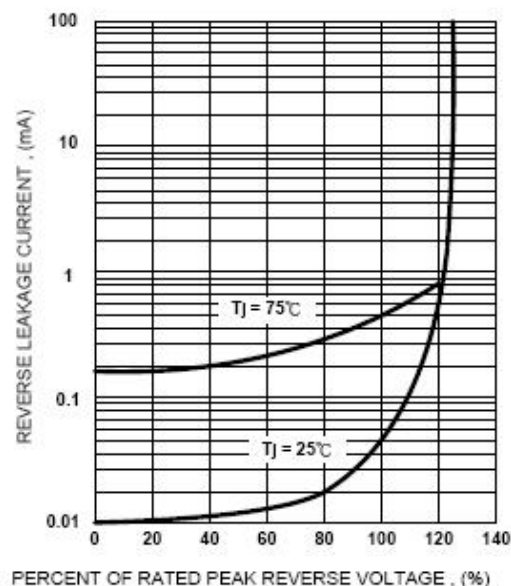
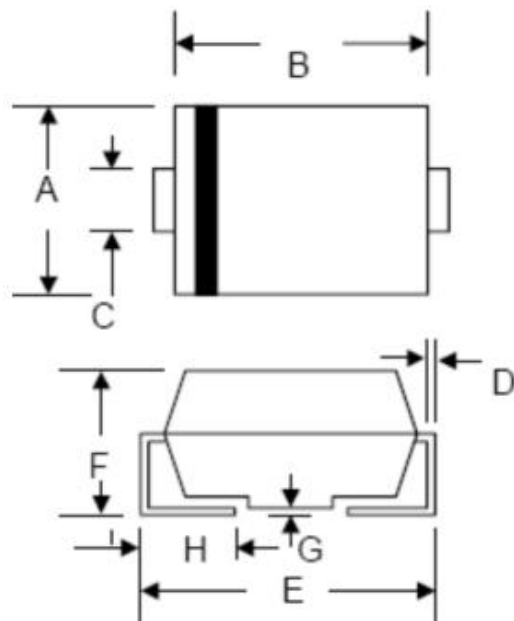


Figure 4. Typical Reverse Characteristics

## Mechanical Dimensions SMB



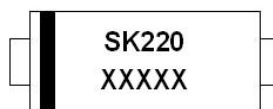
| SYMBOL | Millimeters |       | Inches |       |
|--------|-------------|-------|--------|-------|
|        | Min.        | Max.  | Min.   | Max.  |
| A      | 3.30        | 3.94  | 0.130  | 0.155 |
| B      | 4.06        | 4.70  | 0.160  | 0.185 |
| C      | 1.80        | 2.20  | 0.071  | 0.087 |
| D      | 0.152       | 0.305 | 0.006  | 0.012 |
| E      | 4.80        | 5.59  | 0.189  | 0.220 |
| F      | 2.10        | 2.60  | 0.083  | 0.102 |
| G      | 0.051       | 0.203 | 0.002  | 0.008 |
| H      | 0.76        | 1.52  | 0.030  | 0.060 |

## Ordering Information

| Device | Package       | Shipping       |
|--------|---------------|----------------|
| SK220  | SMB (Pb-Free) | 3000pcs / reel |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

## Marking Diagram

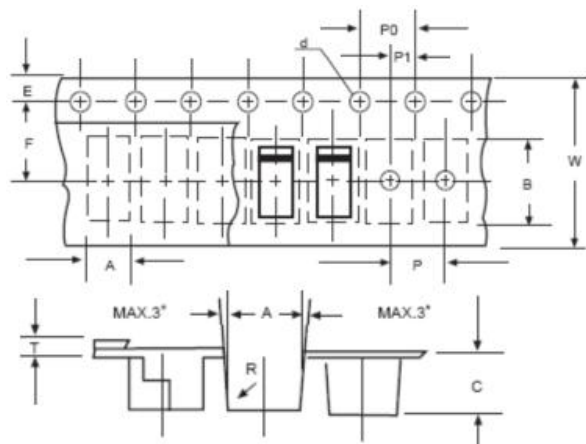


Where XXXXX is YYWWL

SK = Device Type  
2 = Forward Current (2A)  
20 = Reverse Voltage (200V)  
YY = Year  
WW = Week  
L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

## Carrier Tape Specification SMB



| SYMBOL | Millimeters |       |
|--------|-------------|-------|
|        | Min.        | Max.  |
| A      | 2.97        | 3.17  |
| B      | 5.70        | 5.90  |
| C      | 2.32        | 2.52  |
| d      | 1.40        | 1.60  |
| E      | 1.40        | 1.60  |
| F      | 5.60        | 5.70  |
| P      | 3.90        | 4.10  |
| P0     | 3.90        | 4.10  |
| P1     | 1.90        | 2.10  |
| T      | 0.25        | 0.35  |
| W      | 11.80       | 12.20 |

**Technical Data**  
**Data Sheet N0635, Rev. A**



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