



## SB520 - SB5100

SB520-SB5100

### Features

- Metal to silicon rectifier, majority carrier conduction.
- For use in low voltage, high frequency inverters free wheeling, and polarity protection applications.
- Low power loss, high efficiency.
- High current capability, low  $V_F$ .
- High surge capacity.
- Glass passivated



DO-201AD

COLOR BAND DENOTES CATHODE

## Schottky Rectifiers

### Absolute Maximum Ratings\*

$T_A = 25^\circ\text{C}$  unless otherwise noted

| Symbol      | Parameter                                                                          | Value       |     |     |     |     |     |      | Units            |
|-------------|------------------------------------------------------------------------------------|-------------|-----|-----|-----|-----|-----|------|------------------|
|             |                                                                                    | 520         | 530 | 540 | 550 | 560 | 580 | 5100 |                  |
| $V_{RRM}$   | Maximum Repetitive Reverse Voltage                                                 | 20          | 30  | 40  | 50  | 60  | 80  | 100  | V                |
| $I_{F(AV)}$ | Average Rectified Forward Current<br>.375 " lead length @ $T_A = 75^\circ\text{C}$ | 5.0         |     |     |     |     |     |      | A                |
| $I_{FSM}$   | Non-repetitive Peak Forward Surge Current<br>8.3 ms Single Half-Sine-Wave          | 150         |     |     |     |     |     |      | A                |
| $T_{stg}$   | Storage Temperature Range                                                          | -50 to +150 |     |     |     |     |     |      | $^\circ\text{C}$ |
| $T_J$       | Operating Junction Temperature                                                     | -50 to +150 |     |     |     |     |     |      | $^\circ\text{C}$ |

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

### Thermal Characteristics

| Symbol          | Parameter                               | Value | Units                     |
|-----------------|-----------------------------------------|-------|---------------------------|
| $P_D$           | Power Dissipation                       | 5.0   | W                         |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 25    | $^\circ\text{C}/\text{W}$ |

### Electrical Characteristics

$T_A = 25^\circ\text{C}$  unless otherwise noted

| Symbol         | Parameter                                                    | Device |     |     |      |     |      |      | Units |
|----------------|--------------------------------------------------------------|--------|-----|-----|------|-----|------|------|-------|
|                |                                                              | 520    | 530 | 540 | 550  | 560 | 580  | 5100 |       |
| V <sub>F</sub> | Forward Voltage @ 5.0 A                                      | 0.55   |     |     | 0.67 |     | 0.85 |      | V     |
| I <sub>R</sub> | Reverse Current @ rated V <sub>R</sub> T <sub>A</sub> = 25°C | 0.5    |     |     |      |     |      |      | mA    |
|                |                                                              |        |     |     |      |     |      |      |       |

# Typical Characteristics

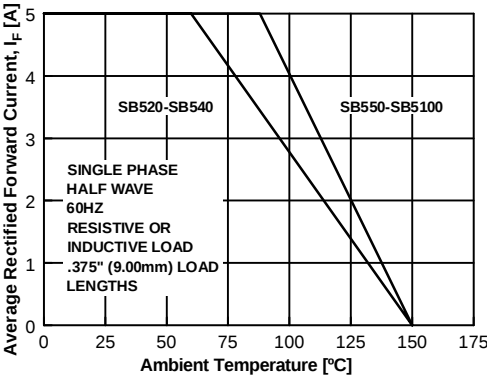


Figure 1. Forward Current Derating Curve

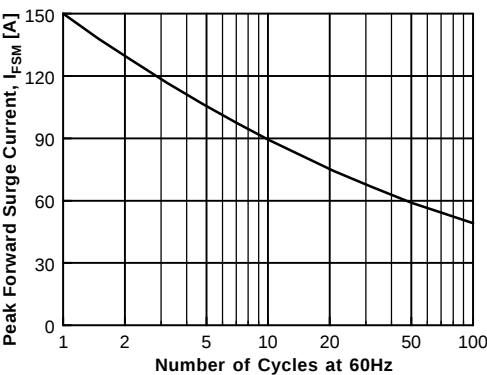


Figure 2. Non-Repetitive Surge Current

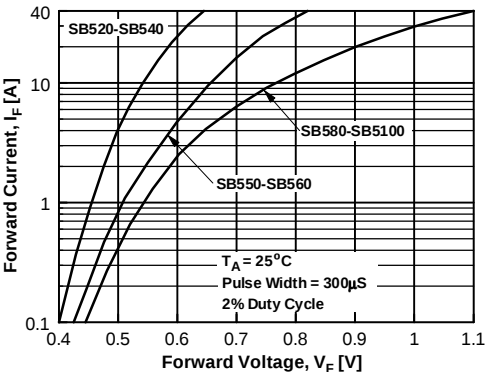


Figure 3. Forward Voltage Characteristics

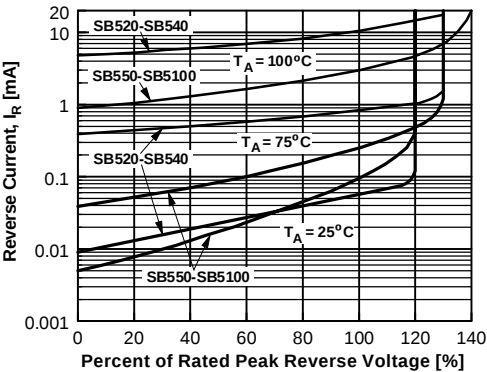


Figure 4. Reverse Current vs Reverse Voltage

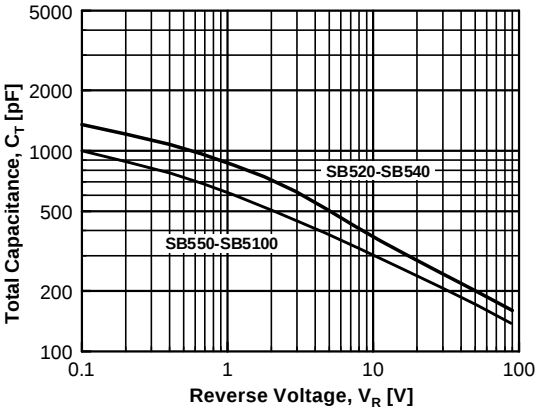


Figure 5. Total Capacitance

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| CROSSVOLT™           | GlobalOptoisolator™ | POP™                | SuperSOT™-3     |      |
| DenseTrench™         | GTO™                | Power247™           | SuperSOT™-6     |      |
| DOME™                | HiSeC™              | PowerTrench®        | SuperSOT™-8     |      |
| EcoSPARK™            | ISOPLANAR™          | QFET™               | SyncFET™        |      |
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