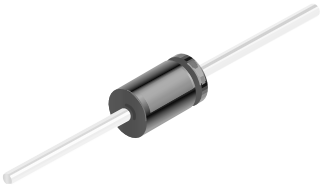
FAIRCHILD SEMICONDUCTOR®

# 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°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 .375 " lead length @ $T_A$ = 75°C | 5.0 | | | | | | | A |
| $I_{FSM}$ | Non-repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine-Wave | 150 | | | | | | | A |
| $T_{stg}$ | Storage Temperature Range | -50 to +150 | | | | | | | °C |
| $T_J$ | Operating Junction Temperature | -50 to +150 | | | | | | | °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 | °C/W |

### Electrical Characteristics

$T_A$ = 25°C unless otherwise noted

| Symbol | Parameter | | Device | | | | | | | Units |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 520 | 530 | 540 | 550 | 560 | 580 | 5100 | |
| $V_F$ | Forward Voltage @ 5.0 A | | 0.55 | | | 0.67 | | 0.85 | | V |
| $I_R$ | Reverse Current @ rated $V_R$ | $T_A$ = 25°C | 0.5 | | | | | | | mA |
| | | $T_A$ = 100°C | 50 | | | 25 | | | | mA |
| $C_T$ | Total Capacitance $V_R$ = 4.0 V, f = 1.0 MHz | | 500 | | | 380 | | | | pF |

## Typical Characteristics

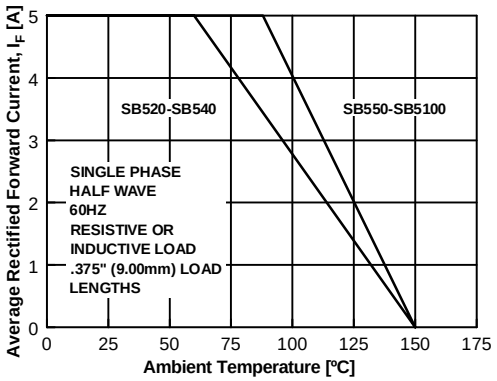



**Figure 1. Forward Current Derating Curve**

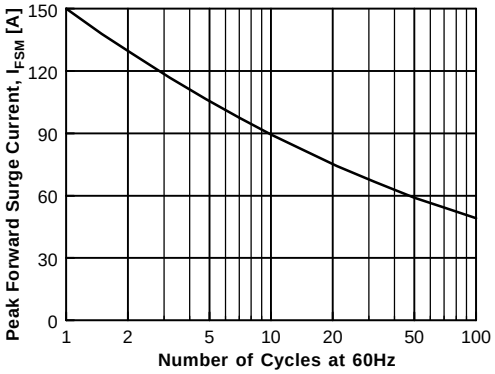



**Figure 2. Non-Repetitive Surge Current**

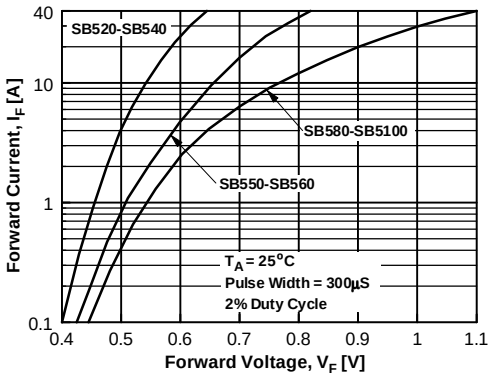



**Figure 3. Forward Voltage Characteristics**

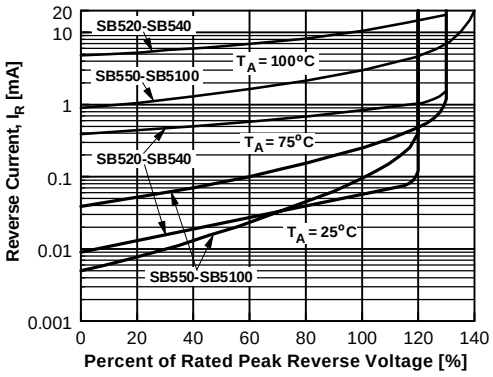



**Figure 4. Reverse Current vs Reverse Voltage**

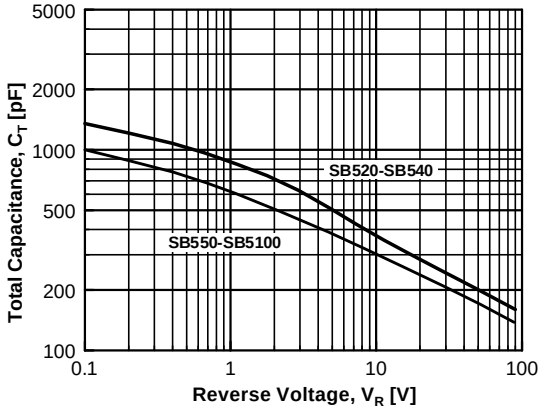



**Figure 5. Total Capacitance**

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| *CROSSVOLT*™ | GlobalOptoisolator™ | POP™ | SuperSOT™-3 | |
| DenseTrench™ | GTO™ | Power247™ | SuperSOT™-6 | |
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|---|---|---|
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