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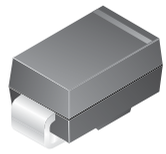
FAIRCHILD SEMICONDUCTOR®

June 2010

# S1A - S1M
# General Purpose Rectifiers

## Features

- Low profile package.
- Glass passivated junction.



**SMA/DO-214AC**

COLOR BAND DENOTES CATHODE

## Absolute Maximum Ratings* $T_A$ = 25°C unless otherwise noted

| Symbol | Parameter | Value | | | | | | | Units |
|---|---|---|---|---|---|---|---|---|---|
| | | 1A | 1B | 1D | 1G | 1J | 1K | 1M | |
| $V_{RRM}$ | Maximum Repetitive Reverse Voltage | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| $I_{F(AV)}$ | Average Rectified Forward Current @ $T_A$ = 100°C | 1.0 | | | | | | | A |
| $I_{FSM}$ | Non-Repetitive Peak Forward Surge Current 8.3ms Single Half-Sine-Wave | 30 | | | | | | | A |
| $T_{STG}$ | Storage Temperature Range | -55 to +150 | | | | | | | °C |
| $T_J$ | Operating Junction Temperature | -55 to +150 | | | | | | | °C |

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

## Thermal Characteristics

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $P_D$ | Power Dissipation | 1.4 | W |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient* | 85 | °C/W |

* Device mounted on FR-4 PCB 0.013 mm.

## Electrical Characteristics $T_A$ = 25°C unless otherwise noted

| Symbol | Parameter | Value | | | | | | | Units |
|---|---|---|---|---|---|---|---|---|---|
| | | 1A | 1B | 1D | 1G | 1J | 1K | 1M | |
| $V_F$ | Forward Voltage @ 1.0A | 1.1 | | | | | | | V |
| $t_{rr}$ | Reverse Recovery Time $I_F$=0.5A, $I_R$=1.0A, $I_{rr}$=0.25A | 1.8 | | | | | | | µs |
| $I_R$ | Reverse Current @ rated $V_R$ $T_A$=25°C<br>$T_A$=125°C | 1.0<br>50 | | | | | | | µA<br>µA |
| $C_T$ | Total Capacitance $V_R$=4.0V, f=1.0MHz | 12 | | | | | | | pF |

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## Typical Performance Characteristics

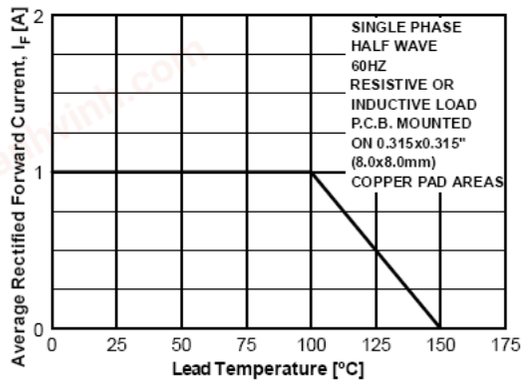



**Figure 1. Forward Current Derating Curve**

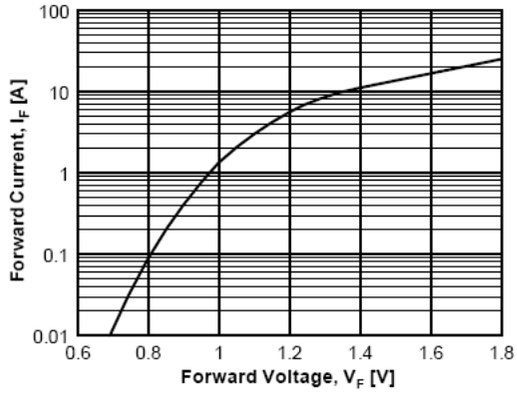



**Figure 2. Forward Voltage Characteristics**

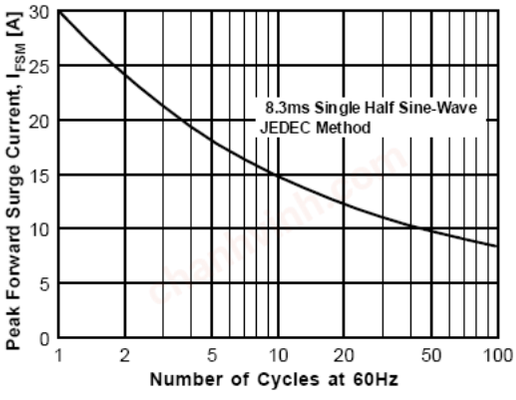



**Figure 3. Non-Repetitive Surge Current**

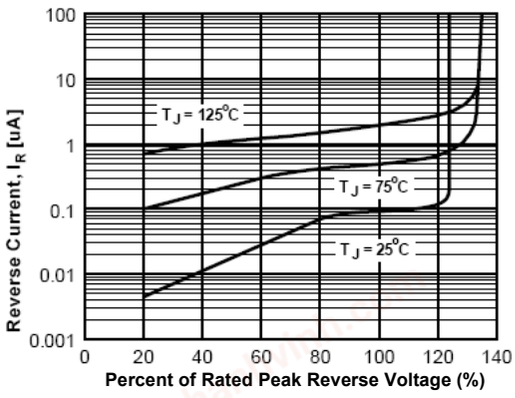



**Figure 4. Reverse Current vs Reverse Voltage**

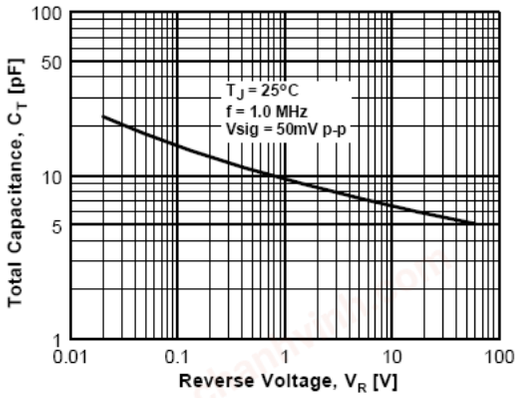



**Figure 5. Total Capacitance**

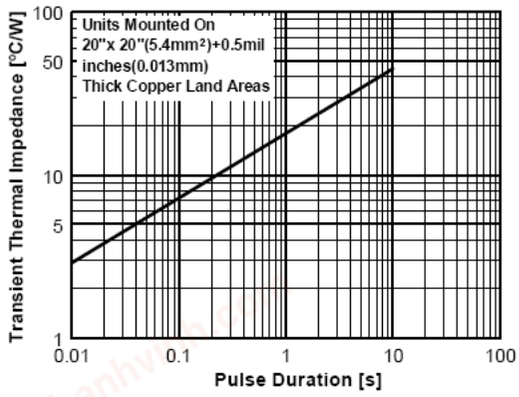



**Figure 6. Thermal Impedance Characteristics**

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|---|---|---|
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