## BAV99W

## Silicon Epitaxial Planar Switching Diode



Absolute Maximum Ratings $\left(\mathrm{T}_{\mathrm{a}}=25^{\circ} \mathrm{C}\right.$ )

| Parameter | Symbol | Value | Unit |
| :---: | :---: | :---: | :---: |
| Repetitive Peak Reverse Voltage | $V_{\text {RRM }}$ | 85 | V |
| Reverse Voltage | $\mathrm{V}_{\mathrm{R}}$ | 75 | V |
| Continuous Forward Current $\begin{array}{ll}\text { Single Diode Load } \\ \text { Double Diode Load }\end{array}$ | $\mathrm{I}_{\mathrm{F}}$ | $\begin{aligned} & 150 \\ & 130 \\ & \hline \end{aligned}$ | mA |
| Repetitive Peak Forward Current | $\mathrm{I}_{\text {FRM }}$ | 500 | mA |
| Non-Repetitive Peak Forward Surge Current at $\mathrm{t}=1 \mu \mathrm{~s}$ <br> at $\mathrm{t}=1 \mathrm{~ms}$ <br> at $\mathrm{t}=1 \mathrm{~s}$ | $\mathrm{I}_{\text {FSM }}$ | $\begin{gathered} \hline 4 \\ 1 \\ 0.5 \end{gathered}$ | A |
| Total Power Dissipation | $\mathrm{P}_{\text {tot }}$ | 200 | mW |
| Thermal Resistance from Junction to Ambient | $\mathrm{R}_{\text {өJA }}$ | 625 | ${ }^{\circ} \mathrm{C} / \mathrm{W}$ |
| Junction Temperature | $\mathrm{T}_{\mathrm{j}}$ | 150 | ${ }^{\circ} \mathrm{C}$ |
| Storage Temperature Range | $\mathrm{T}_{\text {stg }}$ | -55 to +150 | ${ }^{\circ} \mathrm{C}$ |

Characteristics at $\mathrm{T}_{\mathrm{a}}=25^{\circ} \mathrm{C}$

| Parameter | Symbol | Max. | Unit |
| :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { Forward Voltage } \\ & \text { at } \mathrm{I}_{\mathrm{F}}=1 \mathrm{~mA} \\ & \text { at } \mathrm{I}_{\mathrm{F}}=10 \mathrm{~mA} \\ & \text { at } \mathrm{I}_{\mathrm{F}}=50 \mathrm{~mA} \\ & \text { at } \mathrm{I}_{F}=150 \mathrm{~mA} \end{aligned}$ | $V_{F}$ | $\begin{gathered} 0.715 \\ 0.855 \\ 1 \\ 1.25 \end{gathered}$ | V |
| $\begin{aligned} & \text { Reverse Current } \\ & \text { at } \mathrm{V}_{\mathrm{R}}=25 \mathrm{~V} \\ & \text { at } \mathrm{V}_{\mathrm{R}}=75 \mathrm{~V} \\ & \text { at } \mathrm{V}_{\mathrm{R}}=25 \mathrm{~V}, \mathrm{~T}_{\mathrm{j}}=150^{\circ} \mathrm{C} \\ & \text { at } \mathrm{V}_{\mathrm{R}}=75 \mathrm{~V}, \mathrm{~T}_{\mathrm{j}}=150^{\circ} \mathrm{C} \end{aligned}$ | $I_{\text {R }}$ | $\begin{gathered} 30 \\ 1 \\ 30 \\ 50 \end{gathered}$ | nA <br> $\mu \mathrm{A}$ <br> $\mu \mathrm{A}$ <br> $\mu \mathrm{A}$ |
| Diode Capacitance at $V_{R}=0, f=1 \mathrm{MHz}$ | $\mathrm{C}_{\text {d }}$ | 1.5 | pF |
| Reverse Recovery Time at $I_{F}=I_{R}=10 \mathrm{~mA}, \mathrm{I}_{\mathrm{rr}}=0.1 \mathrm{X} \mathrm{I}_{\mathrm{R}}, \mathrm{R}_{\mathrm{L}}=100 \Omega$ | $\mathrm{t}_{\text {r }}$ | 4 | ns |



Device mounted on an FR4 printed-circuit board.
Maximum permissible continuous forward current as a function of ambient temperature.

(1) $\mathrm{T}_{\mathrm{j}}=150^{\circ} \mathrm{C}$; typical values.
(2) $\mathrm{T}_{\mathrm{j}}=25^{\circ} \mathrm{C}$; typical values.
(3) $\mathrm{T}_{\mathrm{j}}=25^{\circ} \mathrm{C}$; maximum values.

Forward current as a function of forward voltage.


Based on square wave currents.
$\mathrm{T}_{\mathrm{j}}=25^{\circ} \mathrm{C}$ prior to surge.
Maximum permissible non-repetitive peak forward current as a function of pulse duration.


Reverse current as a function of junction temperature

$\mathrm{f}=1 \mathrm{MHz} ; \mathrm{T}_{\mathrm{j}}=25^{\circ} \mathrm{C}$.
Diode capacitance as a function of reverse voltage; typical values.

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