QUAD SURFACE MOUNT SWITCHING DIODE ARRAY

## Features

- Fast Switching Speed
- Ultra-Small Surface Mount Package
- For General Purpose Switching Applications
- High Conductance
- Two "BAV99" Circuits In One Package


## Mechanical Data

- Case: SOT-363, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Marking: KJG
- Weight: 0.006 grams (approx.)
- Case Material - UL Flammability Rating Classification 94V-0

| SOT-363 |  |  |
| :---: | :---: | :---: |
| Dim | Min | Max |
| A | 0.10 | 0.30 |
| B | 1.15 | 1.35 |
| C | 2.00 | 2.20 |
| D | 0.65 Nominal |  |
| E | 0.30 | 0.40 |
| G | 1.80 | 2.20 |
| H | 1.80 | 2.20 |
| J | - | 0.10 |
| K | 0.90 | 1.00 |
| L | 0.25 | 0.40 |
| M | 0.10 | 0.25 |
| All Dimensions in $\mathbf{~ m m}$ |  |  |

Maximum Ratings @ $\mathrm{T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$ unless otherwise specified

| Characteristic | Symbol | BAV99DW | Unit |
| :---: | :---: | :---: | :---: |
| Non-Repetitive Peak Reverse Voltage | VRM | 100 | V |
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | VRM $V_{\text {RWM }}$ $V_{R}$ | 75 | V |
| RMS Reverse Voltage | $\mathrm{V}_{\mathrm{R} \text { (RMS) }}$ | 53 | V |
| Forward Continuous Current | IFM | 215 | mA |
| Non-Repetitive Peak Forward Surge Current  <br> $@ t$ <br> t <br> t <br> t <br> @ <br> t$=1.0 \mu \mathrm{~ms}$  <br>   | IFSM | $\begin{aligned} & 2.0 \\ & 1.0 \\ & 0.5 \end{aligned}$ | A |
| Power Dissipation (Note 1) | $\mathrm{P}_{\mathrm{d}}$ | 200 | mW |
| Thermal Resistance Junction to Ambient Air (Note 1) | $\mathrm{R}_{\text {өJA }}$ | 625 | ${ }^{\circ} \mathrm{C} / \mathrm{W}$ |
| Power Dissipation (Note 2) | $\mathrm{Pd}_{\mathrm{d}}$ | 300 | mW |
| Thermal Resistance Junction to Ambient Air (Note 2) | $\mathrm{R}_{\text {өJA }}$ | 417 | ${ }^{\circ} \mathrm{C} / \mathrm{W}$ |
| Operating and Storage Temperature Range | $\mathrm{T}_{\mathrm{j}}$, $\mathrm{T}_{\text {STG }}$ | -65 to +150 | ${ }^{\circ} \mathrm{C}$ |

Electrical Characteristics @ $\mathrm{T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$ unless otherwise specified

| Characteristic | Symbol | Min | Max | Unit | Test Condition |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Maximum Forward Voltage | $V_{\text {FM }}$ | - | $\begin{gathered} 0.715 \\ 0.855 \\ 1.0 \\ 1.25 \end{gathered}$ | V | $\begin{aligned} & \mathrm{I}_{\mathrm{F}}=1.0 \mathrm{~mA} \\ & \mathrm{I}_{\mathrm{F}}=10 \mathrm{~mA} \\ & \mathrm{I}_{\mathrm{F}}=50 \mathrm{~mA} \\ & \mathrm{I}_{\mathrm{F}}=150 \mathrm{~mA} \end{aligned}$ |
| Maximum Peak Reverse Current | IRM | - | $\begin{aligned} & 2.5 \\ & 50 \\ & 30 \\ & 25 \end{aligned}$ | $\begin{aligned} & \mu \mathrm{A} \\ & \mu \mathrm{~A} \\ & \mu \mathrm{~A} \\ & \mathrm{nA} \end{aligned}$ | $\begin{aligned} & V_{R}=75 \mathrm{~V} \\ & V_{R}=75 \mathrm{~V}, T_{j}=150^{\circ} \mathrm{C} \\ & V_{R}=25 \mathrm{~V}, T_{j}=150^{\circ} \mathrm{C} \\ & V_{R}=20 \mathrm{~V} \\ & \hline \end{aligned}$ |
| Junction Capacitance | $\mathrm{C}_{\mathrm{j}}$ | - | 2.0 | pF | $\mathrm{V}_{\mathrm{R}}=0, \mathrm{f}=1.0 \mathrm{MHz}$ |
| Reverse Recovery Time | $\mathrm{trr}_{\text {r }}$ | - | 4.0 | ns | $\begin{aligned} & \mathrm{I}_{\mathrm{F}}=\mathrm{I}_{\mathrm{R}}=10 \mathrm{~mA}, \\ & \mathrm{I}_{\mathrm{rr}}=0.1 \times \mathrm{I}_{\mathrm{R}}, \mathrm{R}_{\mathrm{L}}=100 \Omega \end{aligned}$ |

Notes: 1. Device mounted on FR-4 PCB, 1 inch $\times 0.85$ inch $\times 0.062$ inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
2. Device mounted on Alumina PCB, 0.4 inch $\times 0.3$ inch $\times 0.024$ inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.

Ordering Information (Note 3)

| Device | Packaging | Shipping |
| :---: | :---: | :---: |
| BAV99DW-7 | SOT-363 | $3000 /$ Tape \& Reel |

Notes: 3. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

## Marking Information



KJG = Product Type Marking Code
YM = Date Code Marking
$Y=$ Year ex: $N=2002$
M = Month ex: 9 = September

Date Code Key

| Year | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Code | J | K | L | M | N | O | P |


| Month | Jan | Feb | March | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | O | N | D |



Fig. 1 Forward Characteristics


Fig. 3 Typical Junction Capacitance vs Reverse Voltage

