Schottky Barrier Diode
RB578VAM100

●Application
General rectification

●Features
1) Small power type (TUMD2M)
2) Super low $I_R$
3) High reliability

●Construction
Silicon epitaxial planar

●Dimensions (Unit : mm)

●Land size figure (Unit : mm)

●Structure

●Taping specifications (Unit : mm)

●Absolute maximum ratings (Tc= 25°C)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Limits</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverse voltage (repetitive)</td>
<td>$V_{RM}$</td>
<td>100</td>
<td>V</td>
</tr>
<tr>
<td>Reverse voltage (DC)</td>
<td>$V_R$</td>
<td>100</td>
<td>V</td>
</tr>
<tr>
<td>Average rectified forward current</td>
<td>$I_o$</td>
<td>0.7</td>
<td>A</td>
</tr>
<tr>
<td>Forward current surge peak (60Hz・1cyc)</td>
<td>$I_{FSM}$</td>
<td>5</td>
<td>A</td>
</tr>
<tr>
<td>Junction temperature</td>
<td>$T_j$</td>
<td>150</td>
<td>°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>$T_{stg}$</td>
<td>-40 to +150</td>
<td>°C</td>
</tr>
</tbody>
</table>

●Electrical characteristics (Tj = 25°C)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward voltage</td>
<td>$V_F$</td>
<td>-</td>
<td>-</td>
<td>0.85</td>
<td>V</td>
<td>$I_F=0.7A$</td>
</tr>
<tr>
<td>Reverse current</td>
<td>$I_R$</td>
<td>-</td>
<td>-</td>
<td>200</td>
<td>nA</td>
<td>$V_R=100V$</td>
</tr>
</tbody>
</table>
Electrical characteristic curves

- Forward Current vs. Forward Voltage
- Reverse Current vs. Reverse Voltage
- Capacitance Between Terminals vs. Reverse Voltage
- Forward Voltage Dispersion Map

Parameters:
- Frequency: f = 1MHz
- Forward Current: I_F = 0.7A
- Number of devices: n = 30pcs
- AVE: 748.2mV

Equations:
- Forward Voltage: V_F\(\text{mV}\)
- Reverse Voltage: V_R\(\text{mV}\)
- Capacitance: C_t\(\text{pF}\)
● Electrical characteristic curves

![Graph of reverse current dispersion map with a peak of 15.1 nA at 25°C, V_R=100V, n=30pcs.]

![Graph of capacitance between terminals dispersion map with an average of 60.8 pF at 25°C, f=1MHz, V_R=0V, n=10pcs.]

![Graph of peak surge forward current dispersion map with an average of 17.0 A at 25°C, I_F=0.1A, I_R=0.1A, I_rr=0.1*I_R, n=10pcs.]

![Graph of reverse recovery time dispersion map with an average of 8.3 ns at 25°C, I_FSM=0.1A, I_R=0.1A, I_rr=0.1*I_R, n=20pcs.]

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●Electrical characteristic curves

![Electrical characteristic curves diagram]

- **Peak surge forward current: Iₚₛₚ(A)**
  - Number of cycles: Iₚₛₚ-cycle characteristics
  - Time: t(ms)
- **Forward power dispersion: Pₒ(W)**
  - Average rectified forward current: Iₒ(A)
  - Time: t(s)
  - Thermal impedance: Rth(°C/W)

**Specifications**
- IM=100mA, Iₕ=9A
- D = 1/2
- Sin(θ=180)
- DC
- 1ms 300µs
- 1cycle
- 8.3ms
●Electrical characteristic curves

**Reverse Power Dispersion (P_R) vs Reverse Voltage (V_R)**

- Graph showing the relationship between reverse power dispersion (P_R) and reverse voltage (V_R) with different duty cycles (D = 1/2).
  - **D = 1/2**
  - **D = 1/2**

**Average Rectified Forward Current (Io) vs Ambient Temperature (Ta)**

- Graph showing the relationship between average rectified forward current (Io) and ambient temperature (Ta) with different duty cycles (D = 1/2).
  - **D = 1/2**

**Average Rectified Forward Current (Io) vs Case Temperature (Tc)**

- Graph showing the relationship between average rectified forward current (Io) and case temperature (Tc) with different duty cycles (D = 1/2).
  - **D = 1/2**

**Electrostatic Discharge Test (ESD) Map**

- ESD dispersion map with dispersion values for different capacitance (C) and resistor (R) combinations.
  - **C=100pF, R=1.5kΩ**
  - **C=200pF, R=0Ω**

**DERATING CURVE**

- DERATING for reverse power dispersion (P_R) with reverse voltage (V_R) and average rectified forward current (Io).
  - **V_R**, **P_R**, **T_R**, **D**, **V_0**
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<table>
<thead>
<tr>
<th>JAPAN</th>
<th>USA</th>
<th>EU</th>
<th>CHINA</th>
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<td>CLASS Ⅲ</td>
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<td>CLASS Ⅲ</td>
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</tbody>
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[h] Use of the Products in places subject to dew condensation

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6. In particular, if a transient load (a large amount of load applied in a short period of time, such as pulse. is applied, confirmation of performance characteristics after on-board mounting is strongly recommended. Avoid applying power exceeding normal rated power; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.

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8. Confirm that operation temperature is within the specified range described in the product specification.

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2. In principle, the reflow soldering method must be used on a surface-mount products, the flow soldering method must be used on a through hole mount products. If the flow soldering method is preferred on a surface-mount products, please consult with the ROHM representative in advance.

For details, please refer to ROHM Mounting specification
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1. Product performance and soldered connections may deteriorate if the Products are stored in the places where:
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   [b] the temperature or humidity exceeds those recommended by ROHM
   [c] the Products are exposed to direct sunshine or condensation
   [d] the Products are exposed to high Electrostatic

2. Even under ROHM recommended storage condition, solderability of products out of recommended storage time period may be degraded. It is strongly recommended to confirm solderability before using Products of which storage time is exceeding the recommended storage time period.

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4. Use Products within the specified time after opening a humidity barrier bag. Baking is required before using Products of which storage time is exceeding the recommended storage time period.

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