Description

The SJPW-T4 is a 40 V, 5.0 A Schottky diode that has the improved characteristics of $V_F$ and $I_R$. These characteristics realize the improvement of power supply efficiency and the high frequency system.

Features

- $V_{RSM} =$ 40 V
- $I_{F(AV)} =$ 5.0 A
- $V_F (I_F = 5.0 \, A) =$ 0.50 V typ.
- Bare Lead Frame: Pb-free (RoHS Compliant)
- Flammability: Equivalent to UL94V-0

Applications

High speed switching applications as follows:

- DC-DC Converter
- Adapter

Package

SJP
### Absolute Maximum Ratings

Unless otherwise specified, \( T_A = 25 \, ^\circ\text{C} \).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Conditions</th>
<th>Rating</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonrepetitive Peak Reverse Voltage</td>
<td>( V_{RSM} )</td>
<td></td>
<td>40</td>
<td>V</td>
</tr>
<tr>
<td>Repetitive Peak Reverse Voltage</td>
<td>( V_{RM} )</td>
<td></td>
<td>40</td>
<td>V</td>
</tr>
<tr>
<td>Average Forward Current</td>
<td>( I_{F(\text{AV})} )</td>
<td>See Figure 1 and Figure 2</td>
<td>5.0</td>
<td>A</td>
</tr>
<tr>
<td>Surge Forward Current</td>
<td>( I_{FSM} )</td>
<td>Half cycle sine wave, positive side, 10 ms, 1 shot</td>
<td>80</td>
<td>A</td>
</tr>
<tr>
<td>( \text{I}_t \text{ Limiting Value} )</td>
<td>( \text{I}_t )</td>
<td>1 ms ( \leq t \leq 10 \text{ms} )</td>
<td>32</td>
<td>A(^2\text{s})</td>
</tr>
<tr>
<td>Junction Temperature</td>
<td>( T_J )</td>
<td></td>
<td>−40 to 150</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>( T_{STG} )</td>
<td></td>
<td>−40 to 150</td>
<td>°C</td>
</tr>
</tbody>
</table>

### Electrical Characteristics

Unless otherwise specified, \( T_A = 25 \, ^\circ\text{C} \).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Conditions</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward Voltage Drop</td>
<td>( V_F )</td>
<td>( I_F = 5.0 , \text{A} )</td>
<td>—</td>
<td>0.50</td>
<td>0.55</td>
<td>V</td>
</tr>
<tr>
<td>Reverse Leakage Current</td>
<td>( I_R )</td>
<td>( V_R = V_{RM} )</td>
<td>—</td>
<td>—</td>
<td>500</td>
<td>µA</td>
</tr>
<tr>
<td>Reverse Leakage Current under High Temperature</td>
<td>( H \cdot I_R )</td>
<td>( V_R = V_{RM}, T_J = 150 , ^\circ\text{C} )</td>
<td>—</td>
<td>—</td>
<td>150</td>
<td>mA</td>
</tr>
<tr>
<td>Thermal Resistance(^{(1)})</td>
<td>( R_{th(J-L)} )</td>
<td></td>
<td>—</td>
<td>—</td>
<td>20</td>
<td>°C/W</td>
</tr>
</tbody>
</table>

\(^{(1)}\) \( R_{th(J-L)} \) is thermal resistance between junction and lead.
Rating and Characteristic Curves

Figure 1. Typical Characteristics: $I_{F(AV)}$ vs. $T_C$ ($V_R = 0$ V)

Figure 2. Typical Characteristics: $I_{F(AV)}$ vs. $T_C$ ($V_R = 40$ V)

Figure 3. Typical Characteristics: $I_F$ vs. $V_F$

Figure 4. Typical Characteristics: $I_R$ vs. $V_R$
Physical Dimensions

- **SJP Package**

![Diagram of SJP Package]

**NOTES:**
- Dimensions in millimeters
- Bare lead frame: Pb-free (RoHS compliant)
- When soldering the products, it is required to minimize the working time within the following limits:
  - Flow: 260 ± 5 °C / 10 ± 1 s, 2 times
  - Soldering Iron: 380 ± 10 °C / 3.5 ± 0.5 s, 1 time (Soldering should be at a distance of at least 1.5 mm from the body of the products.)
- MSL: JEDEC LEVEL1

- **SJP Land Pattern Example**

![Diagram of SJP Land Pattern Example]

**NOTE:**
- Dimensions in millimeters
Marking Diagram

YMDD

- Cathode Mark
- Specific Device Code (see Table 1)

Lot Number:
- Y is the last digit of the year of manufacture (0 to 9)
- M is the month of the year (1 to 9, O, N, or D)
- DD is the day of the month (01 to 31)

Table 1. Specific Device Code

<table>
<thead>
<tr>
<th>Specific Device Code</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT4</td>
<td>SJPW-T4</td>
</tr>
</tbody>
</table>
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