**$V_{RSM}$ = 30 V, $I_{F(AV)}$ = 1.0 A**
**Schottky Diode**

# SJPA-D3

**Data Sheet**

## Description

The SJPA-D3 is a 30 V, 1.0 A Schottky diode with allowing improvements in $V_F$ characteristic.

The characteristic feature contributes to improving power supply efficiency and to enabling high-frequency systems.

## Features

- $V_{RSM}$ ---------- 30 V
- $I_{F(AV)}$ ---------- 1.0 A
- $V_F$ ($I_F$ = 1.0 A) ---------- 0.32 V typ.
- Bare Lead Frame: Pb-free (RoHS Compliant)
- Flammability: Equivalent to UL94V-0

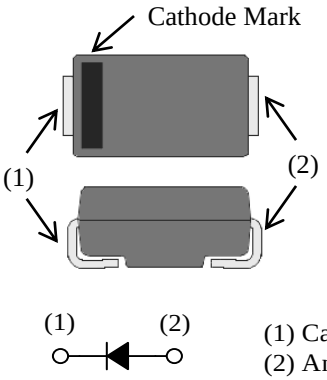
## Applications

High speed switching applications as follows:

- DC-DC Converter
- Adapter

## Package

SJP







(1) Cathode
(2) Anode

Not to scale

## Absolute Maximum Ratings

Unless otherwise specified, $T_A$ = 25 °C.

| Parameter | Symbol | Conditions | Rating | Unit |
|---|---|---|---|---|
| Nonrepetitive Peak Reverse Voltage | $V_{RSM}$ | | 30 | V |
| Repetitive Peak Reverse Voltage | $V_{RM}$ | | 30 | V |
| Average Forward Current | $I_{F(AV)}$ | See Figure 2 and Figure 3 | 1.0 | A |
| Surge Forward Current | $I_{FSM}$ | Half cycle sine wave, positive side, 10 ms, 1 shot | 30 | A |
| $I^2t$ Limiting Value | $I^2t$ | 1 ms ≤ t ≤ 10ms | 45 | $A^2s$ |
| Junction Temperature | $T_J$ | | −40 to 125 | °C |
| Storage Temperature | $T_{STG}$ | | −40 to 125 | °C |

## Electrical Characteristics

Unless otherwise specified, $T_A$ = 25 °C.

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Forward Voltage Drop | $V_F$ | $I_F$ = 1.0 A | — | 0.32 | 0.36 | V |
| Reverse Leakage Current[1] | $I_R$ | $V_R = V_{RM}$ | — | — | 1.5 | mA |
| Reverse Leakage Current under High Temperature | $H \cdot I_R$ | $V_R = V_{RM}$, $T_J$ = 100 °C | — | — | 70 | mA |
| Thermal Resistance[2] | $R_{th(J-L)}$ | | — | — | 20 | °C/W |

## Mechanical Characteristics

| Parameter | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Package Weight | | — | 0.072 | — | g |

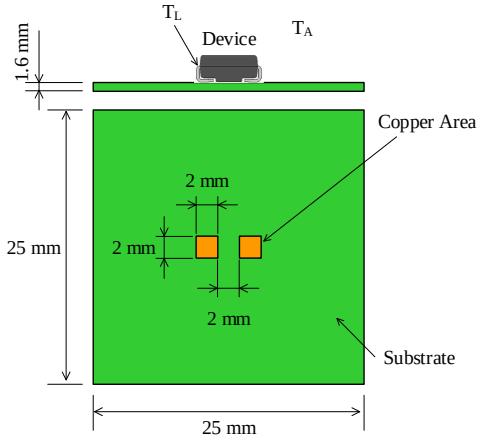



Figure 1. Lead Temperature Measurement Conditions

[1] There is a trade-off relationship between $V_F$ and $I_R$. This product is designed to improve $V_F$ characteristic. When using the product, be sure to check the temperature increase caused by $I_R$ loss.

[2] $R_{th\ (J-L)}$ is thermal resistance between junction and lead. Lead temperature ($T_L$) is measured near the root of pin (see Figure 1).

## Derating Curves

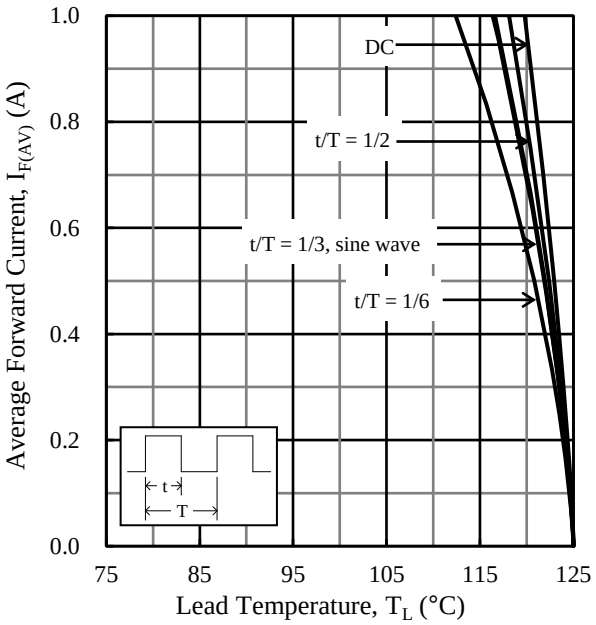



Figure 2. $I_{F(AV)}$ vs. $T_L$ ($T_J$ = 125 °C, $V_R$ = 0 V)

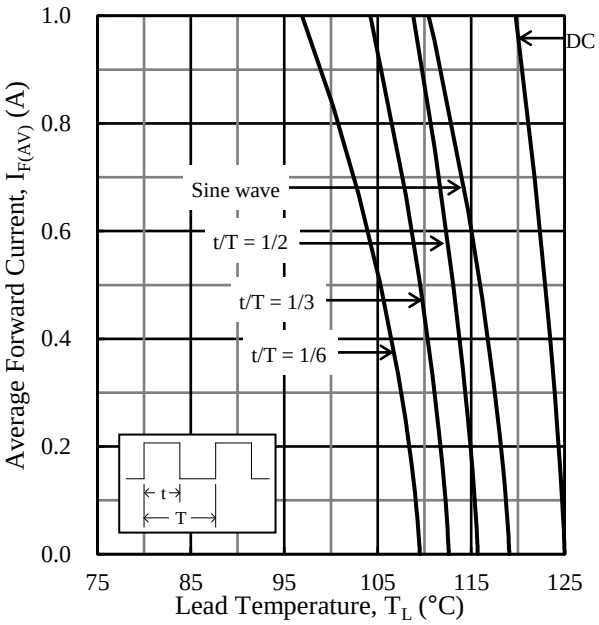



Figure 3. $I_{F(AV)}$ vs. $T_L$ ($T_J$ = 125 °C, $V_R$ = 15 V)

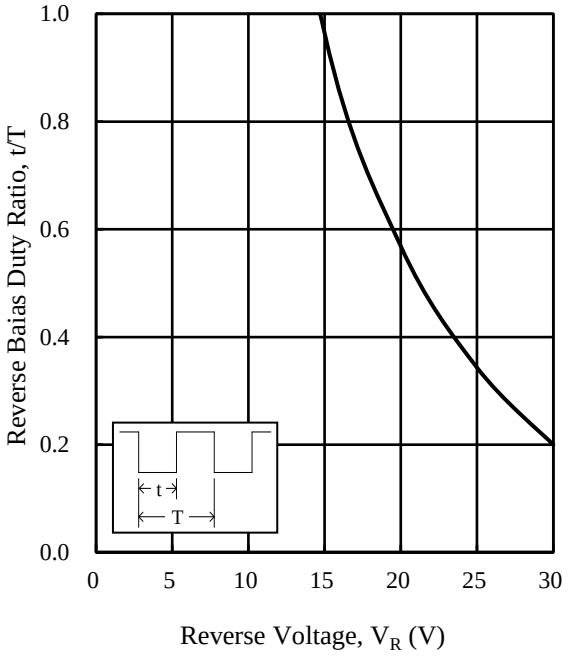



Figure 4. t/T vs. $V_R$

## Characteristic Curves

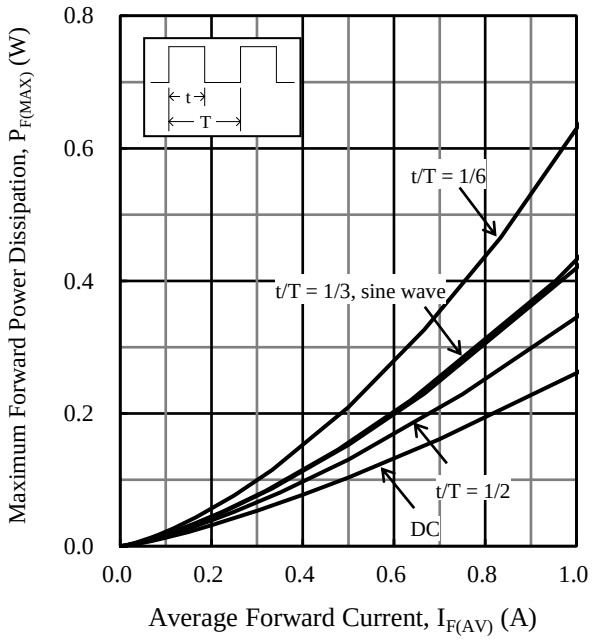



Figure 5. $P_{F(MAX)}$ vs. $I_{F(AV)}$ ($T_J$ = 125 °C)

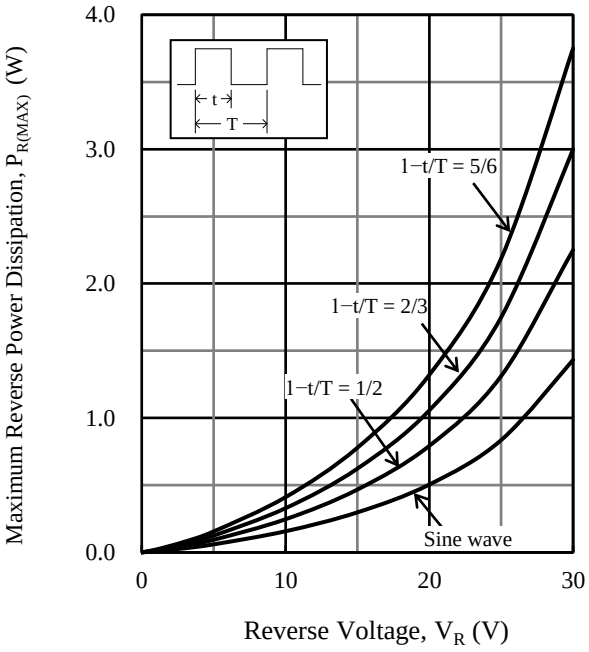



Figure 6. $P_{R(MAX)}$ vs. $V_R$ ($T_J$ = 125 °C)

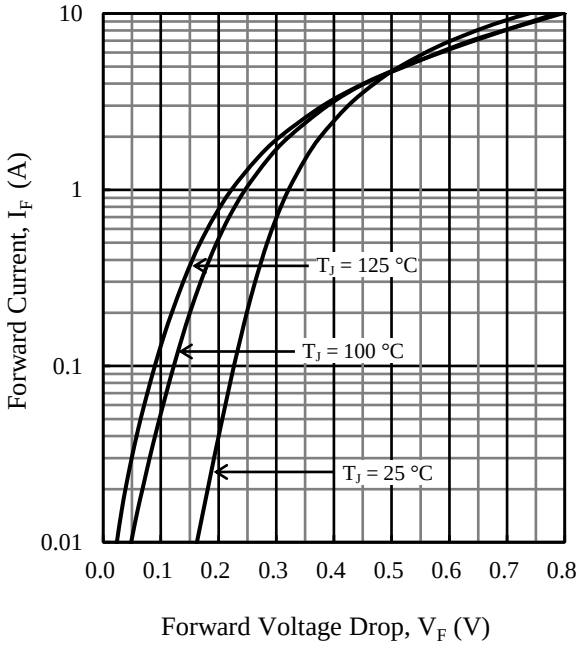



Figure 7. Typical Characteristics: $I_F$ vs. $V_F$

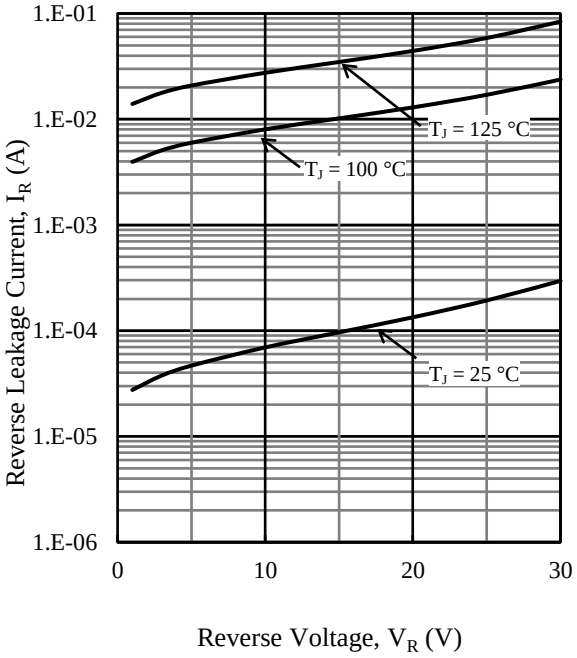



Figure 8. Typical Characteristics: $I_R$ vs. $V_R$

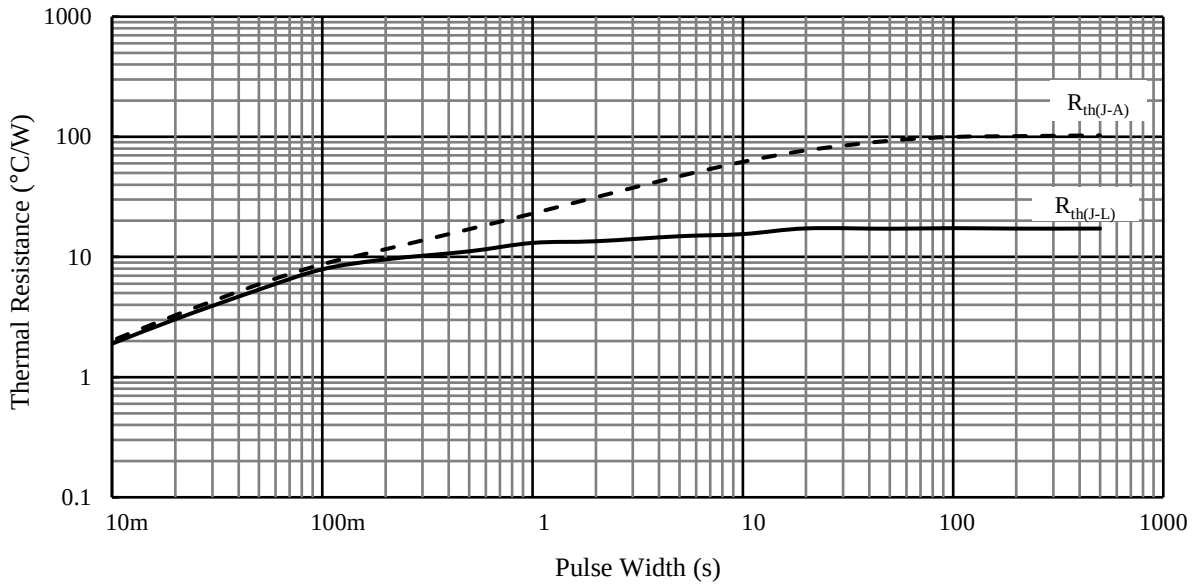
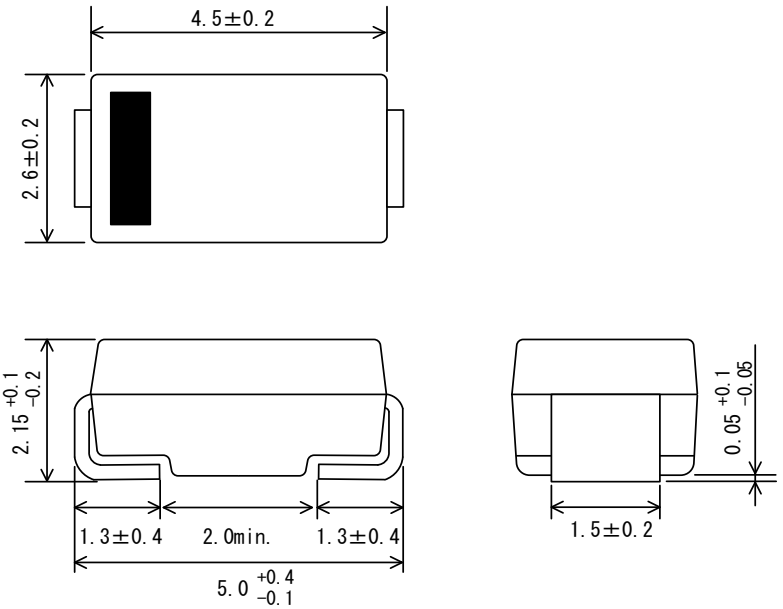



Figure 9. Typical Transient Thermal Resistance Characteristics

## Physical Dimensions

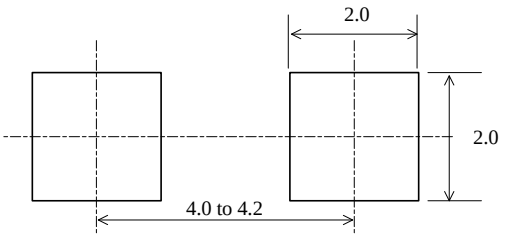
● **SJP Package**




**NOTES:**

- Dimensions in millimeters
- Bare lead frame: Pb-free (RoHS compliant)
- Moisture Sensitivity Level 1 (MSL 1)
- When soldering the products, it is required to minimize the working time within the following limits:
  Flow: 260 °C / 10 s, 1 time
  Reflow:
  Preheat: 150 °C to 200 °C / 60 s to 120 s
  Solder heating: 255 °C / 30 s, 3 times (260 °C peak)
  Soldering Iron: 350 °C / 3.5 s, 1 time

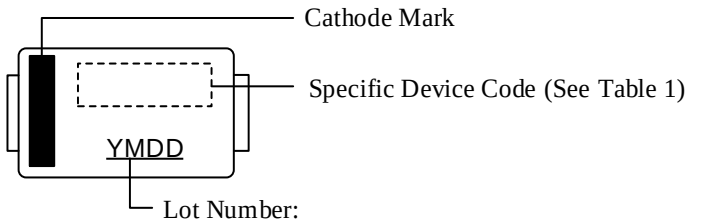
● **SJP Land Pattern Example**




**NOTE:**

- Dimensions in millimeters

## Marking Diagram




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

| Specific Device Code | Part Number |
|---|---|
| AD3 | SJPA-D3 |

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